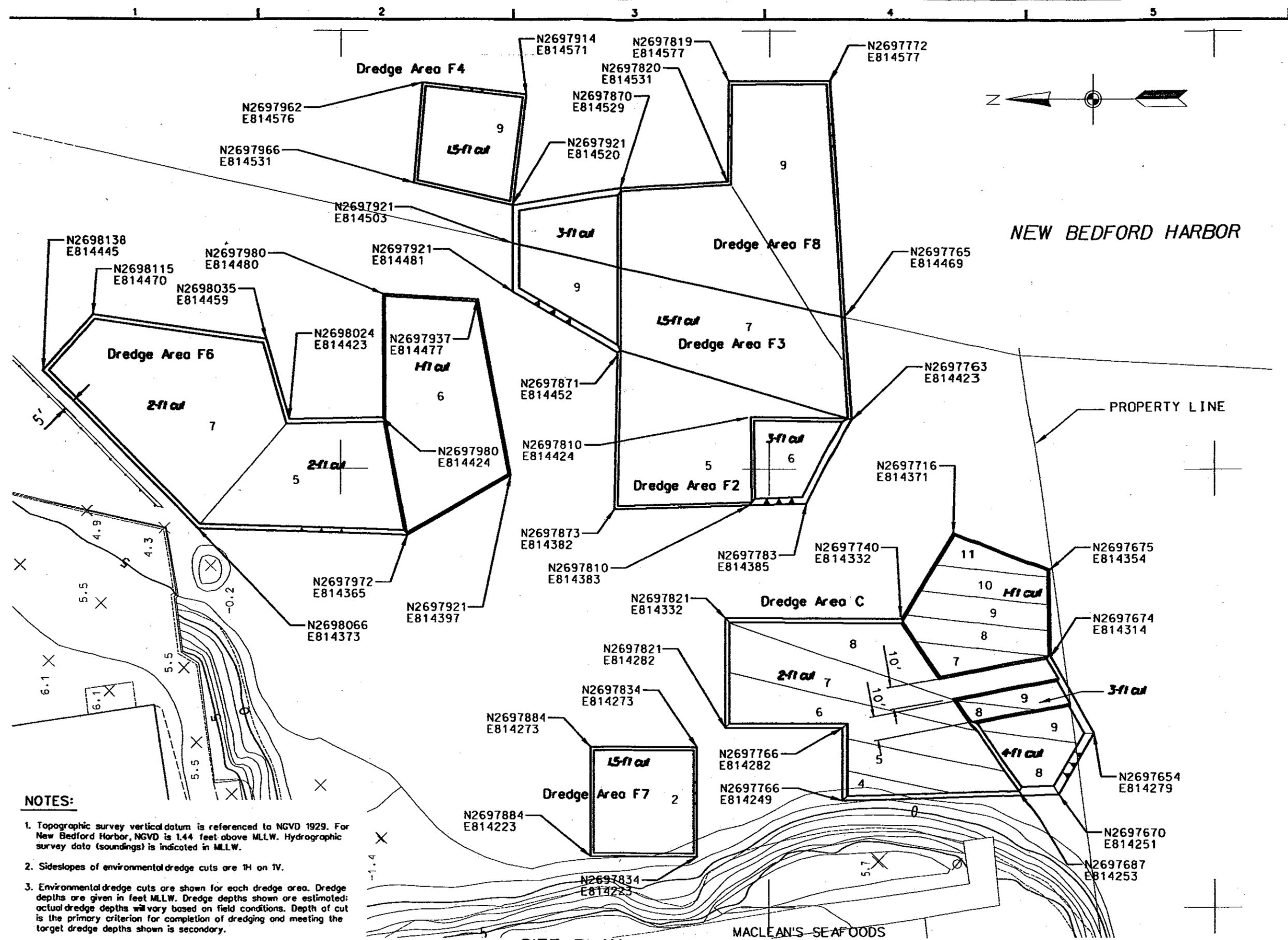


Appendix A
USACE May 2003 Drawings

Appendix B
USACE August 2003 Drawings

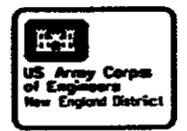


NOTES:

1. Topographic survey vertical datum is referenced to NGVD 1929. For New Bedford Harbor, NGVD is 1.44 feet above MLLW. Hydrographic survey data (soundings) is indicated in MLLW.
2. Sideslopes of environmental dredge cuts are 3H on 1V.
3. Environmental dredge cuts are shown for each dredge area. Dredge depths are given in feet MLLW. Dredge depths shown are estimated; actual dredge depths will vary based on field conditions. Depth of cut is the primary criterion for completion of dredging and meeting the target dredge depths shown is secondary.

SITE PLAN
SCALE: 1" = 20'

20 10 0 20 40 FT
SCALE: 1" = 20'



Checked by: M. DeRose	Date: May 2003	Drawn by: M. DeRose	Design file no. CONACT22003	Reviewed by: M. DeRose	Drawing code:	Submitted by:	Per. name: M. DeRose	Reg. No.:	Per. No.:
U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS CONCORD, MASSACHUSETTS									

NEW BEDFORD HARBOR SUPERFUND SITE
UPPER AND LOWER HARBOR (OU-1)
NEW BEDFORD, MASSACHUSETTS
MELVILLE SHIPYARD DREDGING
ENVIRONMENTAL DREDGING PLAN - 2

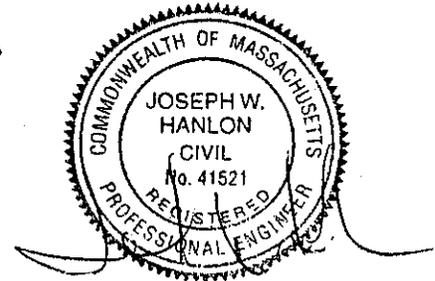
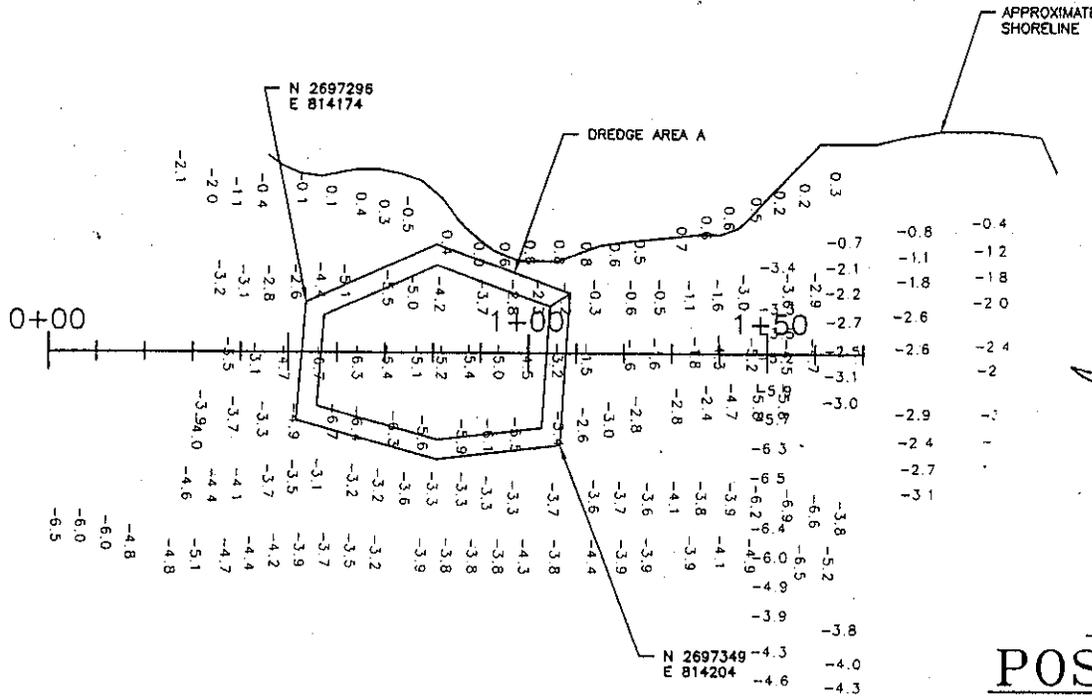
Reference number:
C-2
Sheet 3 of 5

Appendix C

BCE's As-Built Surveys

Appendix C.1	Area A As-Built Cross Sections
Appendix C.2	Area B As-Built Cross Sections
Appendix C.3	Area C As-Built Cross Sections
Appendix C.4	Area C Additional Dredging As-Built Cross Sections
Appendix C.5	Area D As-Built Cross Sections
Appendix C.6	Post Dredge Survey Plan

Appendix C.1
Area A As-Built Cross Sections



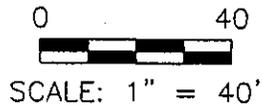
AREA A POST-DREDGE SITE PLAN

NEW BEDFORD SUPERFUND SITE
MELVILLE SHIPYARD DREDGING
USACE CONTRACT# DACW 33-94-D-002
NEW BEDFORD, MA
DECEMBER 5, 2003



DEC 08 2003

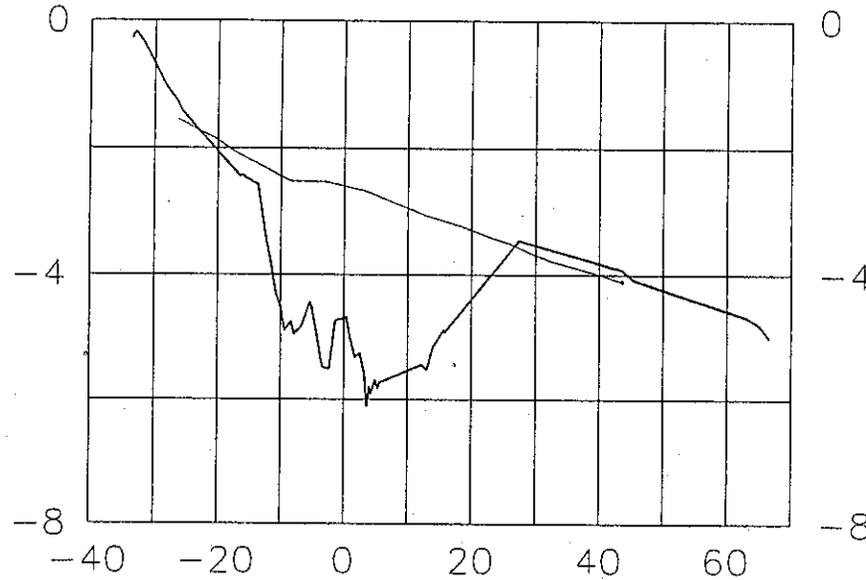
BOURNE CONSULTING ENGINEERING



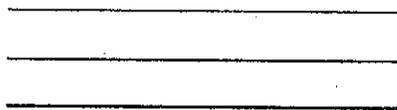
	Bourne Consulting Engineering <small>104 West Central Street Providence, RI 02909 TEL (401) 528-4153 FAX (401) 528-0971</small>			
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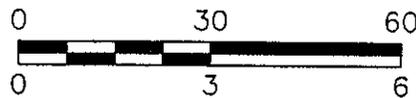
BCE PRE-DREDGE
 BCE POST-DREDGE
 PROPOSED DREDGE

AREA A
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'

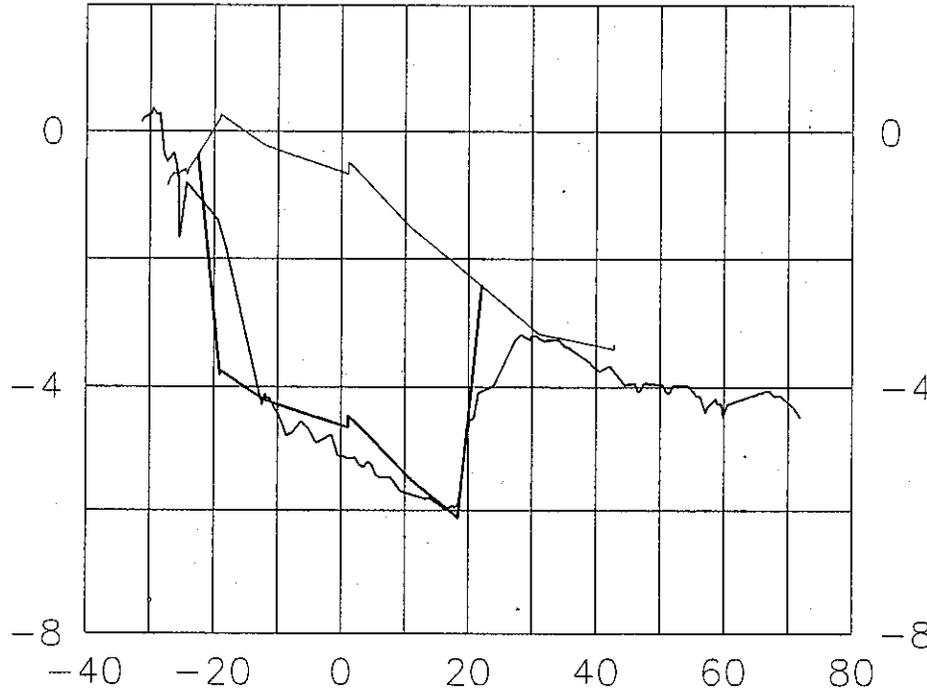
VERTICAL SCALE: 1" = 3'



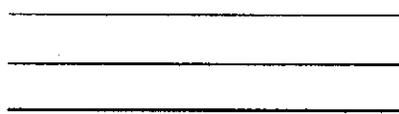
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	SHEET <u>3</u> OF <u>11</u>	
	REVISIONS	

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0+80



LEGEND:



_____ BCE PRE-DREDGE
 _____ BCE POST-DREDGE
 _____ PROPOSED DREDGE

AREA A
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



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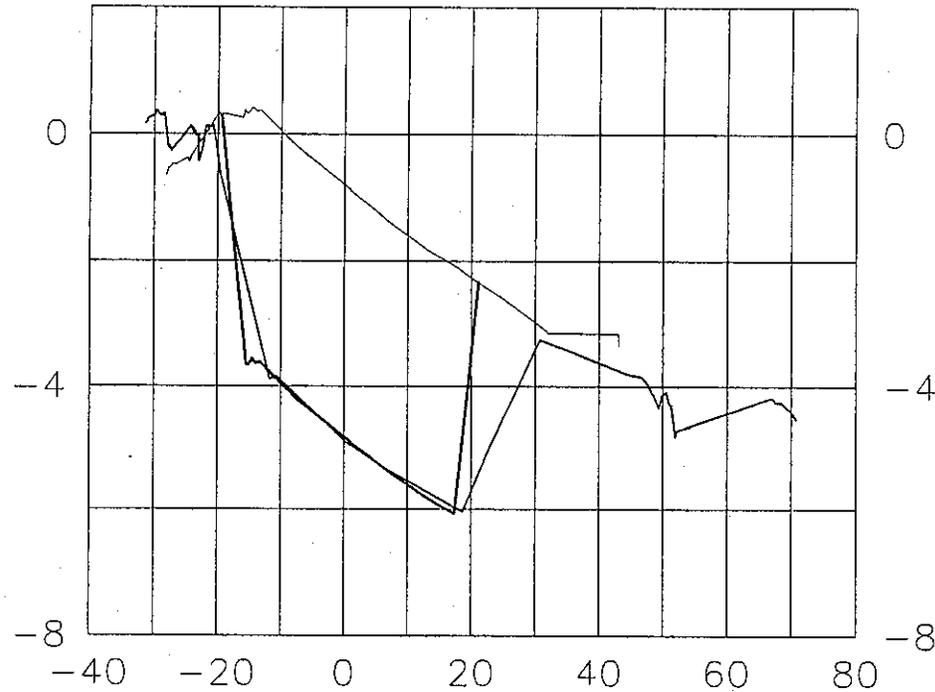
BCE *Bourne Consulting Engineering*
 104 Pond Control Street
 Franklin, MA 02008
 PH: (508) 529-8150 FAX: (508) 529-9971

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 APPROVED: JWH
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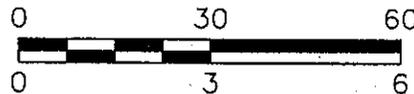
- BCE PRE-DREDGE
- BCE POST-DREDGE
- PROPOSED DREDGE

AREA A
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



NO.	DESCRIPTION	DATE

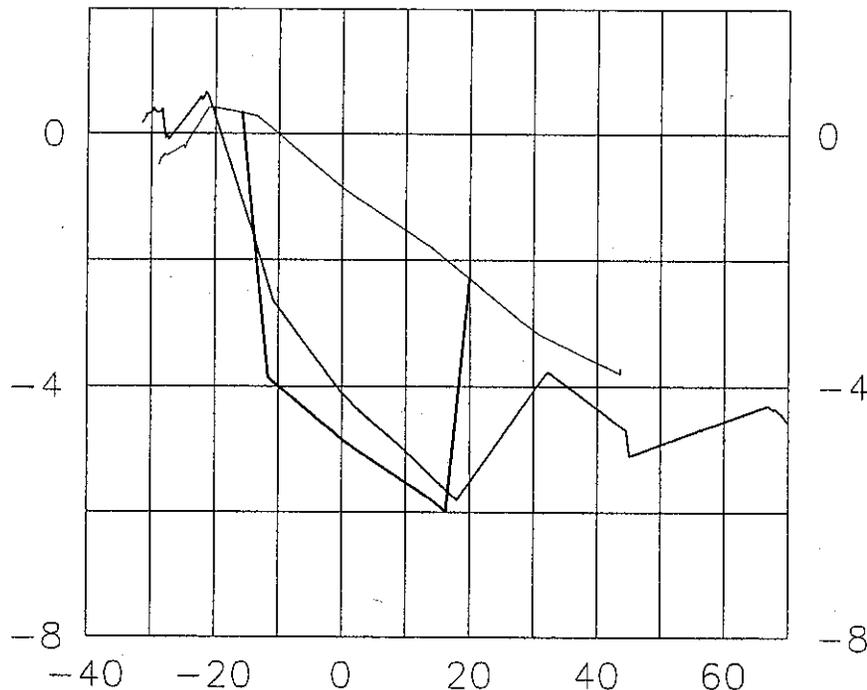
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144 Ford Central Street
 Franklin, MA 02045
 TEL (508) 828-8133 FAX (508) 828-8071

DRAWN: RBH
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 APPROVED: JWH
 DATE: 12/05/03

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 SHEET 7 OF 11

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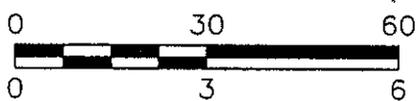


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- _____ BCE PRE-DREDGE
- _____ BCE POST-DREDGE
- _____ PROPOSED DREDGE

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



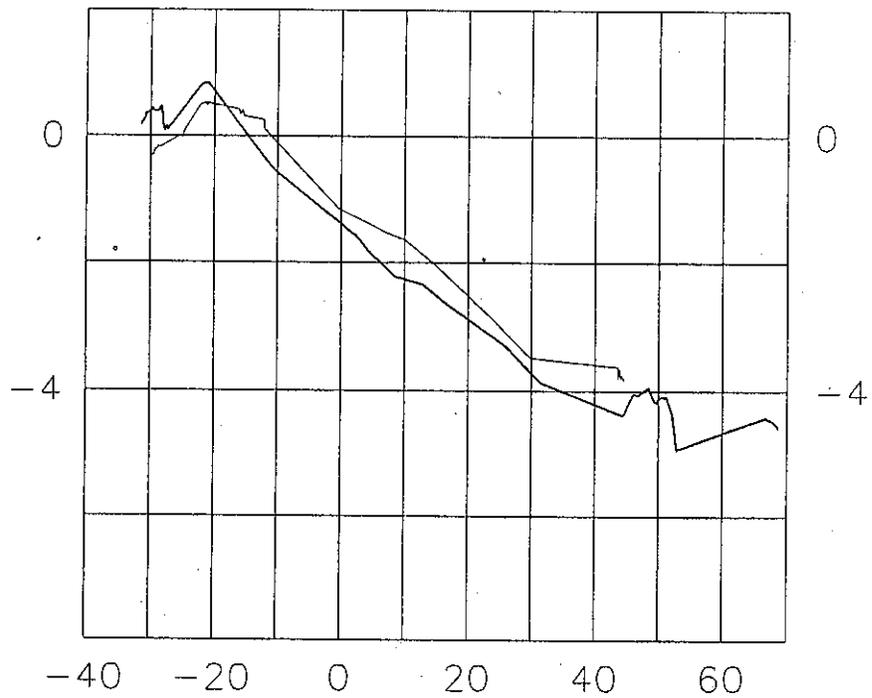
AREA A
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

	Bourne Consulting Engineering <small>194 West Central Street Bourne, MA 02532 PH: (508) 636-6133 FAX: (508) 636-9971</small>
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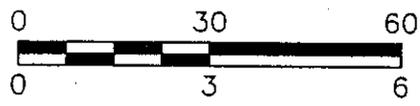
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-  BCE POST-DREDGE
-  PROPOSED DREDGE

AREA A
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'
 VERTICAL SCALE: 1" = 3'



NO.	DESCRIPTION	DATE

BCE *Bourne Consulting Engineering*
 194 West Central Street
 Franklin, MA 02039
 TEL (508) 639-8133 FAX (508) 639-8171

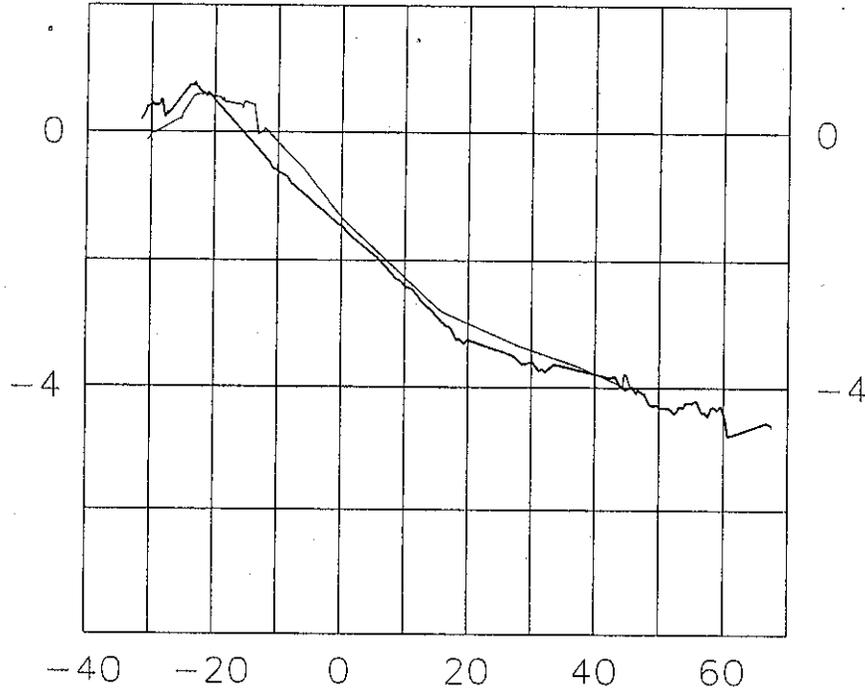
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SHEET 9 OF 11

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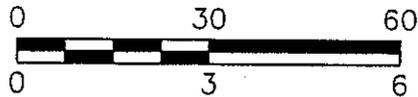
LEGEND:



BCE PRE-DREDGE
BCE POST-DREDGE
PROPOSED DREDGE

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



**AREA A
POST-DREDGE
CROSS-SECTIONS**

DECEMBER 5, 2003

REVISIONS	 Bourne Consulting Engineering <small>104 West Central Street Freetown, MA 02639 PH. (508) 536-8133 FAX. (508) 536-8971</small>	DRAWING NO. 23468-05-10 SHEET 10 OF 11
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	APPROVED: <u>JWH</u> DATE: <u>12/05/03</u>	

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NOTES:

1. CROSS SECTIONS BASED ON A PLAN BY BOURNE CONSULTING ENGINEERING ENTITLED "POST DREDGE AREA A, POST DREDGE AREA C NEW BEDFORD SUPERFUND SITE MELVILLE SHIPYARD DREDGING USACE CONTRACT# DACW 33-94-D-002" DATED 10/17/03
2. ELEVATIONS ARE SHOWN IN FEET AND TENTHS BASED ON A MEAN LOWER LOW WATER DATUM. POSITIVE VALUES REPRESENT DEPTH ABOVE THAT SAME PLANE.
3. THE INFORMATION PRESENTED ON THIS CHART REPRESENTS THE RESULTS OF SURVEYS PERFORMED BY BOURNE CONSULTING ENGINEERING ON 8/12/03 AND 10/16/03 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO BCE.
4. HORIZONTAL AND VERTICAL CONTROL FOR THIS SURVEY WAS PROVIDED BY MAXYMILLIAN TECHNOLOGIES INC.
5. BENCH MARK IS A POINT SET IN THE NORTHEAST CORNER OF A CONCRETE PAD (DECON PAD) ELEV=8.14 NGVD
=9.58 MLLW
6. DREDGE AREAS TAKEN FROM A PLAN ENTITLED "NEW BEDFORD HARBOR SUPER FUND SITE (OU#1) NEW BEDFORD, MA. MELVILLE SHIPYARD DREDGING ENVIRONMENTAL DREDGING PLAN -1&2" PREPARED BY USACE MAY, 2003
7. DREDGE DEPTHS WITHIN THE DREDGE AREA WERE ADJUSTED BY -0.2 TO COMPENSATE FOR FLUFFING MEASUREMENTS TAKEN WITHIN THE DREDGE AREA ON NOVEMBER 18, 2003.
8. DREDGE VOLUME BASED ON PRE AND POST DREDGE HYDROGRAPHIC SURVEYS IS AS FOLLOWS:

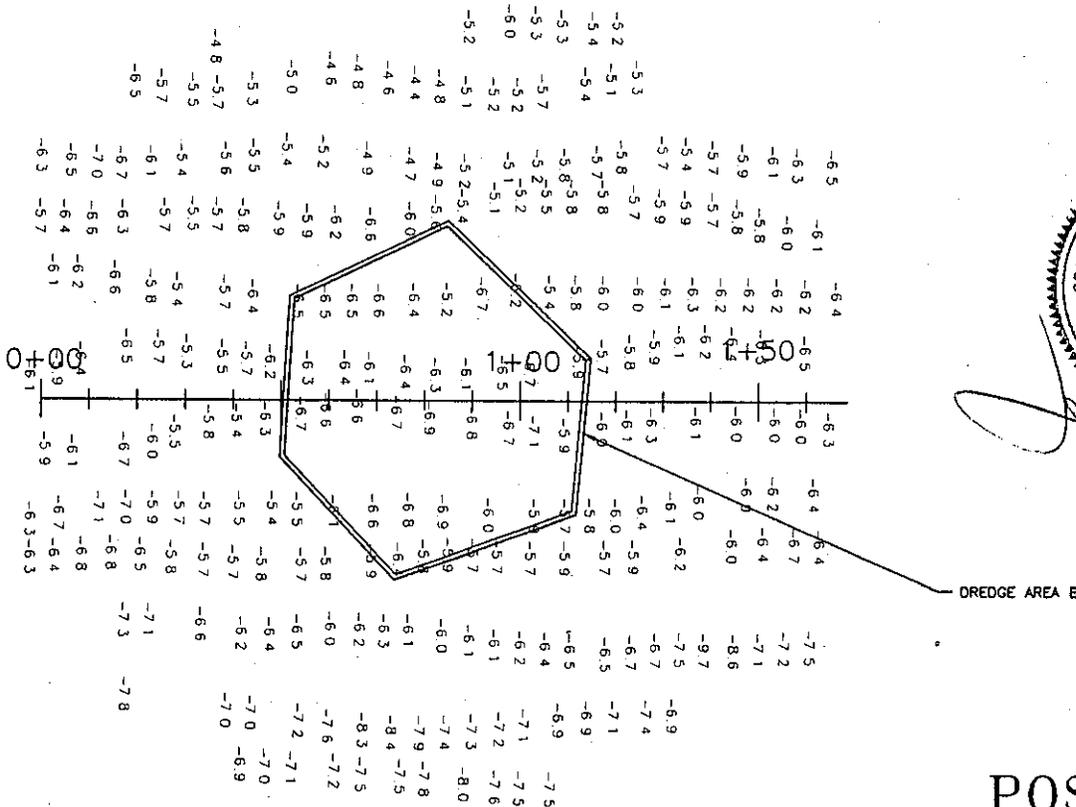
<u>AREA DESIGNATION</u>	<u>DREDGE VOLUME</u>
DREDGING AREA A	331 CUBIC YARDS

AREA A
POST-DREDGE
NOTES

NEW BEDFORD SUPERFUND SITE
MELVILLE SHIPYARD DREDGING
USACE CONTRACT# DACW 33-94-D-002
NEW BEDFORD, MA
DECEMBER 5, 2003

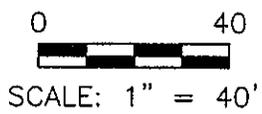
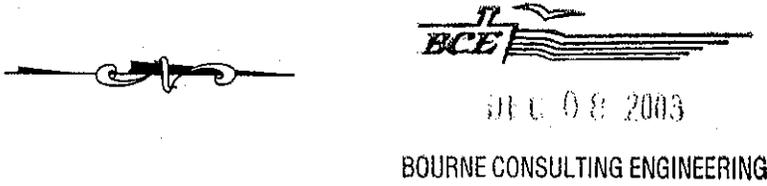
REVISIONS		 Bourne Consulting Engineering <small>184 West Central Street Providence, RI 02909 PH. (508) 528-8133 FAX. (508) 580-0971</small>		DRAWING NO. 23468-05-11 SHEET <u>11</u> OF <u>11</u>
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			CHECKED: <u>JWH</u>	
			APPROVED: <u>JWH</u>	
			DATE: <u>12/05/03</u>	

Appendix C.2
Area B As-Built Cross Sections



AREA B POST-DREDGE SITE PLAN

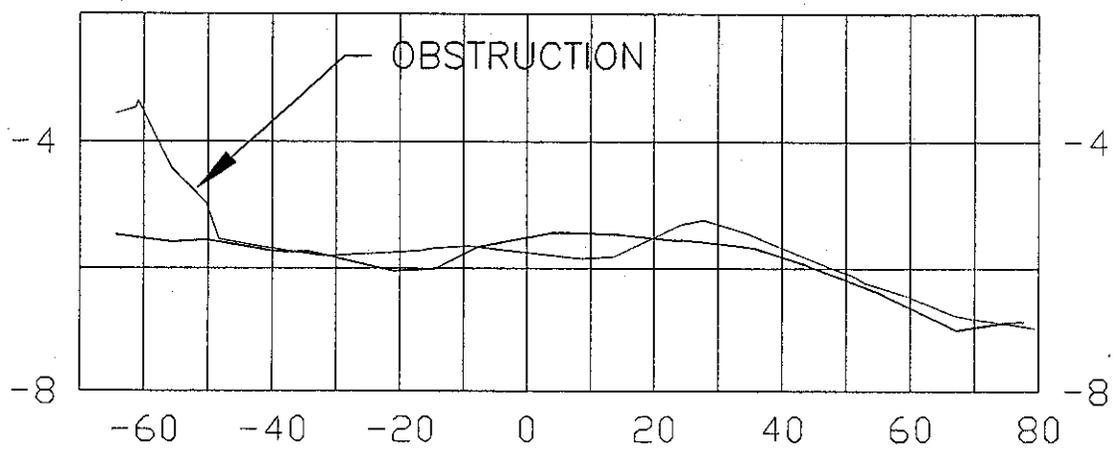
NEW BEDFORD SUPERFUND SITE
MELVILLE SHIPYARD DREDGING
USACE CONTRACT# DACW 33-94-D-002
NEW BEDFORD, MA
DECEMBER 5, 2003



	Bourne Consulting Engineering <small>104 West Central Street Providence, RI 02908 TEL (508) 830-8155 FAX (508) 830-0671</small>	DRAWING NO. 23468-04-01 SHEET 1 OF 11
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REVISIONS:		

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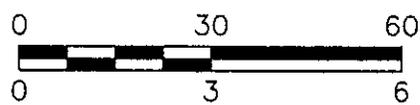
-  BCE PRE-DREDGE
-  BCE POST-DREDGE
-  PROPOSED DREDGE

AREA B
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'

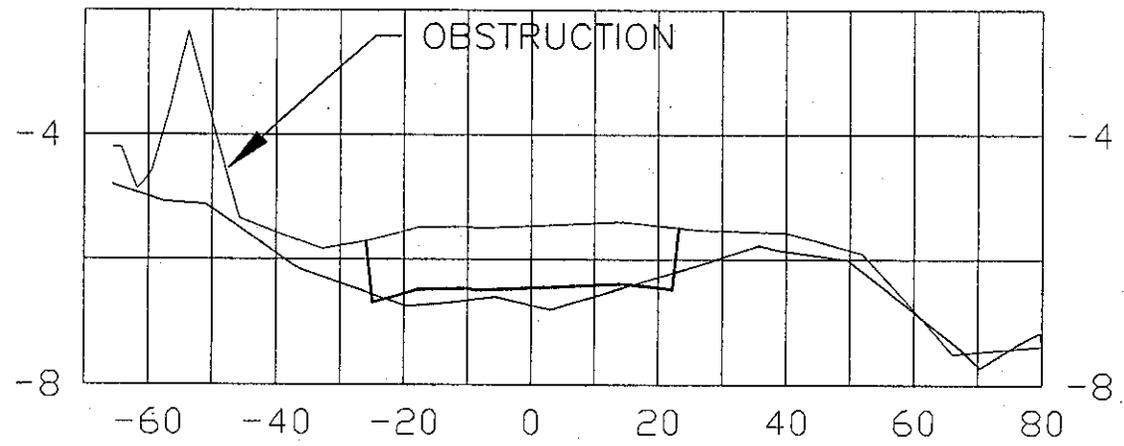
VERTICAL SCALE: 1" = 3'



REVISIONS		Bourne Consulting Engineering <small>104 West Oxboro Street Franklin, MA 01820 PH. (408) 630-8133 FAX (408) 630-0871</small>
	DRAWN: <u>RBH</u> CHECKED: <u>JWH</u> APPROVED: <u>JWH</u> DATE: <u>12/05/03</u>	DRAWING NO. <u>23468-04-02</u>
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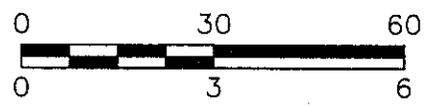


LEGEND:

- _____ BCE PRE-DREDGE
- _____ BCE POST-DREDGE
- _____ PROPOSED DREDGE

AREA B
POST-DREDGE
CROSS-SECTIONS
 DECEMBER 5, 2003

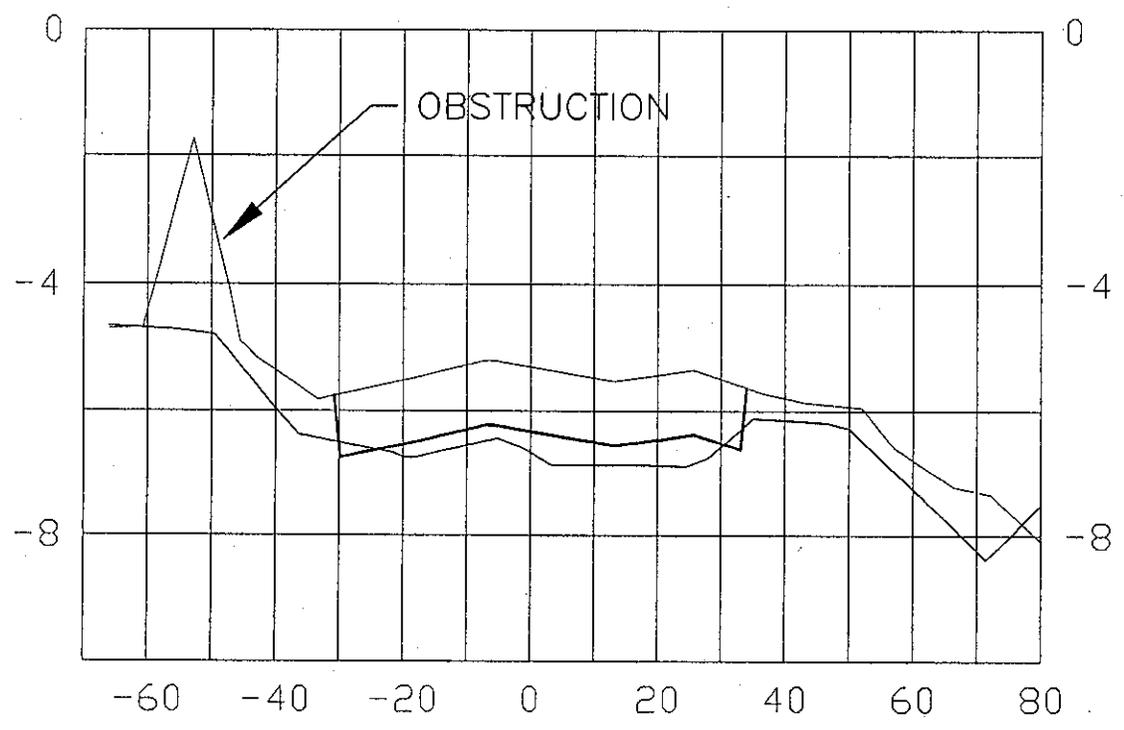
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 VERTICAL SCALE: 1" = 3'



REVISIONS	Bourne Consulting Engineering <small>194 West Central Street Franklin, MA 01905 TEL: (508) 636-4133 FAX: (508) 636-0071</small>	DRAWING NO. 23468-04-04
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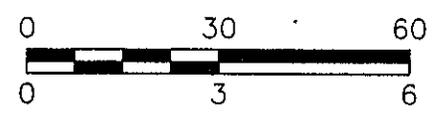
- _____ BCE PRE-DREDGE
- _____ BCE POST-DREDGE
- _____ PROPOSED DREDGE

AREA B
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'

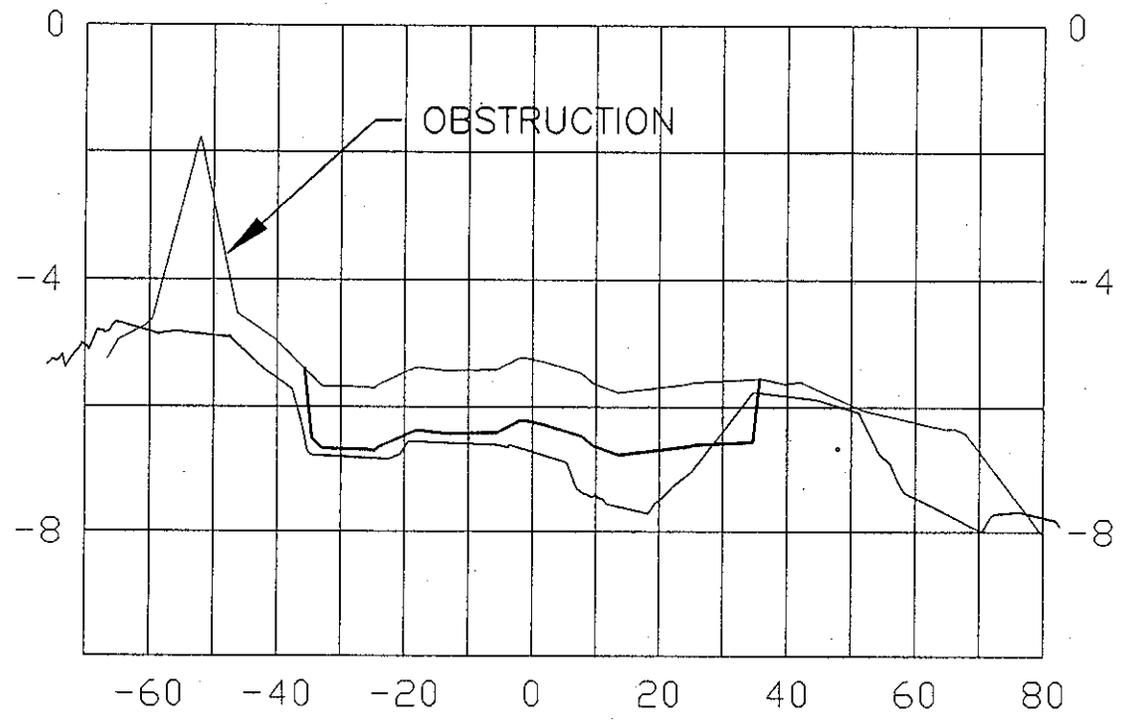
VERTICAL SCALE: 1" = 3'



	Bourne Consulting Engineering <small>100 West Oyster Street Franklin, NJ 08823 PH: (908) 630-8133 FAX: (908) 630-0671</small>
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REVISIONS	

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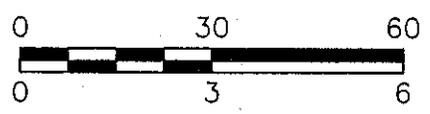


LEGEND:

- _____ BCE PRE-DREDGE
- _____ BCE POST-DREDGE
- _____ PROPOSED DREDGE

AREA B
POST-DREDGE
CROSS-SECTIONS
 DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'
 VERTICAL SCALE: 1" = 3'



NO.	DATE	DESCRIPTION



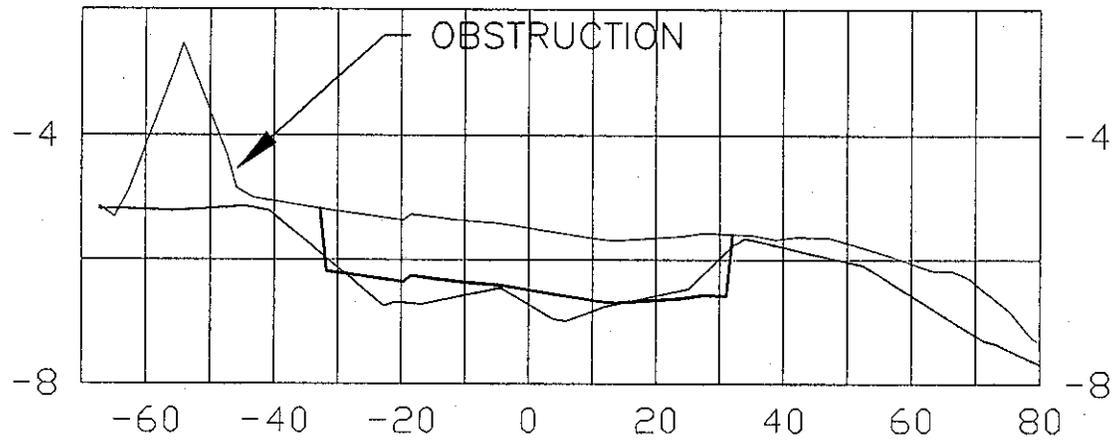
Bourne Consulting Engineering
164 West Central Street
 Franklin, MA 01903
 PH. (508) 636-6133 FAX (508) 636-6071

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 DATE: 12/05/03

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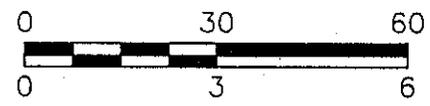


LEGEND:

-  BCE PRE-DREDGE
-  BCE POST-DREDGE
-  PROPOSED DREDGE

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



AREA B
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

REVISIONS	 Bourne Consulting Engineering <small>104 Pond Control Street Bourne, MA 02608 TEL (508) 638-8133 FAX (508) 638-0073</small>	
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	SHEET <u>7</u> OF <u>11</u>	

NOTES:

1. CROSS SECTIONS BASED ON A PLAN BY BOURNE CONSULTING ENGINEERING ENTITLED "POST DREDGE AREA B, NEW BEDFORD SUPERFUND SITE MELVILLE SHIPYARD DREDGING USACE CONTRACT# DACW 33-94-D-002" DATED 10/06/03
2. ELEVATIONS ARE SHOWN IN FEET AND TENTHS BASED ON A MEAN LOWER LOW WATER DATUM. POSITIVE VALUES REPRESENT DEPTH ABOVE THAT SAME PLANE.
3. THE INFORMATION PRESENTED ON THIS CHART REPRESENTS THE RESULTS OF SURVEYS PERFORMED BY BOURNE CONSULTING ENGINEERING ON 8/12/03 AND 9/8/03 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO BCE.
4. HORIZONTAL AND VERTICAL CONTROL FOR THIS SURVEY WAS PROVIDED BY MAXYMILLIAN TECHNOLOGIES INC.
5. BENCH MARK IS A POINT SET IN THE NORTHEAST CORNER OF A CONCRETE PAD (DECON PAD) ELEV=8.14 NGVD
=9.58 MLLW
6. DREDGE AREAS TAKEN FROM A PLAN ENTITLED "NEW BEDFORD HARBOR SUPER FUND SITE (OU#1) NEW BEDFORD, MA. MELVILLE SHIPYARD DREDGING ENVIRONMENTAL DREDGING PLAN -1&2" PREPARED BY USACE MAY, 2003
7. DREDGE DEPTHS WITHIN THE DREDGE AREA WERE ADJUSTED BY -0.2 TO COMPENSATE FOR FLUFFING MEASUREMENTS TAKEN WITHIN THE DREDGE AREA ON NOVEMBER 18, 2003.
8. DREDGE VOLUME BASED ON PRE AND POST DREDGE HYDROGRAPHIC SURVEYS IS AS FOLLOWS:

<u>AREA DESIGNATION</u>	<u>DREDGE VOLUME</u>
DREDGING AREA B	173 CUBIC YARDS

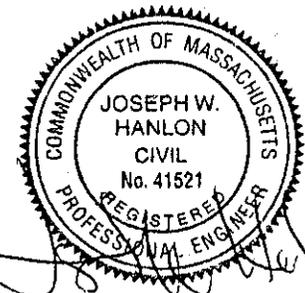
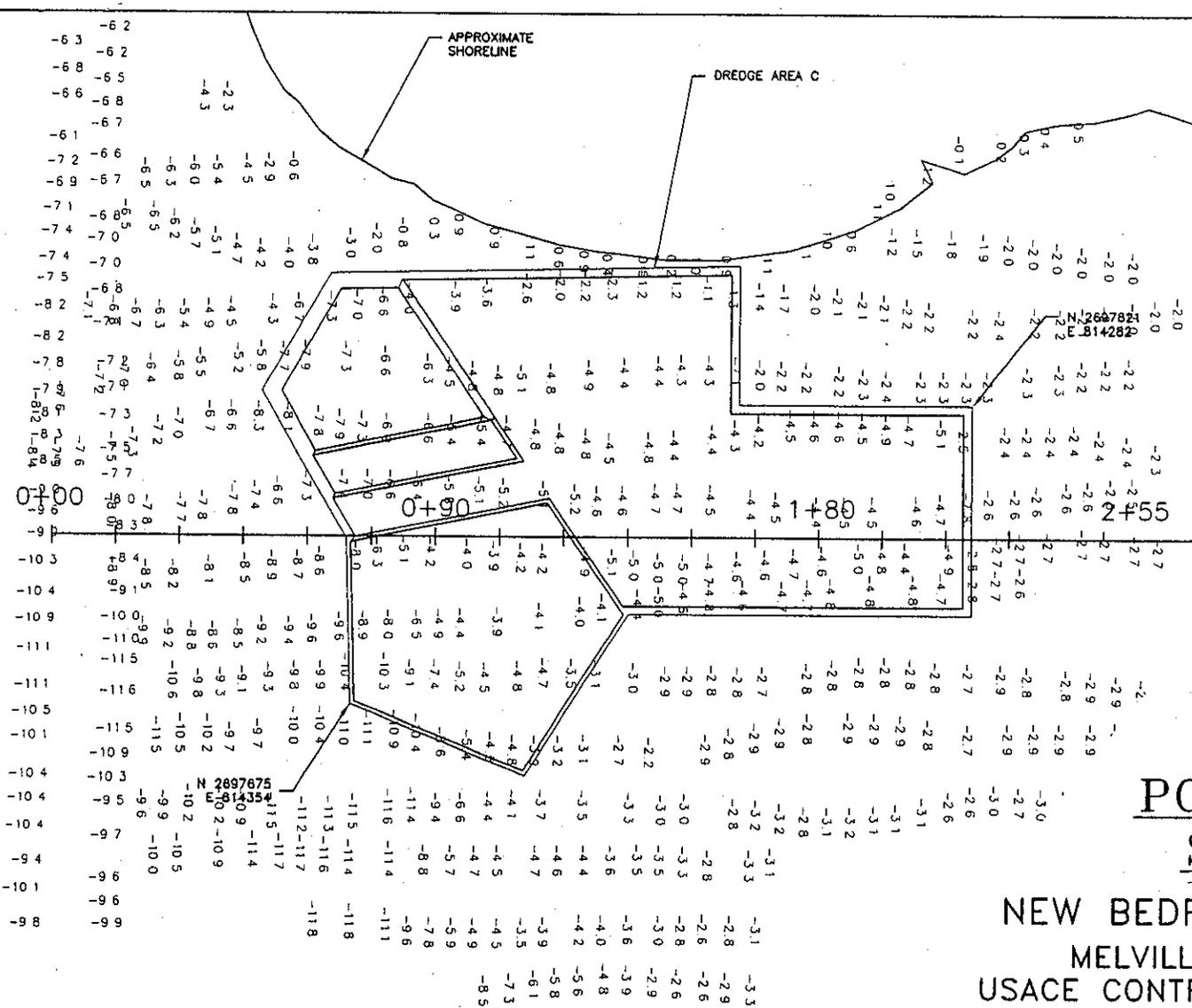
AREA B
POST-DREDGE
CROSS-SECTIONS

NEW BEDFORD SUPERFUND SITE
MELVILLE SHIPYARD DREDGING
USACE CONTRACT# DACW 33-94-D-002
NEW BEDFORD, MA
DECEMBER 5, 2003

REVISIONS	 Bourne Consulting Engineering	DRAWING NO. 23468-04-11
	<small>100 West Central Street Franklin, MA 01830 PH: (408) 588-8133 FAX: (408) 588-8071</small>	
	DRAWN: <u>RBH</u>	
	CHECKED: <u>JWH</u>	
	APPROVED: <u>JWH</u>	
	DATE: <u>12/05/03</u>	SHEET 11 OF 11

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Appendix C.3
Area C As-Built Cross Sections

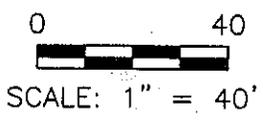


**AREA C
POST-DREDGE
SITE PLAN**

**NEW BEDFORD SUPERFUND SITE
MELVILLE SHIPYARD DREDGING
USACE CONTRACT# DACW 33-94-D-002
NEW BEDFORD, MA
DECEMBER 5, 2003**



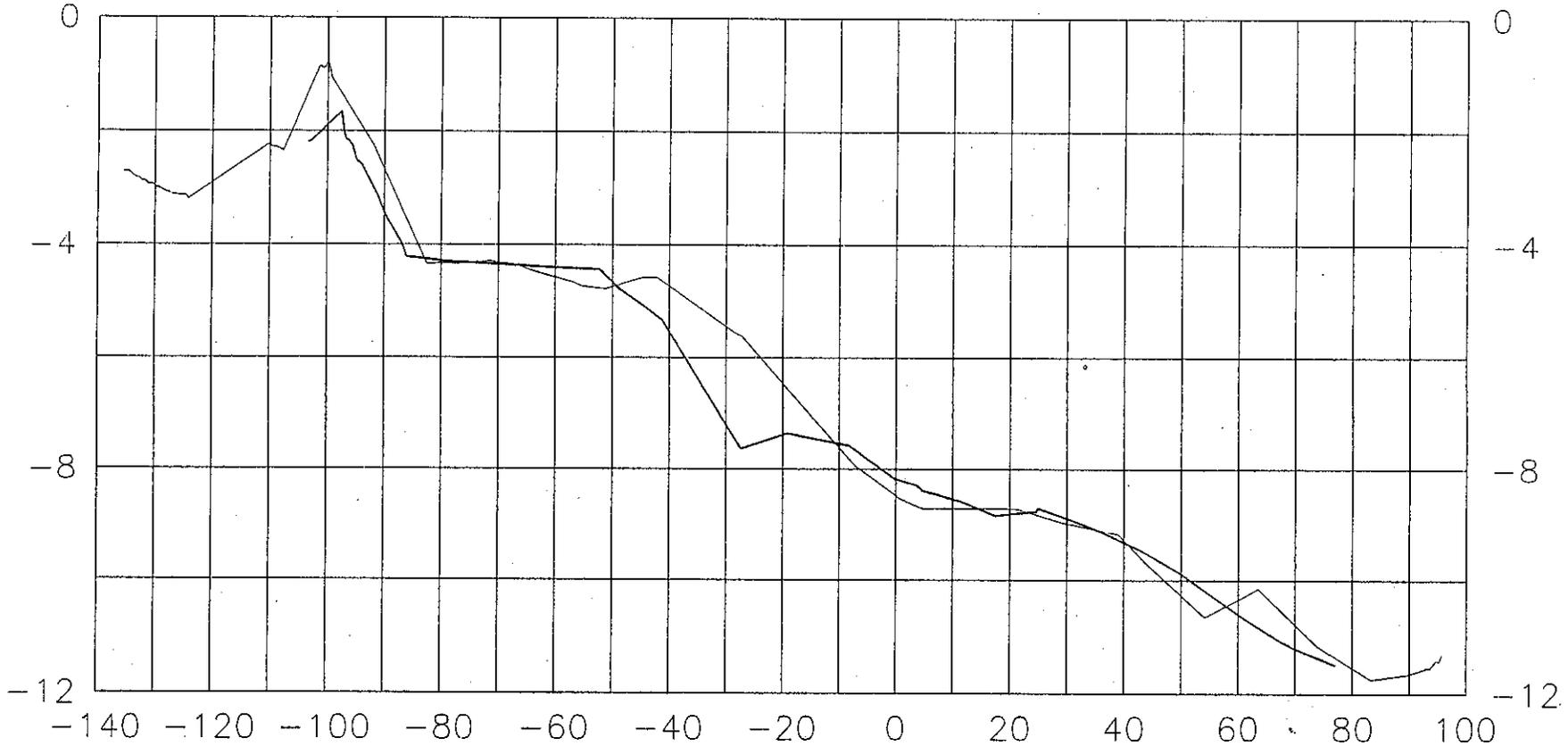
BOURNE CONSULTING ENGINEERING



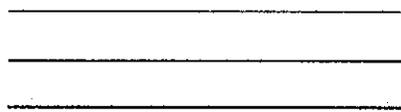
REVISIONS	 Bourne Consulting Engineering <small>104 West Central Street Franklin, MA 01830 PH: (508) 680-6130 FAX: (508) 680-0971</small>	
	DRAWN: RBH CHECKED: JWH APPROVED: JWH DATE: 12/05/03	DRAWING NO. 23468-06-01 SHEET <u>1</u> OF <u>15</u>
	DRAWING NO. 23468-06-01 SHEET <u>1</u> OF <u>15</u>	
	DRAWING NO. 23468-06-01 SHEET <u>1</u> OF <u>15</u>	

File: X:\23468\Maxy, Unsorted Files\dwg\AREA C 8x11 120503.dwg

0+45



LEGEND:



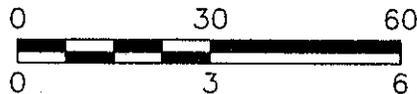
BCE PRE-DREDGE
 BCE POST-DREDGE
 PROPOSED DREDGE

**AREA C
 POST-DREDGE
 CROSS-SECTIONS**

DECEMBER 5, 2003

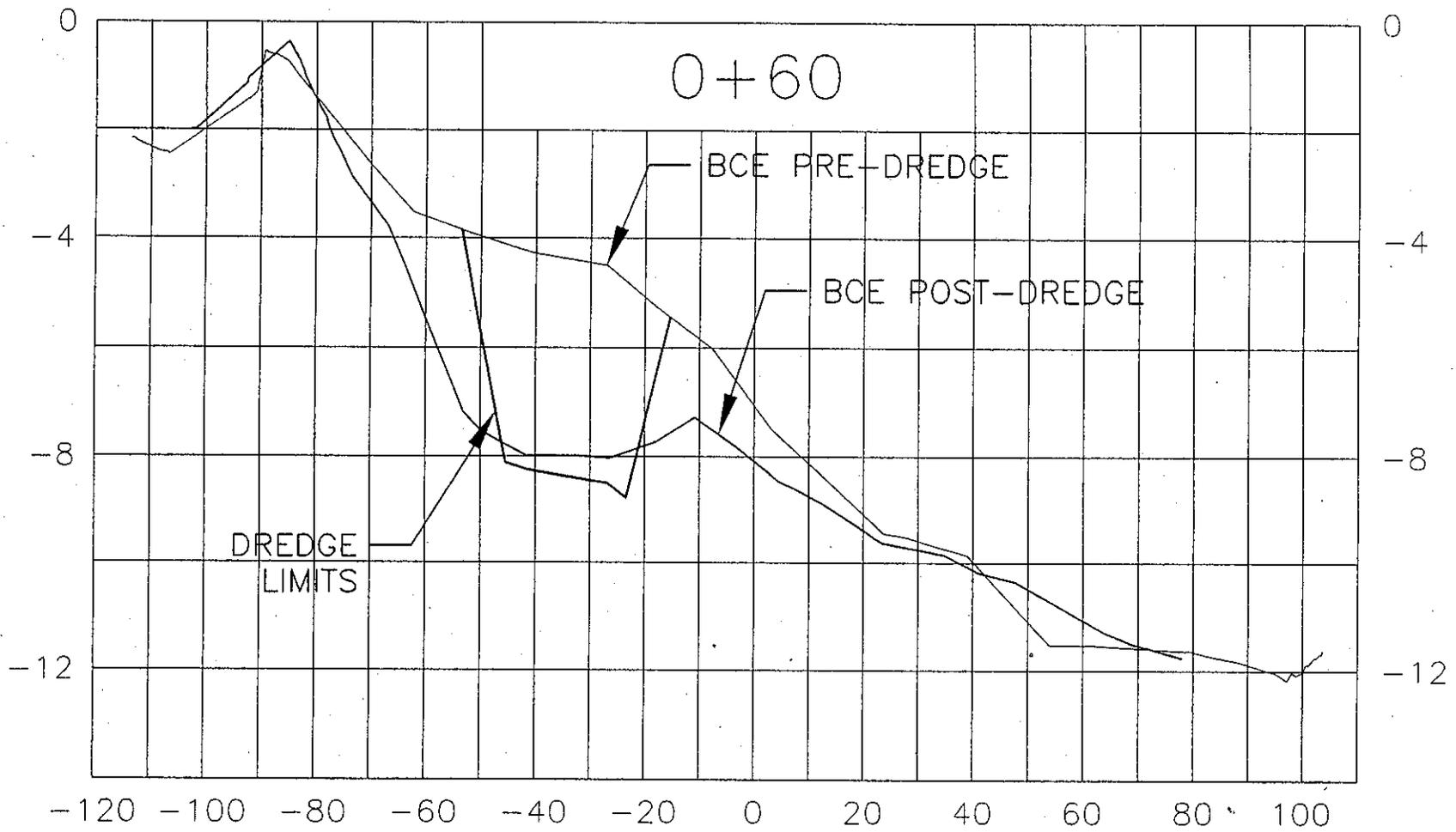
HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



REVISIONS	 Bourne Consulting Engineering <small>144 West Central Street Franklin, MA 01830 PH: (508) 530-8133 FAX: (508) 530-8671</small>	
	DRAWN: RBH	
	CHECKED: JWH	
	APPROVED: JWH	
DATE: 12/05/03		DRAWING NO. 23468-06-02
		SHEET 2 OF 15

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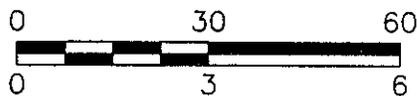
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- _____ BCE POST-DREDGE
- _____ PROPOSED DREDGE

AREA C
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

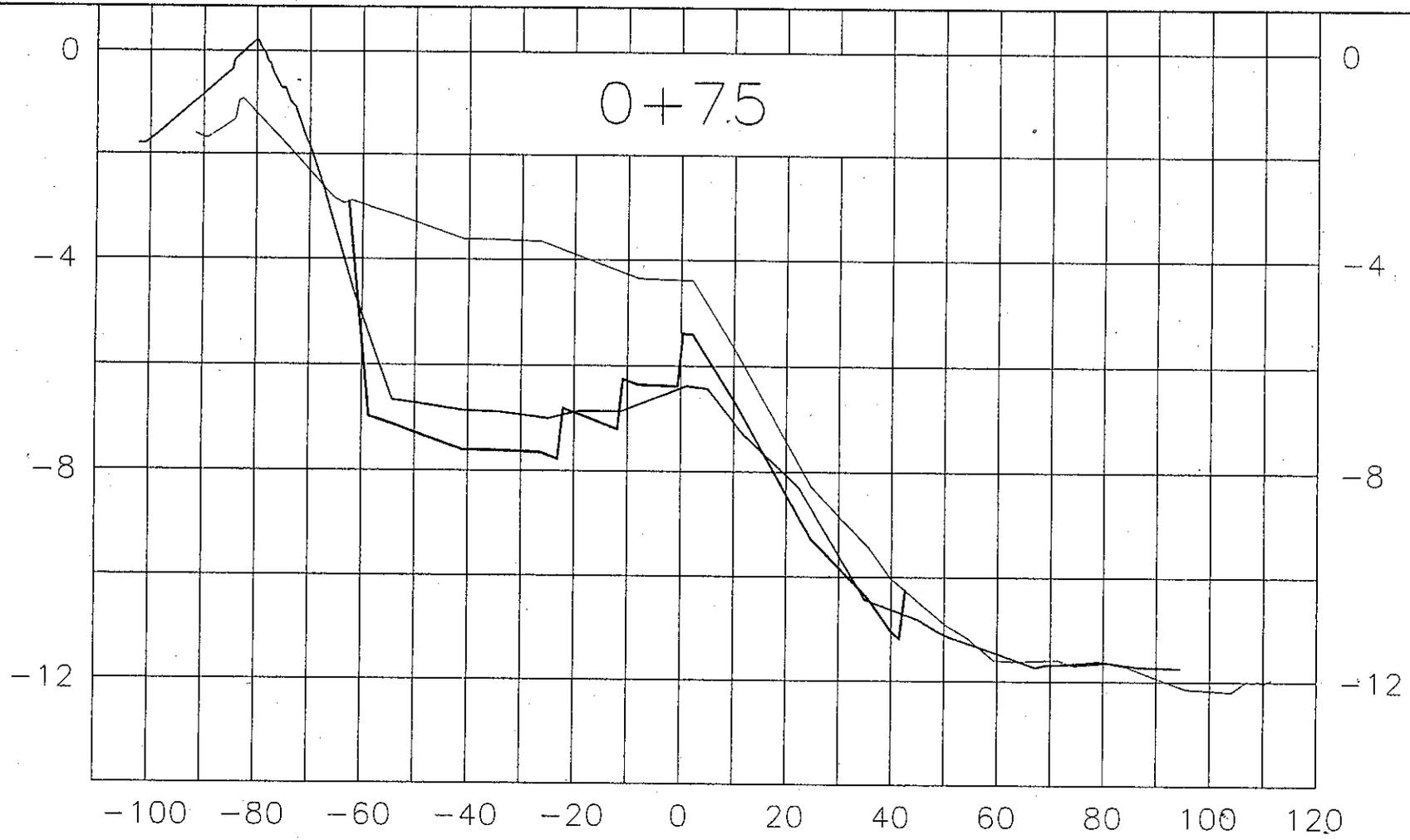
HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



	Bourne Consulting Engineering <small>104 East Central Street Franklin, MA 01903 PH. (508) 530-8133 FAX (508) 530-9071</small>
	DRAWN: RBH _____ CHECKED: JWH _____ APPROVED: JWH _____ DATE: 12/05/03 _____
REVISIONS	DRAWING NO. 23468-06-03 SHEET <u>3</u> OF <u>15</u>

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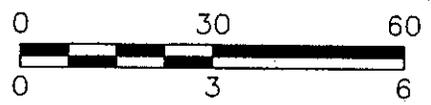
- _____ BCE PRE-DREDGE
- _____ BCE POST-DREDGE
- _____ PROPOSED DREDGE

AREA C
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'

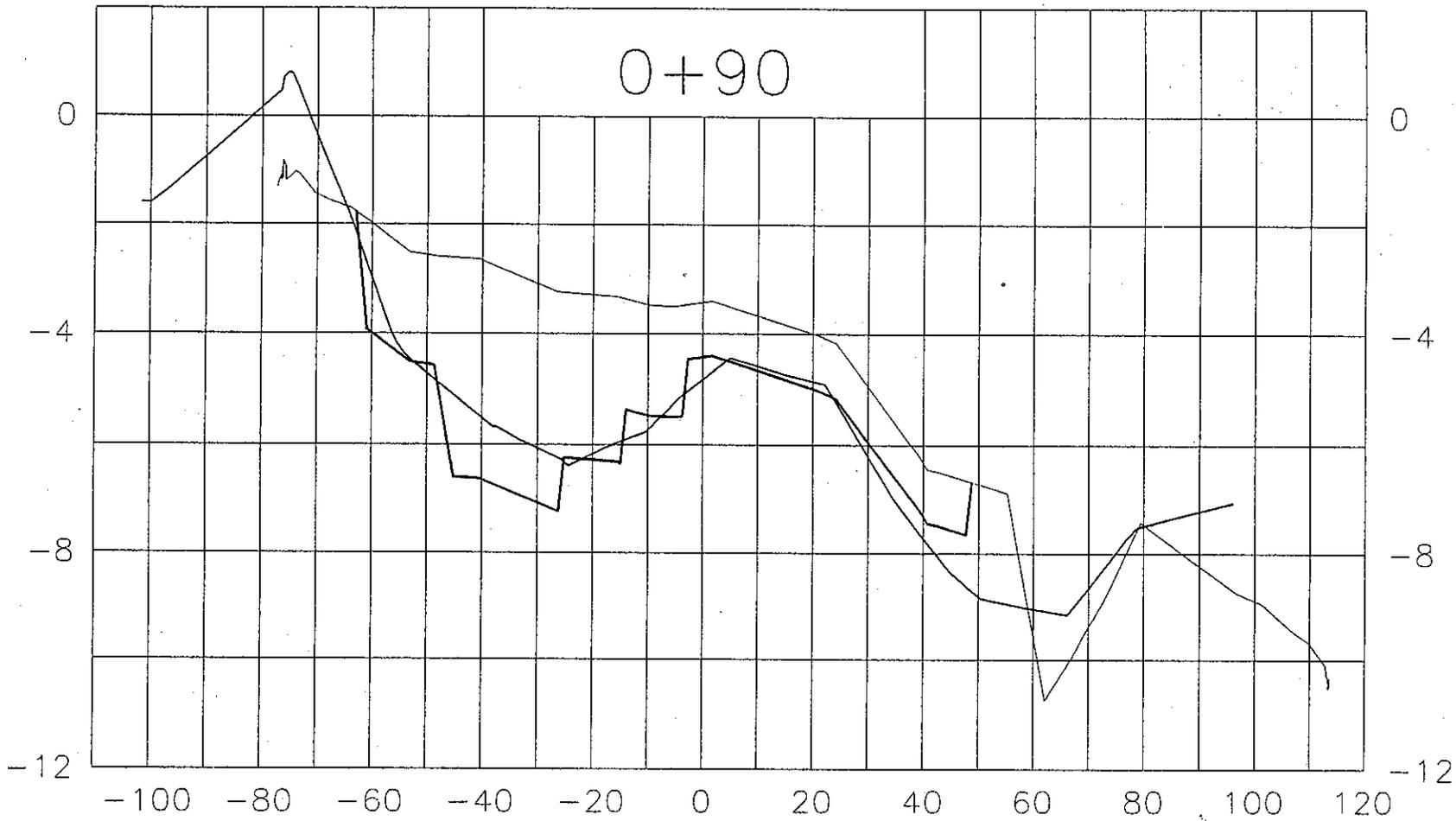
VERTICAL SCALE: 1" = 3'



NO.	DESCRIPTION	DATE

	Bourne Consulting Engineering <small>104 West Central Street Franklin, MA 01830 TEL (508) 520-8133 FAX (508) 520-8871</small>
	DRAWN: <u>RBH</u> CHECKED: <u>JWH</u> APPROVED: <u>JWH</u> DATE: <u>12/05/03</u>
REVISIONS	DRAWING NO. <u>23468-06-04</u> SHEET <u>4</u> OF <u>15</u>

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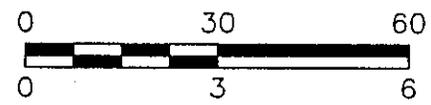
- BCE PRE-DREDGE
- - - - - BCE POST-DREDGE
- PROPOSED DREDGE

AREA C
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

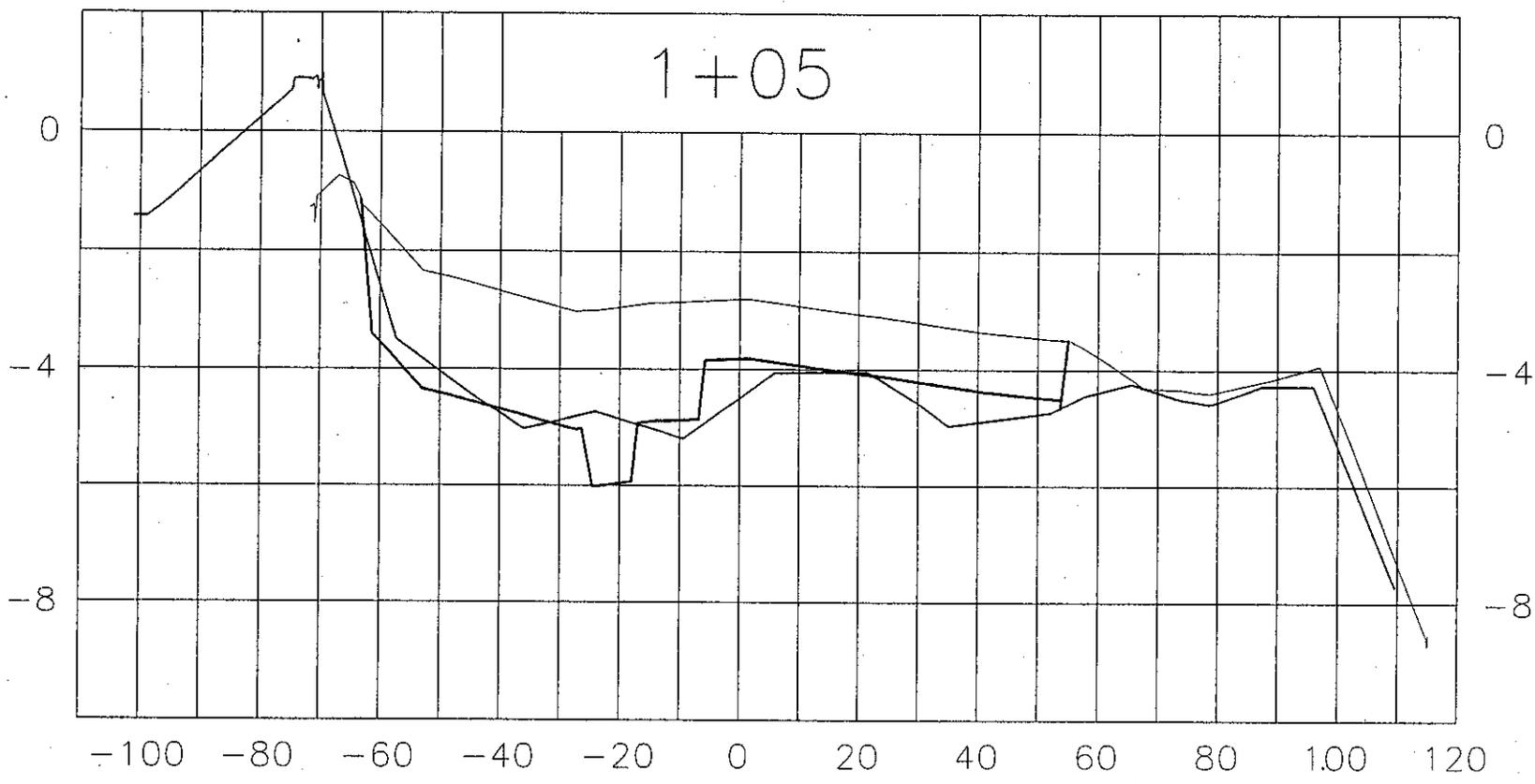
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VERTICAL SCALE: 1" = 3'



	Bourne Consulting Engineering <small>100 West Central Street Franklin, MA 01890 PH: (508) 630-6153 FAX: (508) 630-9871</small>
	DRAWN: RBH _____ CHECKED: JWH _____ APPROVED: JWH _____ DATE: 12/05/03 _____
	DRAWING NO. 23468-06-05 SHEET 5 OF 15
REVISIONS	

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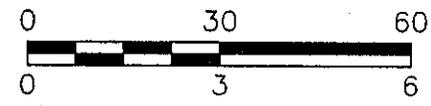
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- _____ PROPOSED DREDGE

AREA C
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

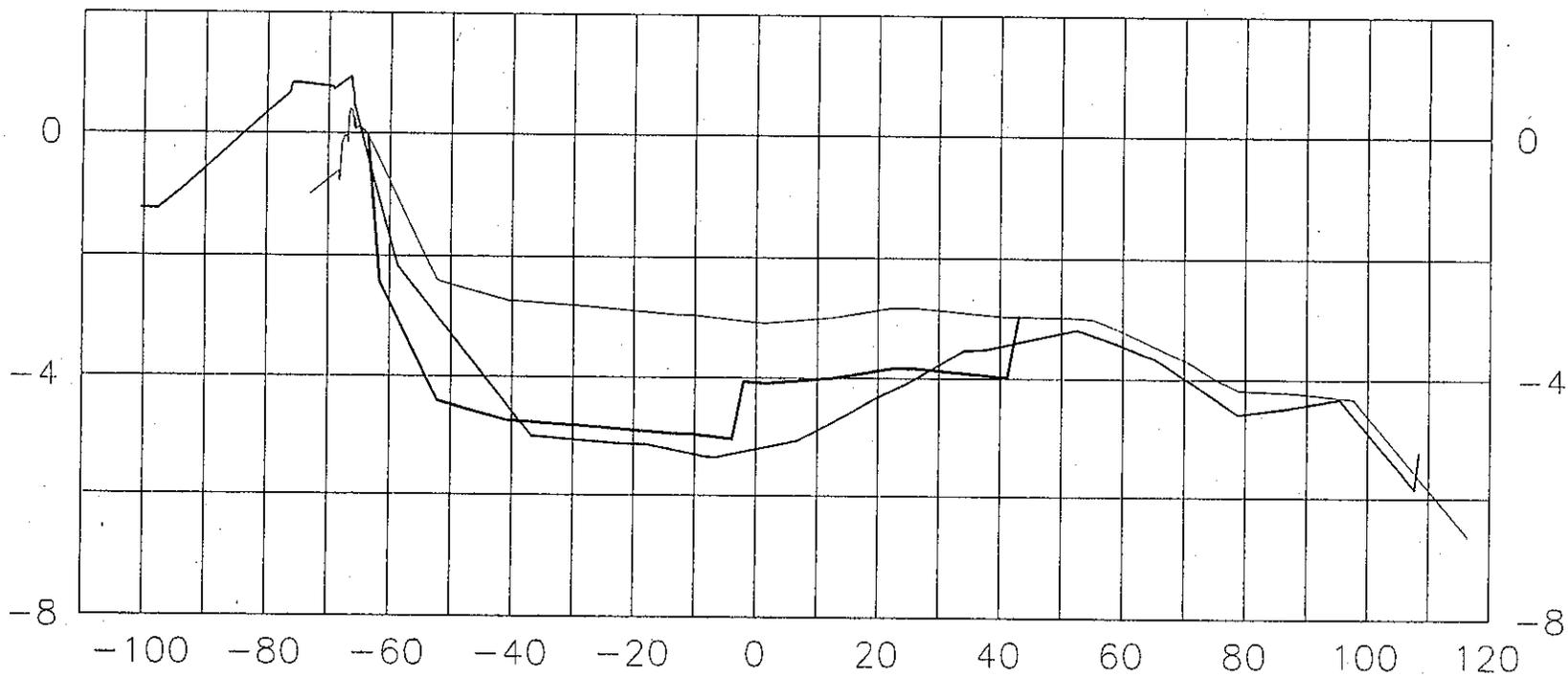
HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



BCE		Bourne Consulting Engineering			
		144 West Central Street Franklin, MA 01890 PH: (508) 568-8133 FAX: (508) 568-8071			
		DRAWN: RBH CHECKED: JWH APPROVED: JWH		DATE: 12/05/03	
REVISIONS				DRAWING NO. 23468-06-06	
				SHEET <u>6</u> OF <u>15</u>	

1+20



LEGEND:

-  BCE PRE-DREDGE
-  BCE POST-DREDGE
-  PROPOSED DREDGE

**AREA C
POST-DREDGE
CROSS-SECTIONS**

DECEMBER 5, 2003

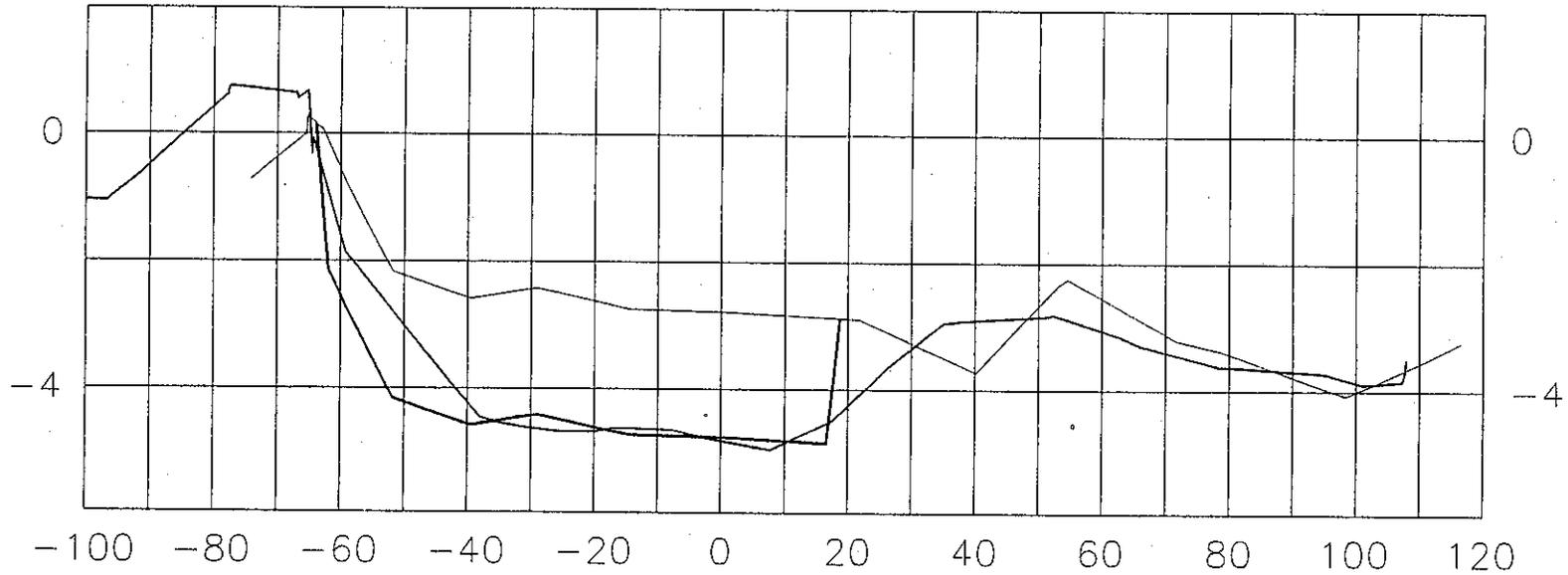
HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



REVISIONS	 Bourne Consulting Engineering	
	<small>164 West Central Street Providence, RI 02909 TEL (401) 839-6130 FAX (401) 839-6071</small>	
	DRAWN: <u>RBH</u>	DRAWING NO. <u>23468-06-07</u>
	CHECKED: <u>JWH</u>	SHEET <u>7</u> OF <u>15</u>
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1+35



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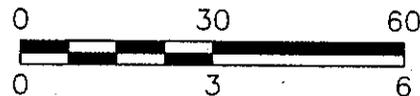
- _____ BCE PRE-DREDGE
- _____ BCE POST-DREDGE
- _____ PROPOSED DREDGE

**AREA C
POST-DREDGE
CROSS-SECTIONS**

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'

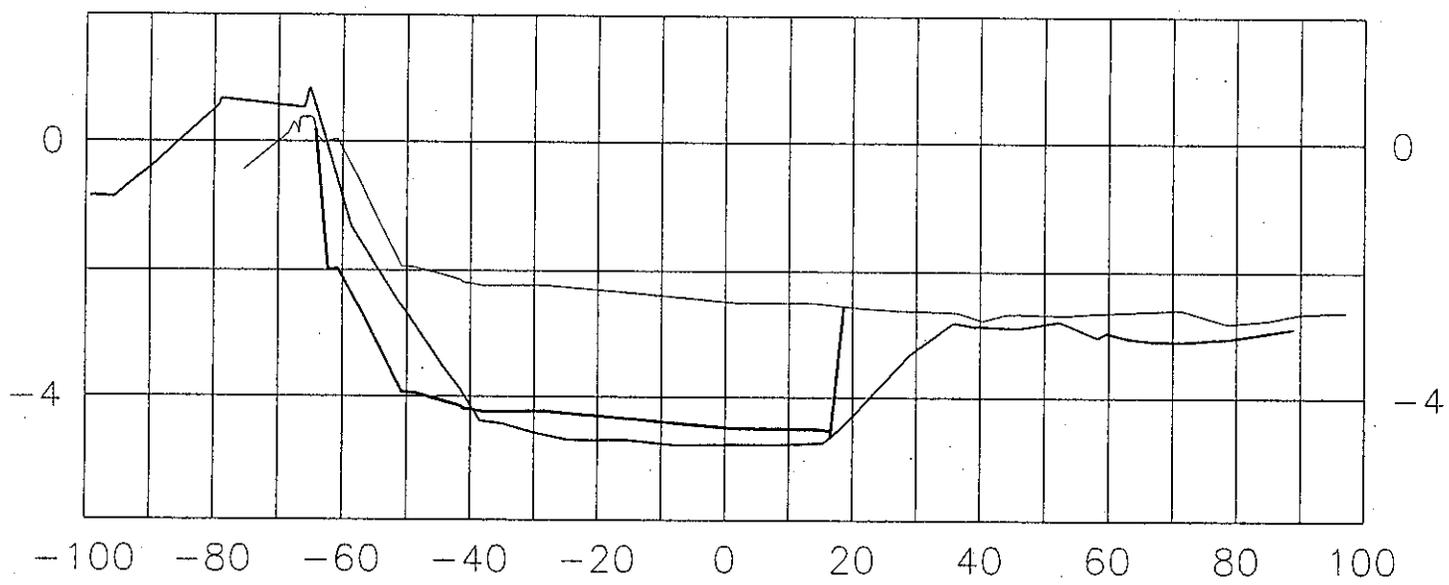
VERTICAL SCALE: 1" = 3'



REVISIONS		Bourne Consulting Engineering <small>104 West Central Street Freetown, MA 02030 TEL (508) 850-9133 FAX (508) 850-9971</small>
	DRAWN: RBH	DRAWING NO. 23468-06-08
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	APPROVED: JWH	
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1+50



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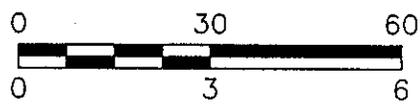
-  BCE PRE-DREDGE
-  BCE POST-DREDGE
-  PROPOSED DREDGE

AREA C
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'

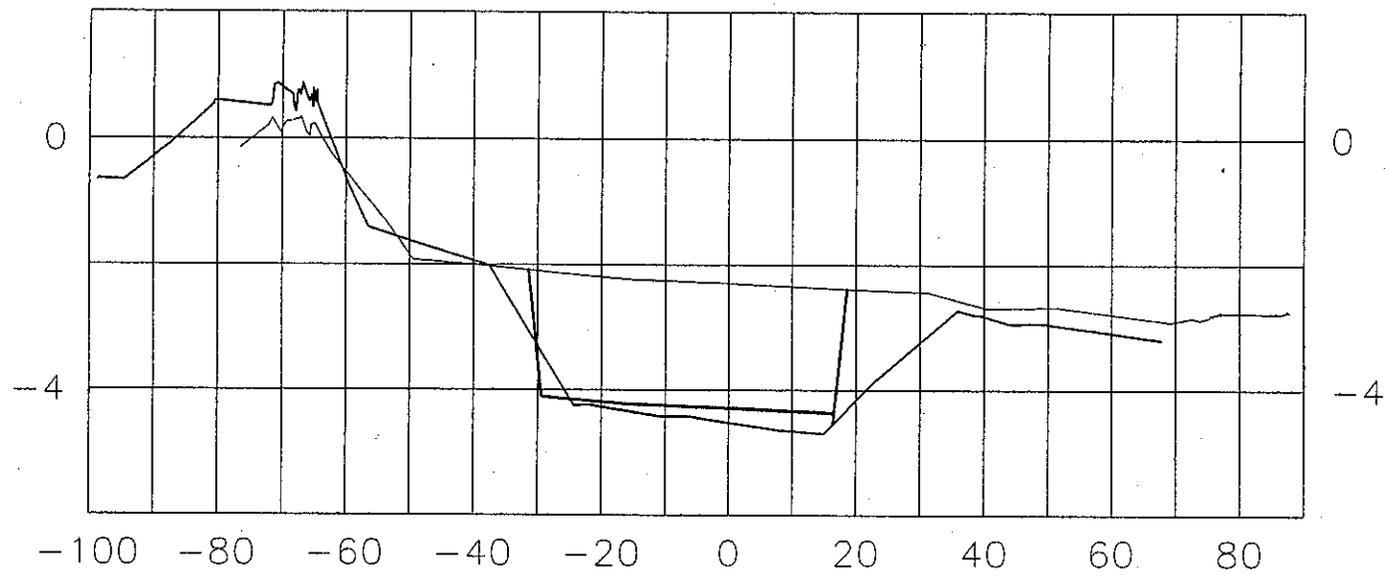
VERTICAL SCALE: 1" = 3'



		Bourne Consulting Engineering	
	184 West Central Street Providence, RI 02908 PH: (404) 630-8153 FAX: (404) 630-8971		
	DRAWN: RBH CHECKED: JWH APPROVED: JWH DATE: 12/05/03	DRAWING NO. 23468-06-09	
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1+65



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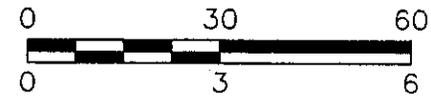
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AREA C
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

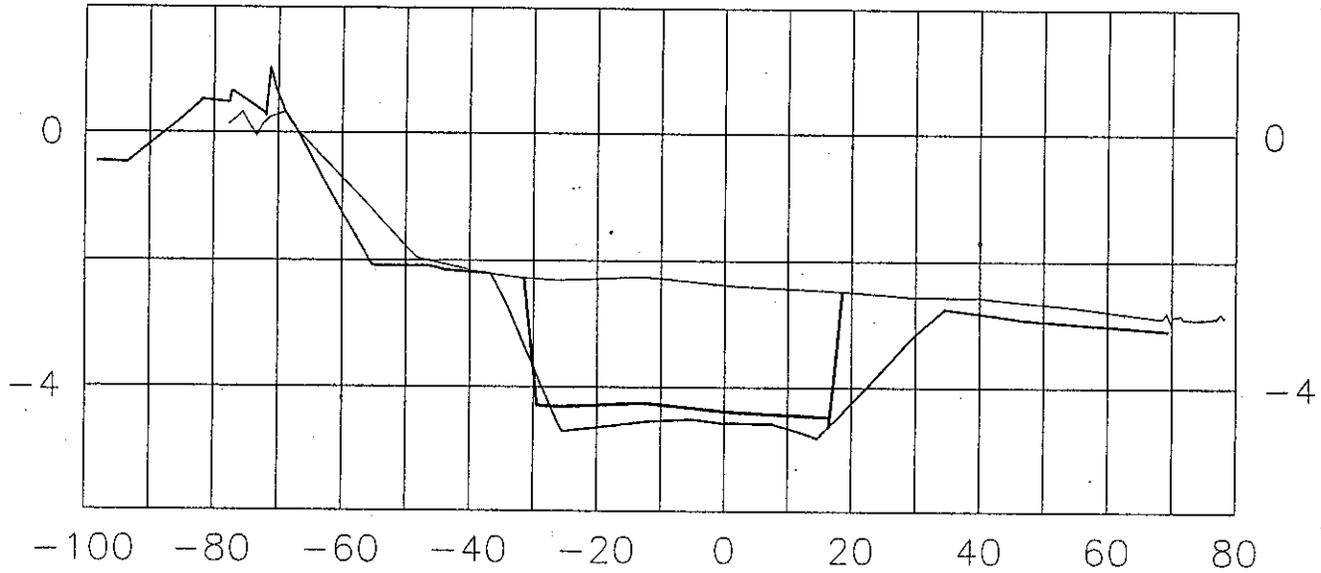
HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



	BCE	Bourne Consulting Engineering	
	184 West Central Street Franklin, MA 01890 PH: (508) 628-8153 FAX: (508) 628-9871		
	DRAWN: RBH	DRAWING NO. 23468-06-10	
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APPROVED: JWH	DATE: 12/05/03	SHEET 10 OF 15	
REVISIONS			

1+80



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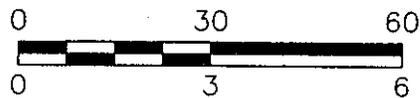
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- _____ BCE POST-DREDGE
- _____ PROPOSED DREDGE

**AREA C
POST-DREDGE
CROSS-SECTIONS**

DECEMBER 5, 2003

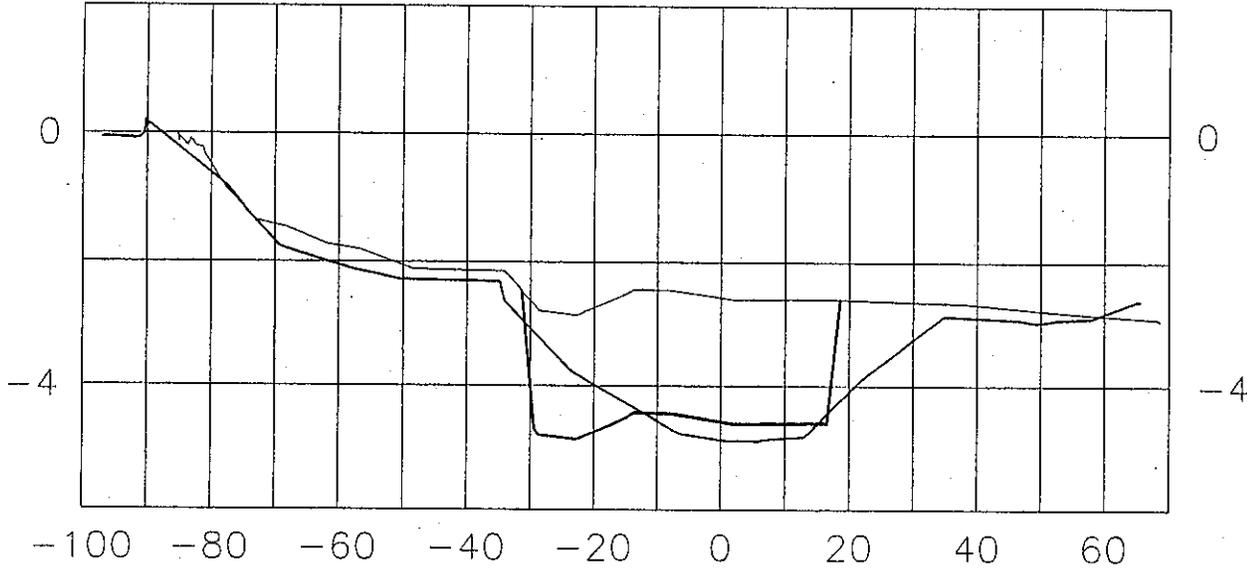
HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



REVISIONS		Bourne Consulting Engineering
	<small>104 West Central Street Franklin, MA 01830 PH. (408) 636-6153 FAX (408) 636-6871</small>	
	DRAWN: RBH	DRAWING NO. 23468-06-11
	CHECKED: JWH	SHEET 11 OF 15
	APPROVED: JWH	
	DATE: 12/05/03	

2+10



LEGEND:

- _____ BCE PRE-DREDGE
- _____ BCE POST-DREDGE
- _____ PROPOSED DREDGE

**AREA C
POST-DREDGE
CROSS-SECTIONS**

DECEMBER 5, 2003

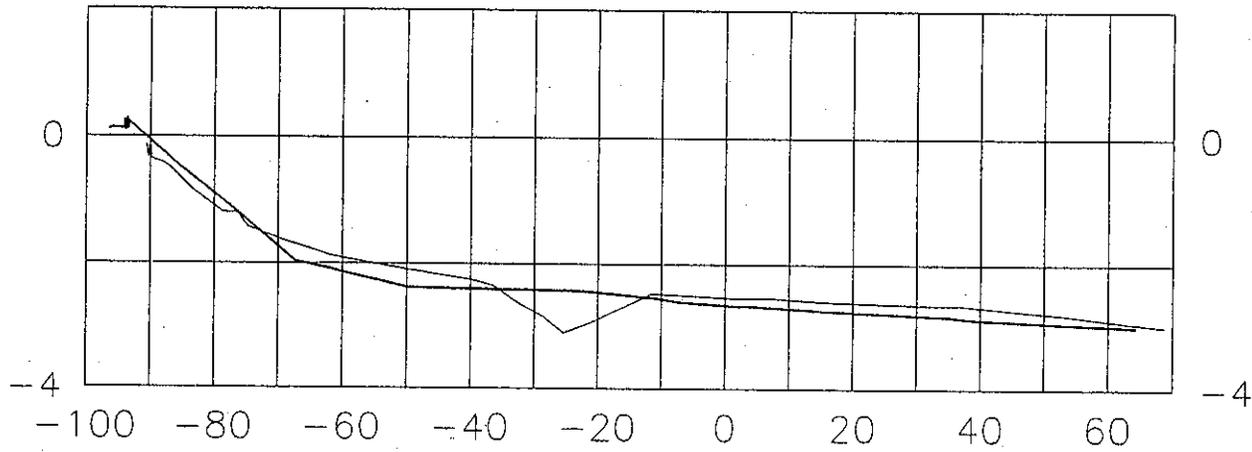
HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



REVISIONS	 Bourne Consulting Engineering <small>104 West Central Street Franklin, MA 01830 PH: (508) 538-8153 FAX: (508) 538-9071</small>	
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	CHECKED: JWH _____	
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		SHEET 13 OF 15

2+25



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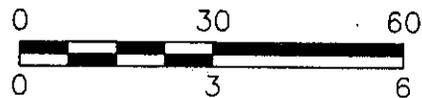
- BCE PRE-DREDGE
- BCE POST-DREDGE
- PROPOSED DREDGE

AREA C
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



REVISIONS	 Bourne Consulting Engineering <small>184 West Central Street Framingham, MA 01829 PH: (508) 826-8155 FAX: (508) 826-8071</small>
	DRAWN: RBH CHECKED: JWH APPROVED: JWH DATE: 12/05/03
	DRAWING NO. 23468-06-14
	SHEET 14 OF 15

NOTES:

1. CROSS SECTIONS BASED ON A PLAN BY BOURNE CONSULTING ENGINEERING ENTITLED "POST DREDGE AREA A, POST DREDGE AREA C, NEW BEDFORD SUPERFUND SITE MELVILLE SHIPYARD DREDGING USACE CONTRACT# DACW 33-94-D-002" DATED 10/17/03
2. ELEVATIONS ARE SHOWN IN FEET AND TENTHS BASED ON A MEAN LOWER LOW WATER DATUM. POSITIVE VALUES REPRESENT DEPTH ABOVE THAT SAME PLANE.
3. THE INFORMATION PRESENTED ON THIS CHART REPRESENTS THE RESULTS OF SURVEYS PERFORMED BY BOURNE CONSULTING ENGINEERING ON 8/12/03 AND 10/16/03 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO BCE.
4. HORIZONTAL AND VERTICAL CONTROL FOR THIS SURVEY WAS PROVIDED BY MAXYMILLIAN TECHNOLOGIES INC.
5. BENCH MARK IS A POINT SET IN THE NORTHEAST CORNER OF A CONCRETE PAD (DECON PAD) ELEV=8.14 NGVD
=9.58 MLLW
6. DREDGE AREAS TAKEN FROM A PLAN ENTITLED "NEW BEDFORD HARBOR SUPER FUND SITE (OU#1) NEW BEDFORD, MA. MELVILLE SHIPYARD DREDGING ENVIRONMENTAL DREDGING PLAN -1&2" PREPARED BY USACE MAY, 2003
7. DREDGE DEPTHS WITHIN THE DREDGE AREA WERE ADJUSTED BY -0.2 TO COMPENSATE FOR FLUFFING MEASUREMENTS TAKEN WITHIN THE DREDGE AREA ON NOVEMBER 18, 2003.
8. DREDGE VOLUME BASED ON PRE AND POST DREDGE HYDROGRAPHIC SURVEYS IS AS FOLLOWS:

<u>AREA DESIGNATION</u>	<u>DREDGE VOLUME</u>
DREDGING AREA C	1052 CUBIC YARDS

AREA C
POST-DREDGE
NOTES

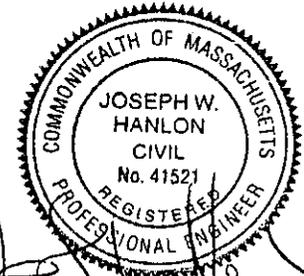
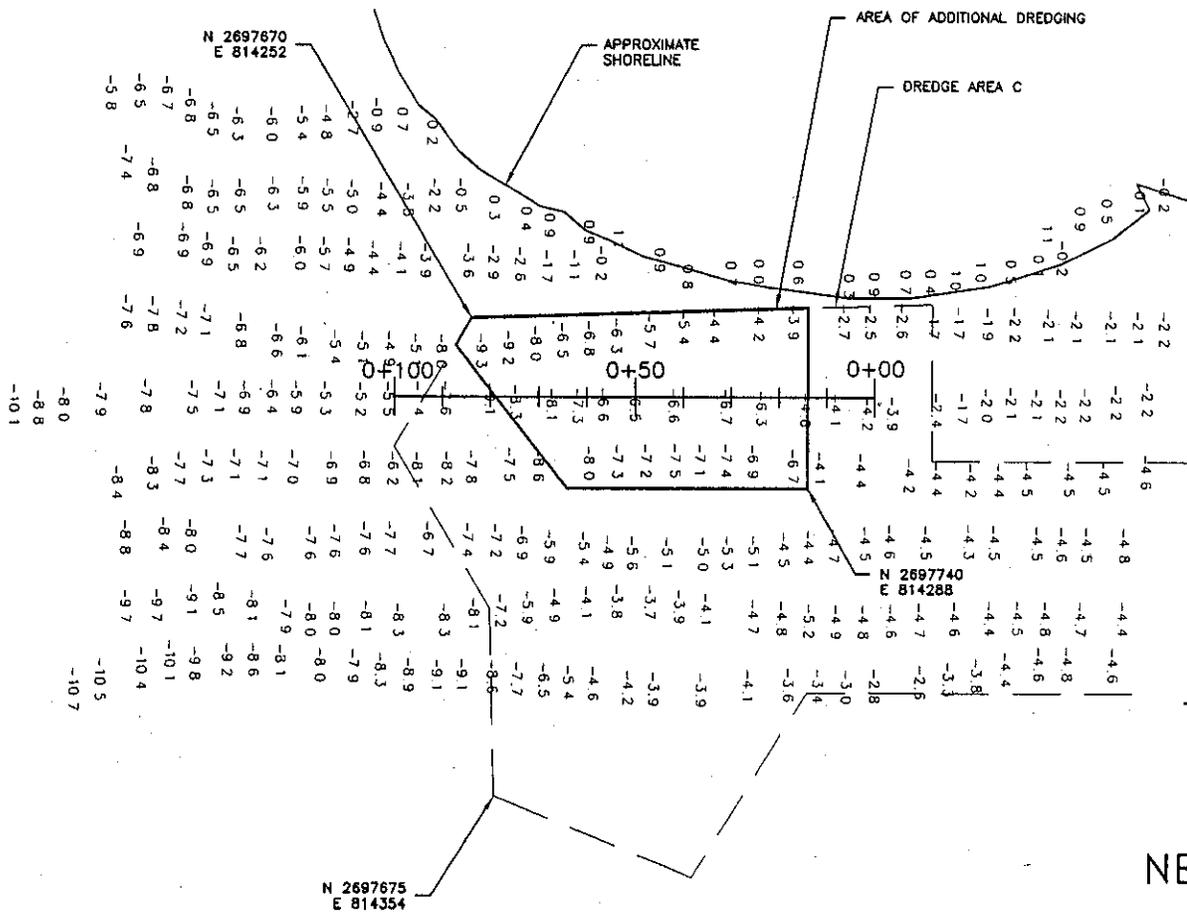
NEW BEDFORD SUPERFUND SITE
MELVILLE SHIPYARD DREDGING
USACE CONTRACT# DACW 33-94-D-002
NEW BEDFORD, MA
DECEMBER 5, 2003

REVISIONS		 <p>Bourne Consulting Engineering 104 West Central Street Franklin, MA 01830 PH. (508) 628-8120 FAX (508) 628-9071</p>	DRAWING NO. 23468-06-15	
				DRAWN: RBH
				CHECKED: JWH
				APPROVED: JWH
				DATE: 12/05/03
		SHEET 15 OF 15		

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Appendix C.4

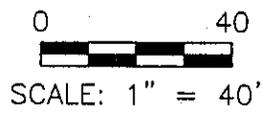
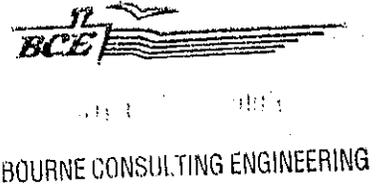
Area C Additional Dredging As-Built Cross Sections



Joseph W. Hanlon

AREA C - REDREDGE POST-DREDGE SITE PLAN

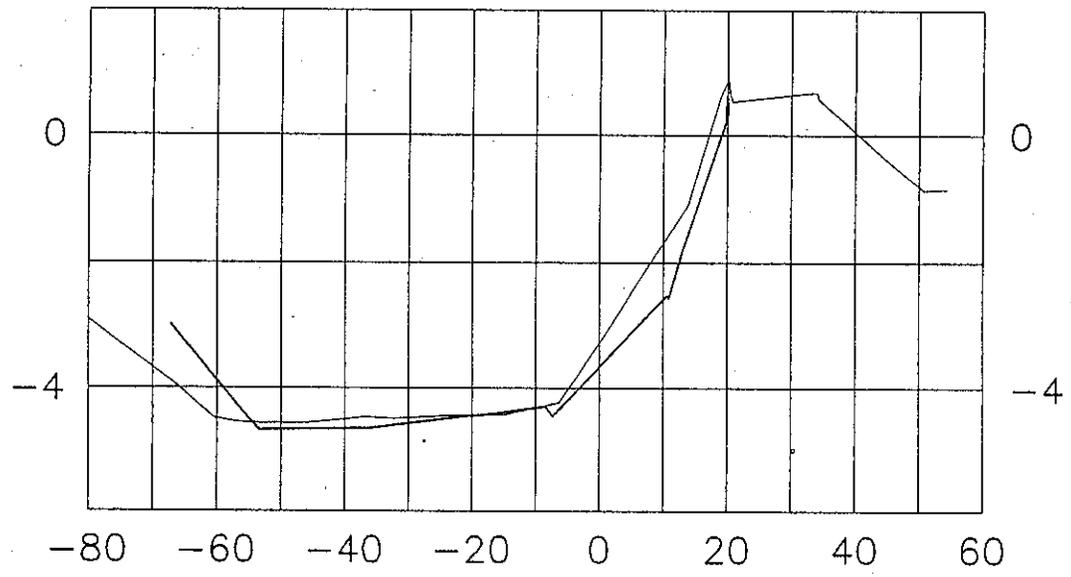
NEW BEDFORD SUPERFUND SITE
MELVILLE SHIPYARD DREDGING
USACE CONTRACT# DACW 33-94-D-002
NEW BEDFORD, MA
DECEMBER 5, 2003



REVISIONS		Bourne Consulting Engineering	
		144 Post Central Street Providence, RI 02903 PH: (404) 606-4100 FAX: (404) 630-0071	
		DRAWN: RBH CHECKED: JWH APPROVED: JWH DATE: 12/05/03	DRAWING NO. 23468-07-01
			SHEET <u>1</u> OF <u>11</u>

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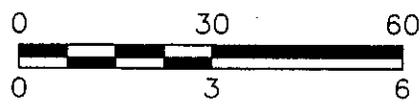
-  BCE PRE-DREDGE
-  BCE POST-DREDGE
-  PROPOSED DREDGE

AREA C - REDREDGE
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

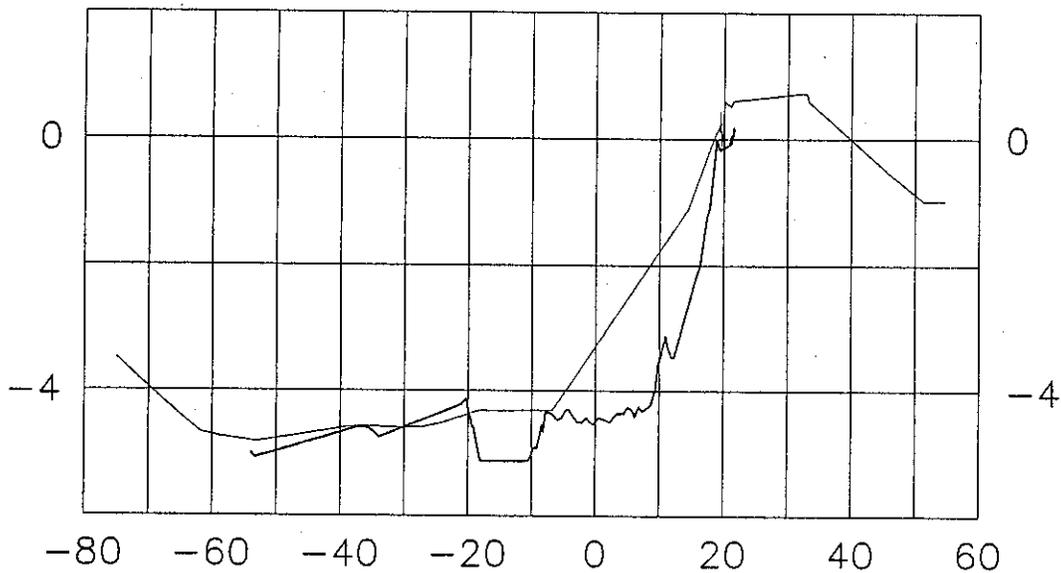
HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



REVISIONS		Bourne Consulting Engineering	
		184 West Central Street Franklin, MA 02038 TEL (508) 628-4133 FAX (508) 628-6871	
		DRAWN: RBH CHECKED: JWH APPROVED: JWH DATE: 12/05/03	DRAWING NO. 23468-07-02
			SHEET 2 OF 11

0+10



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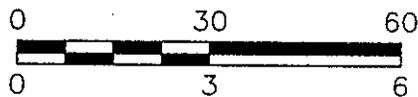
- BCE PRE-DREDGE
- BCE POST-DREDGE
- PROPOSED DREDGE

AREA C - REDREDGE
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'

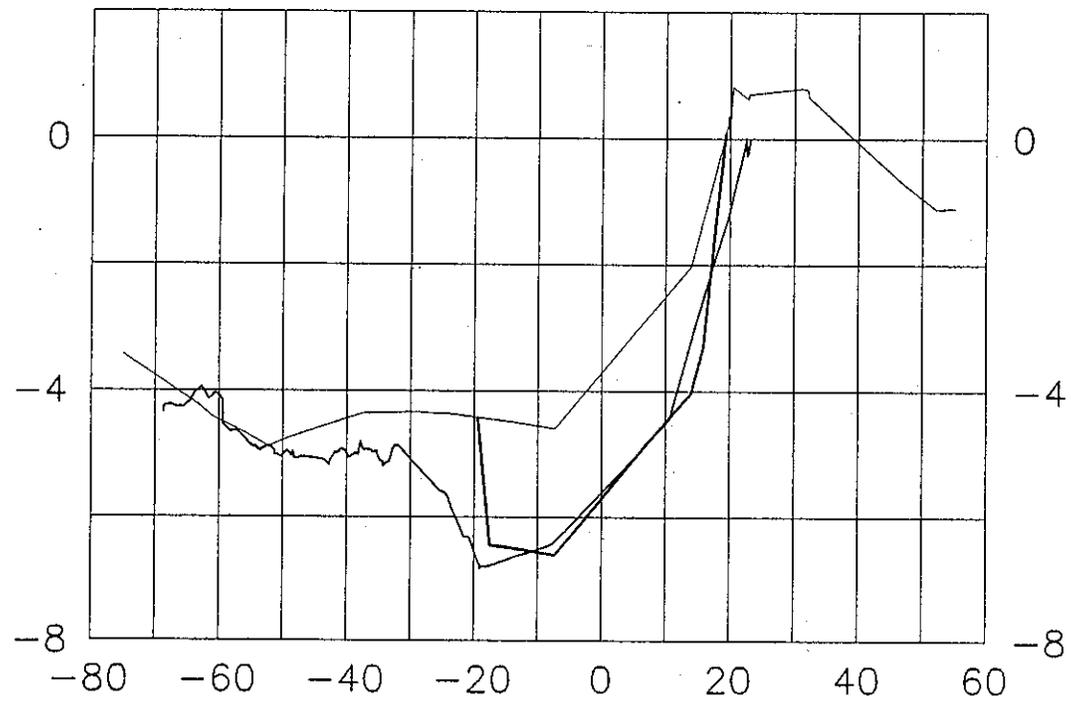
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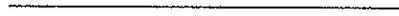
REVISIONS	 Bourne Consulting Engineering <small>144 West Central Street Franklin, MA 01830 PH: (603) 638-8133 FAX: (603) 638-8871</small>	
	DRAWN: RBH	DRAWING NO. 23468-07-03
	CHECKED: JWH	
	APPROVED: JWH	
	DATE: 12/05/03	
SHEET <u>3</u> OF <u>11</u>		

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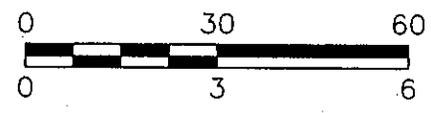
-  BCE PRE-DREDGE
-  BCE POST-DREDGE
-  PROPOSED DREDGE

AREA C - REDREDGE
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



NO.	DESCRIPTION

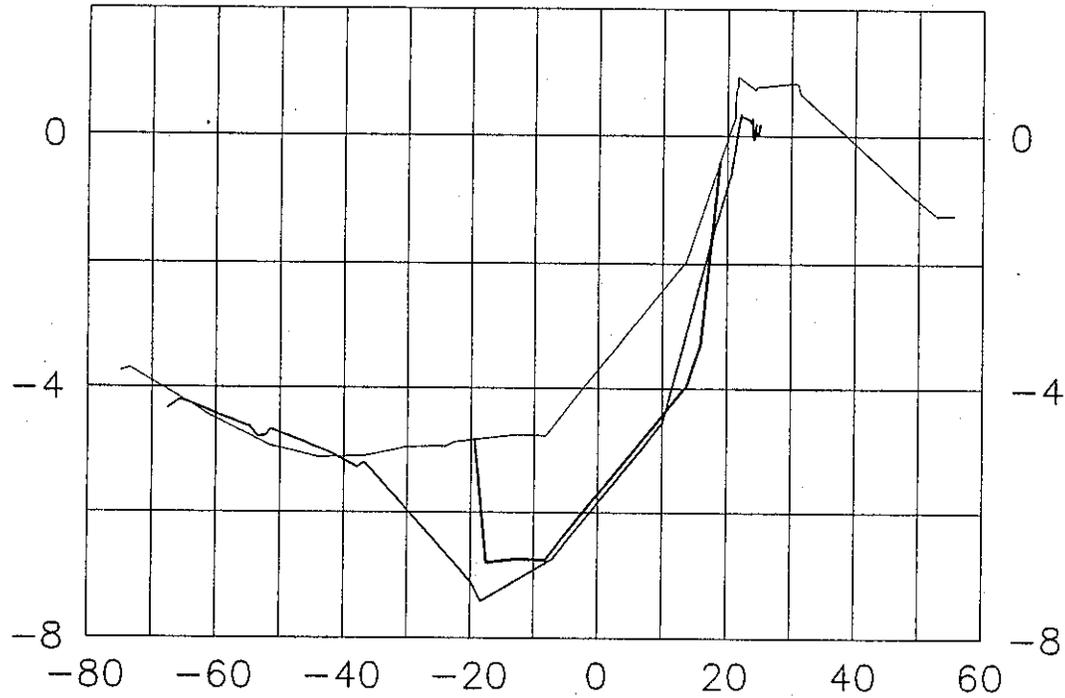
BCE  **Bourne Consulting Engineering**
104 Pool Central Street
 Franklin, MA 01906
 PH: (508) 528-1133 FAX: (508) 528-9977

DRAWN: RBH
 CHECKED: JWH
 APPROVED: JWH
 DATE: 12/05/03

DRAWING NO. 23468-07-04
 SHEET 4 OF 11

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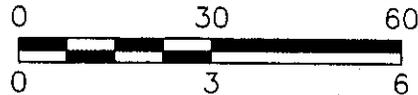
- _____ BCE PRE-DREDGE
- _____ BCE POST-DREDGE
- _____ PROPOSED DREDGE

AREA C - REDREDGE
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'

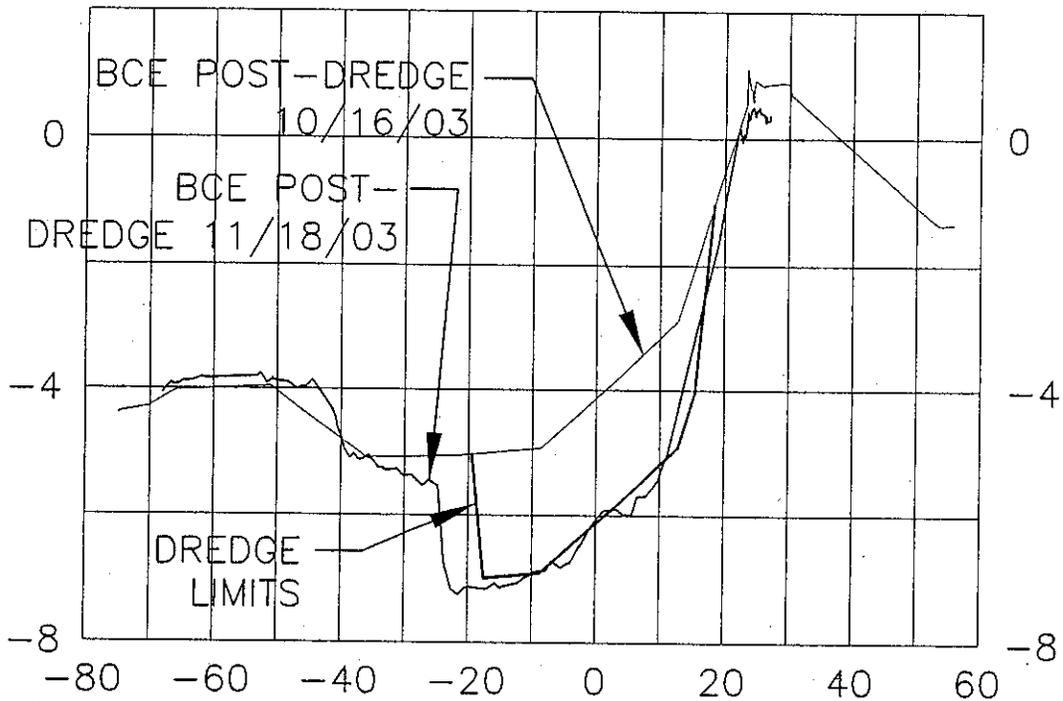
VERTICAL SCALE: 1" = 3'



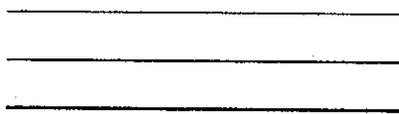
REVISIONS	 Bourne Consulting Engineering <small>104 West Central Street Franklin, MA 01008 PH. (508) 638-6133 FAX (508) 638-6671</small>	
	DRAWN: RBH CHECKED: JWH APPROVED: JWH DATE: 12/05/03	DRAWING NO. 23468-07-05
	SHEET 5 OF 11	
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LEGEND:



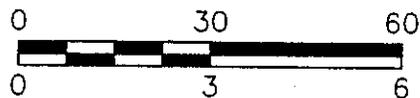
BCE PRE-DREDGE
 BCE POST-DREDGE
 PROPOSED DREDGE

**AREA C - REDREDGE
 POST-DREDGE
 CROSS-SECTIONS**

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



NO.	DESCRIPTION	DATE

BCE Bourne Consulting Engineering
 144 West Central Street
 Franklin, MA 01902
 TEL (508) 639-8133 FAX (508) 639-9771

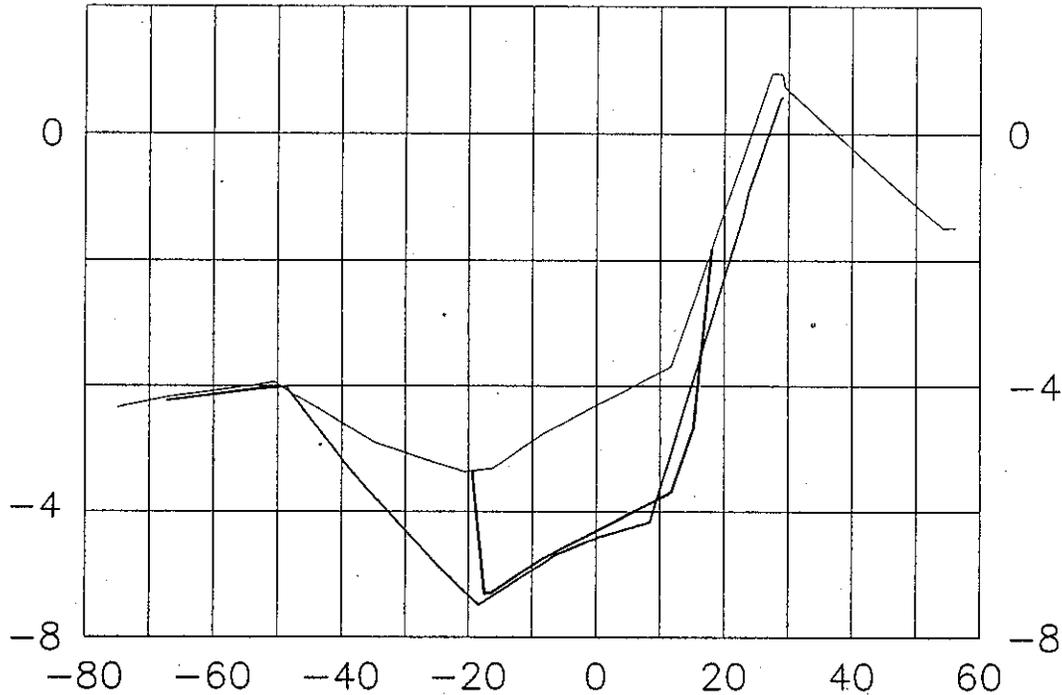
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 CHECKED: JWH
 APPROVED: JWH
 DATE: 12/05/03

DRAWING NO. 23468-07-06

SHEET 6 OF 11

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0+50



LEGEND:

-  BCE PRE-DREDGE 10/16/03
-  BCE POST-DREDGE 11/18/03
-  PROPOSED DREDGE

**AREA C REDREDGE
POST-DREDGE
CROSS-SECTIONS**

DECEMBER 5, 2003

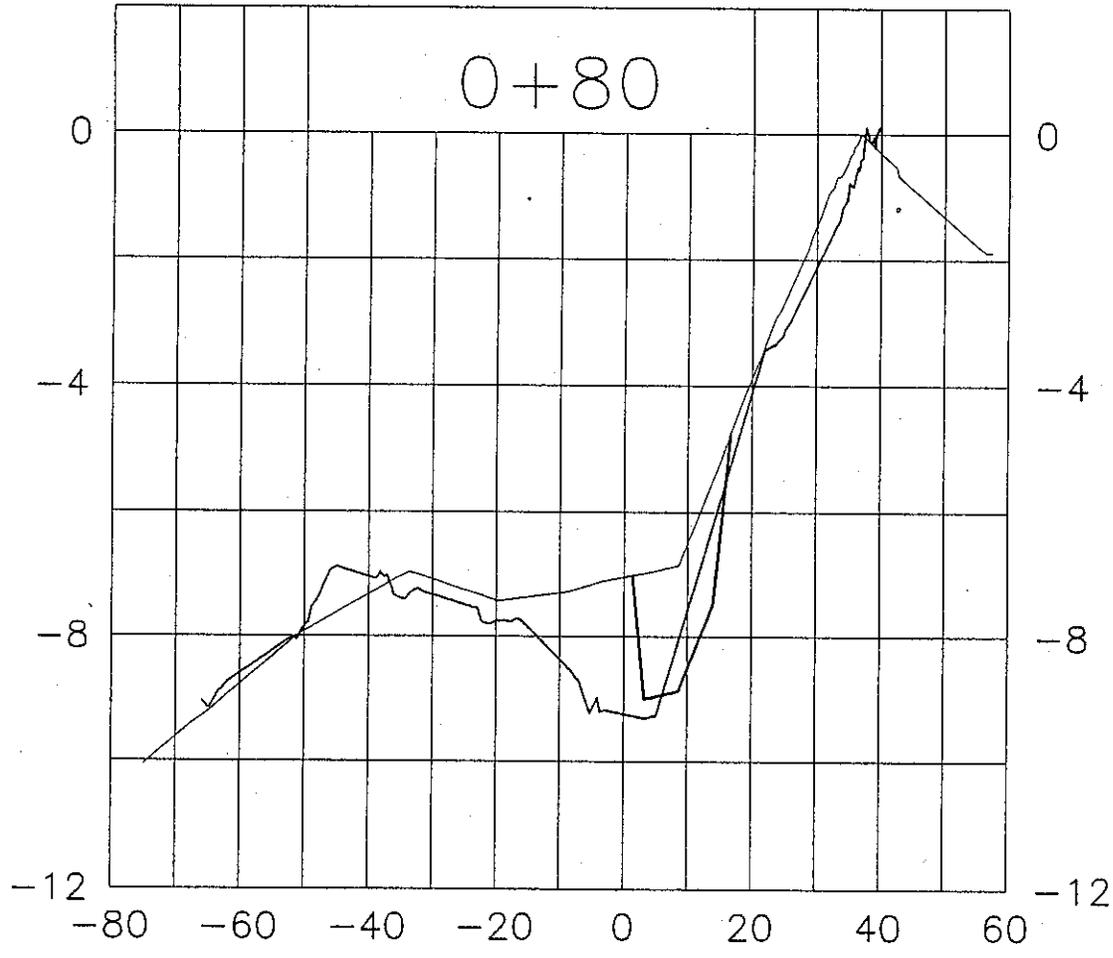
HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'

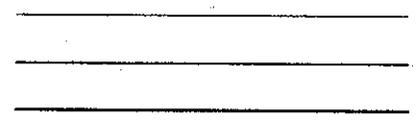


		Bourne Consulting Engineering			
		100 West Central Street Franklin, MA 01830 PH: (508) 838-8133 FAX: (508) 838-9973			
		DRAWN: RBH CHECKED: JWH APPROVED: JWH DATE: 12/05/03		DRAWING NO. 23468-07-07	
REVISIONS		SHEET <u>7</u> OF <u>11</u>			

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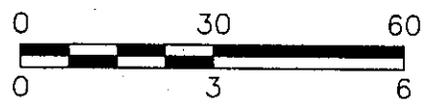
BCE PRE-DREDGE 10/16/03
 BCE POST-DREDGE 11/18/03
 PROPOSED DREDGE

AREA C - REDREDGE
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



NO.	DESCRIPTION	DATE

BCE *Bourne Consulting Engineering*
 104 West Central Street
 Franklin, MA 01903
 PH. (508) 520-8130 FAX (508) 520-9077

DRAWN: RBH
 CHECKED: JWH
 APPROVED: JWH
 DATE: 12/05/03

DRAWING NO. 23468-07-10

SHEET 10 OF 11

NOTES:

1. CROSS SECTIONS BASED ON A PLAN BY BOURNE CONSULTING ENGINEERING ENTITLED "POST DREDGE ADDITIONAL AREA C, NEW BEDFORD SUPERFUND SITE MELVILLE SHIPYARD DREDGING USACE CONTRACT# DACW 33-94-D-002" DATED 11/26/03
2. ELEVATIONS ARE SHOWN IN FEET AND TENTHS BASED ON A MEAN LOWER LOW WATER DATUM. POSITIVE VALUES REPRESENT DEPTH ABOVE THAT SAME PLANE.
3. THE INFORMATION PRESENTED ON THIS CHART REPRESENTS THE RESULTS OF SURVEYS PERFORMED BY BOURNE CONSULTING ENGINEERING ON 8/12/03 AND 11/18/03 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO BCE.
4. HORIZONTAL AND VERTICAL CONTROL FOR THIS SURVEY WAS PROVIDED BY MAXYMILLIAN TECHNOLOGIES INC.
5. BENCH MARK IS A POINT SET IN THE NORTHEAST CORNER OF A CONCRETE PAD (DECON PAD) ELEV=8.14 NGVD
=9.58 MLLW
6. DREDGE AREAS TAKEN FROM A PLAN ENTITLED "NEW BEDFORD HARBOR SUPER FUND SITE (OU#1) NEW BEDFORD, MA. MELVILLE SHIPYARD DREDGING ENVIRONMENTAL DREDGING PLAN -1&2" PREPARED BY USACE MAY, 2003
7. DREDGE DEPTHS WITHIN THE DREDGE AREA WERE ADJUSTED BY -0.2 TO COMPENSATE FOR FLUFFING MEASUREMENTS TAKEN WITHIN THE DREDGE AREA ON NOVEMBER 18, 2003.
8. DREDGE VOLUME BASED ON PRE AND POST DREDGE HYDROGRAPHIC SURVEYS IS AS FOLLOWS:

**AREA C - REDREDGE
POST-DREDGE
NOTES**

<u>AREA DESIGNATION</u>	<u>DREDGE VOLUME</u>
DREDGING ADDITIONAL AREA C	255 CUBIC YARDS

NEW BEDFORD SUPERFUND SITE
MELVILLE SHIPYARD DREDGING
USACE CONTRACT# DACW 33-94-D-002
NEW BEDFORD, MA
DECEMBER 5, 2003

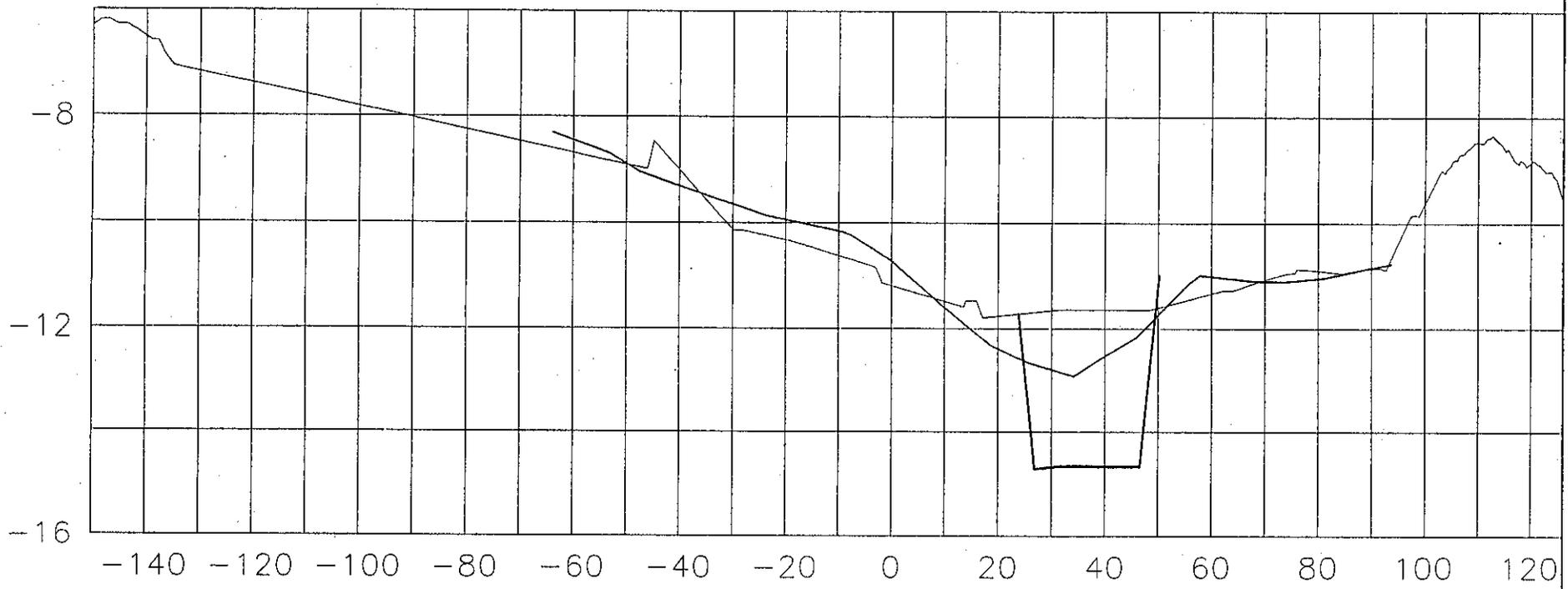
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REVISIONS	 Bourne Consulting Engineering <small>184 West Central Street Providence, RI 02908 TEL (404) 528-8133 FAX (404) 528-8071</small>	DRAWING NO. 23468-07-11	
	DRAWN: <u>RBH</u> CHECKED: <u>JWH</u> APPROVED: <u>JWH</u> DATE: <u>12/05/03</u>	SHEET 11 OF 11	

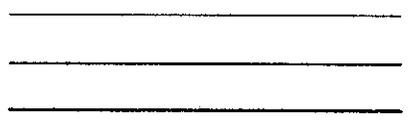
Appendix C.5
Area D As-Built Cross Sections

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0+60



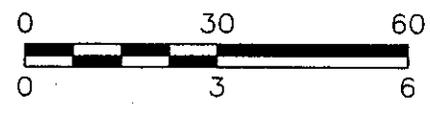
LEGEND:



_____ BCE PRE-DREDGE
 _____ BCE POST-DREDGE
 _____ PROPOSED DREDGE

AREA D
POST-DREDGE
CROSS-SECTIONS
 DECEMBER 5, 2003

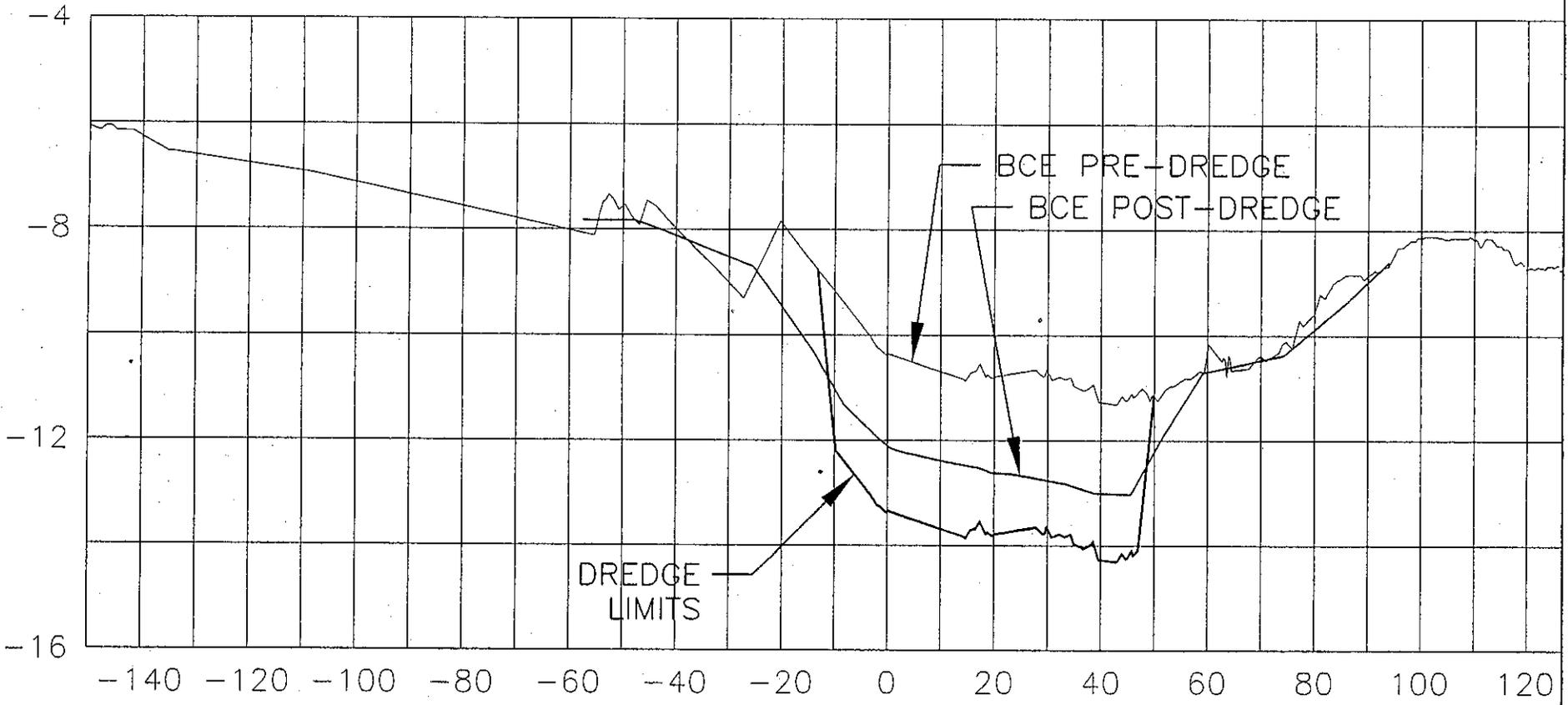
HORIZONTAL SCALE: 1" = 30'
 VERTICAL SCALE: 1" = 3'



REVISIONS	 Bourne Consulting Engineering <small>184 First Central Street Framingham, MA 01832 TEL (508) 638-4133 FAX (508) 638-6471</small>	DRAWING NO. 23468-08-02 SHEET 2 OF 18
	DRAWN: <u>RBH</u> CHECKED: <u>JWH</u> APPROVED: <u>JWH</u> DATE: <u>12/05/03</u>	

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0+75



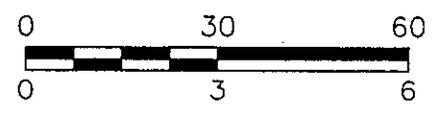
LEGEND:

-  BCE PRE-DREDGE
-  BCE POST-DREDGE
-  PROPOSED DREDGE

AREA D
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'
 VERTICAL SCALE: 1" = 3'



NO.	DESCRIPTION	DATE

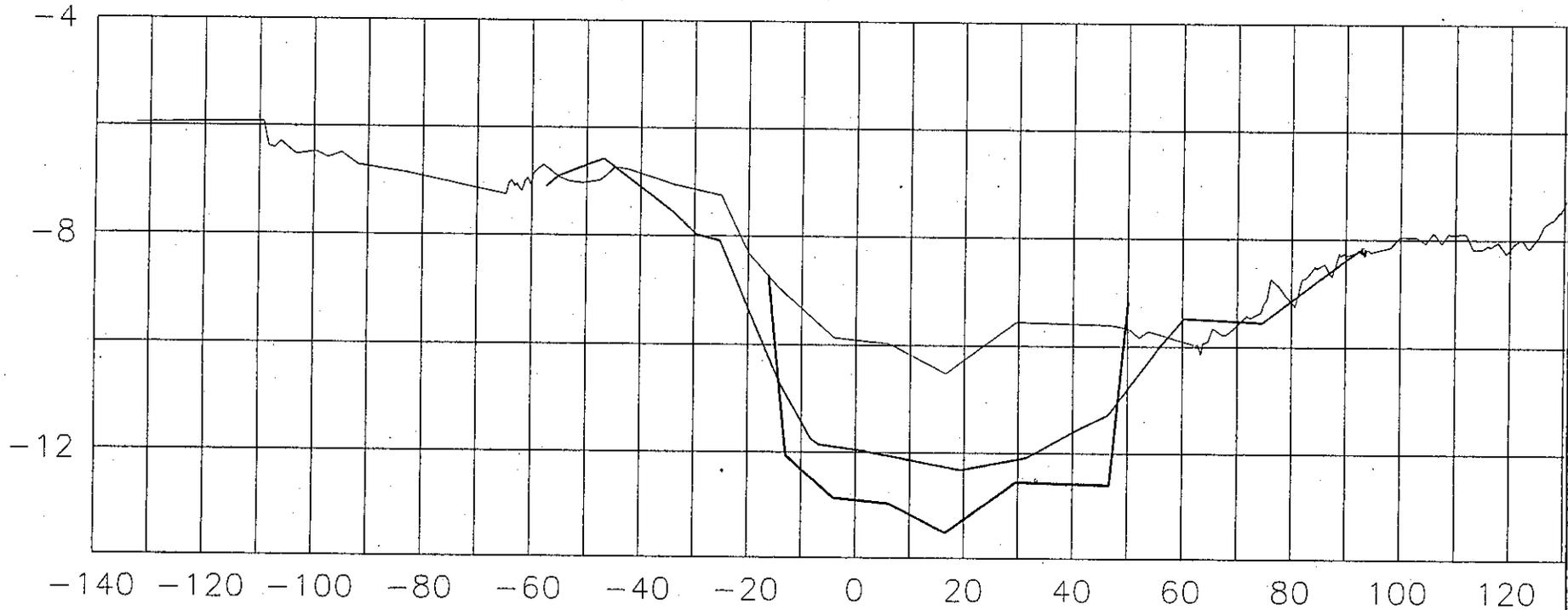
BCE *Bourne Consulting Engineering*
 114 West Central Street
 Franklin, MA 01903
 PH. (508) 636-4133 FAX (508) 636-9971

DRAWN: RBH
 CHECKED: JWH
 APPROVED: JWH
 DATE: 12/05/03

DRAWING NO. 23468-08-03
 SHEET 3 OF 18

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0+90



LEGEND:

-  BCE PRE-DREDGE
-  BCE POST-DREDGE
-  PROPOSED DREDGE

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



AREA D
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

NO.	DESCRIPTION	DATE

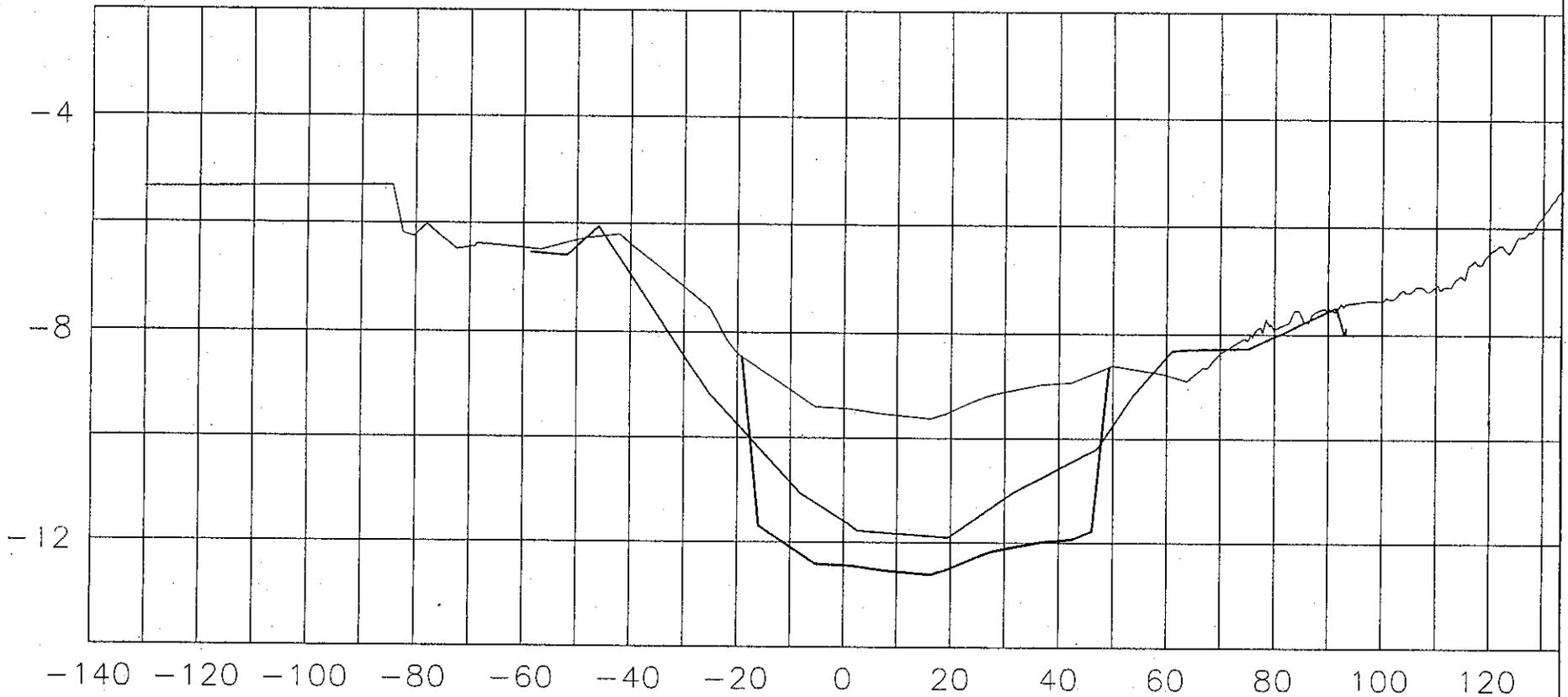
BCE *Bourne Consulting Engineering*
 104 West Central Street
 Franklin, MA 02043
 PH. (508) 526-8125 FAX (508) 526-8671

DRAWN: RBH
 CHECKED: JWH
 APPROVED: JWH
 DATE: 12/05/03

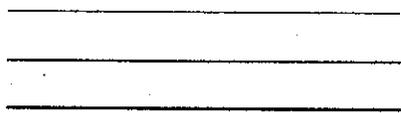
DRAWING NO. 23468-08-04
 SHEET 4 OF 18

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1+05



LEGEND:



_____ BCE PRE-DREDGE
 _____ BCE POST-DREDGE
 _____ PROPOSED DREDGE

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



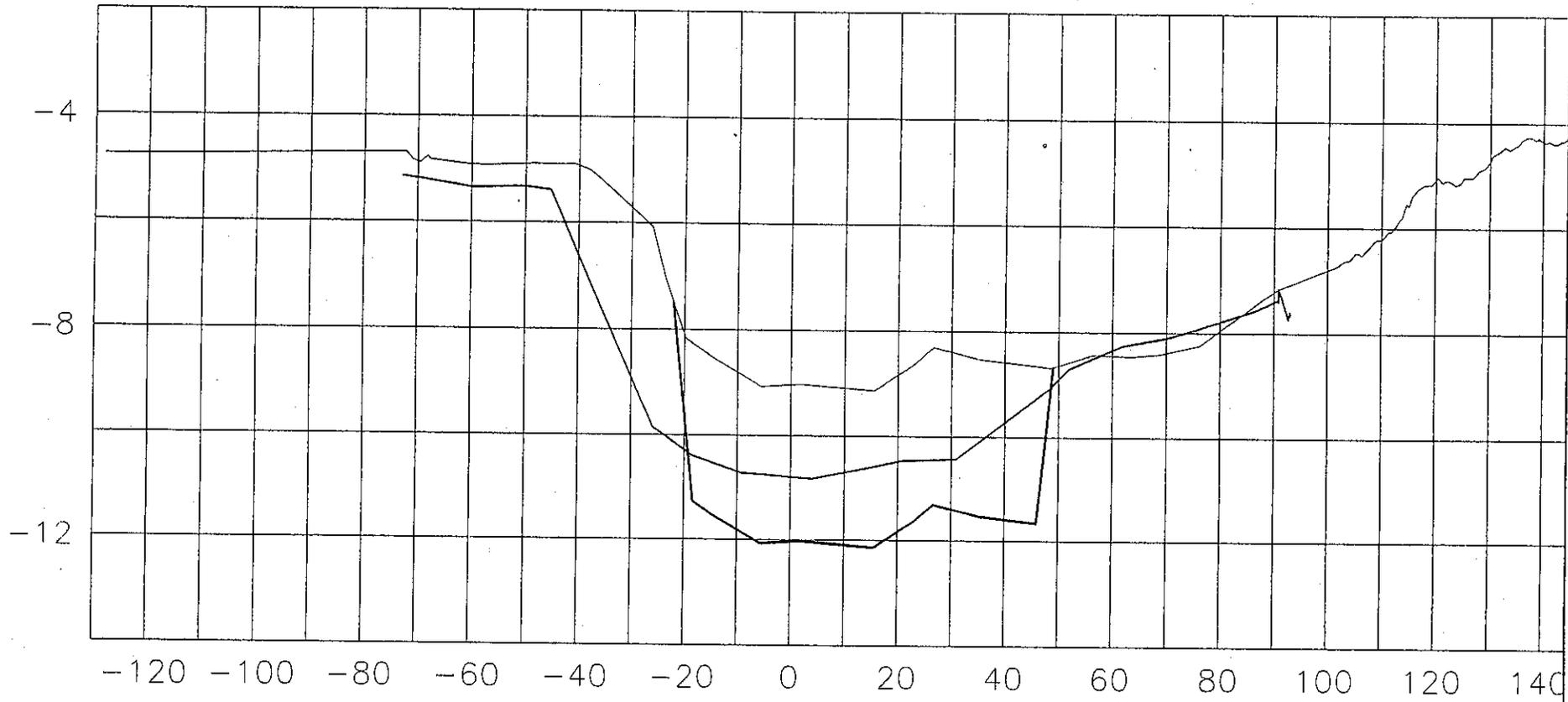
AREA D
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

REVISIONS 	 Bourne Consulting Engineering <small>144 Pond Control Street Franklin, MA 02045 PH. (603) 526-9133 FAX (603) 526-9873</small>	DRAWING NO. 23468-08-05
	DRAWN: RBH CHECKED: JWH APPROVED: JWH DATE: 12/05/03	SHEET 5 OF 18
	DRAWING NO. 23468-08-05	
	SHEET 5 OF 18	

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1+20



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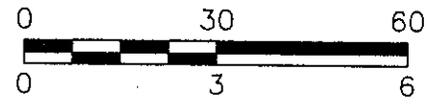
- BCE PRE-DREDGE
- BCE POST-DREDGE
- PROPOSED DREDGE

AREA D
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



NO.	REVISIONS

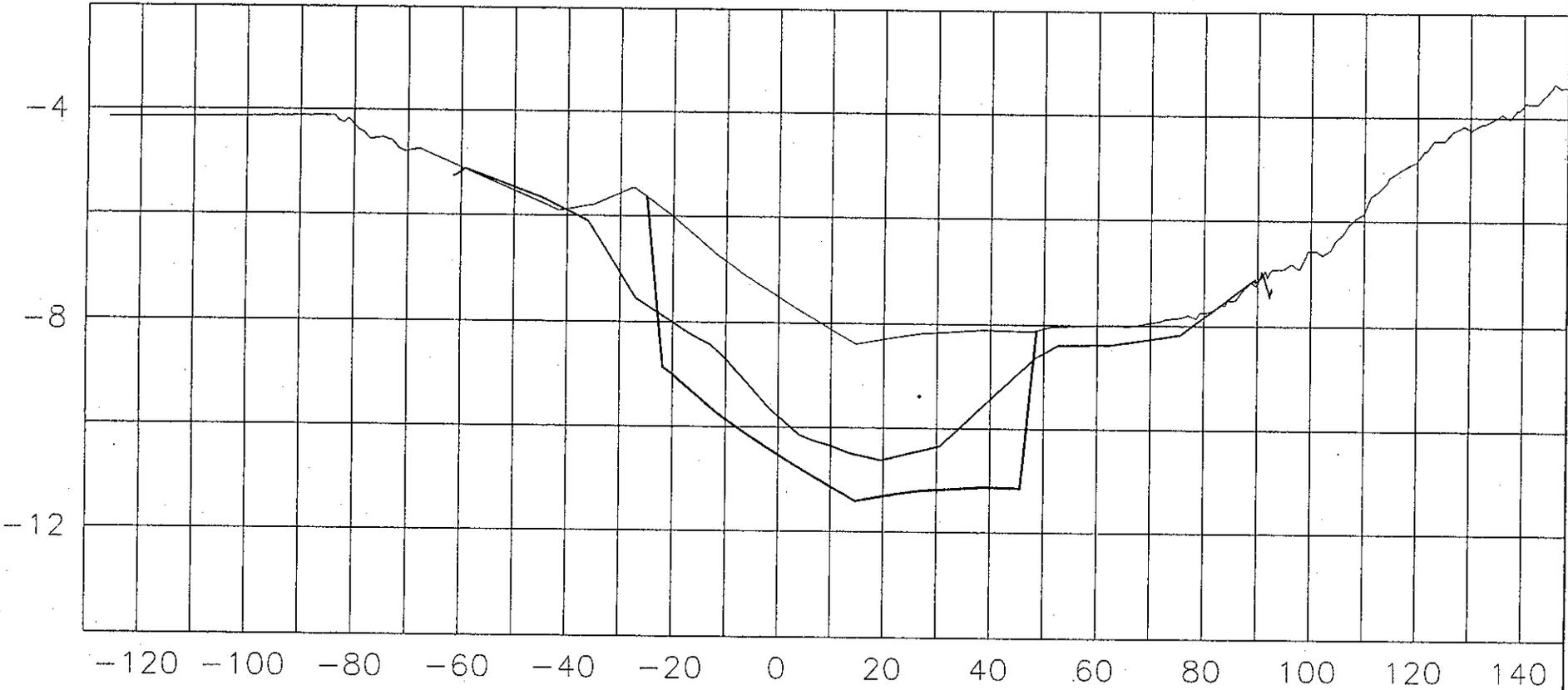
BCE *Bourne Consulting Engineering*
 104 West Central Street
 Franklin, MA 02039
 PH: (508) 528-8133 FAX: (508) 528-8473

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 CHECKED: JWH
 APPROVED: JWH
 DATE: 12/05/03

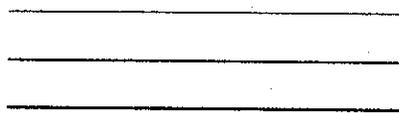
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1+35



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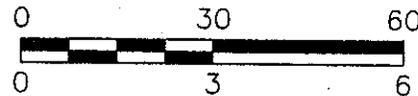
_____ BCE PRE-DREDGE
 _____ BCE POST-DREDGE
 _____ PROPOSED DREDGE

AREA D
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



NO.	DESCRIPTION	DATE


Bourne Consulting Engineering
144 West Central Street
 Franklin, MA 01903
 PH: (508) 528-6133 FAX: (508) 528-0671

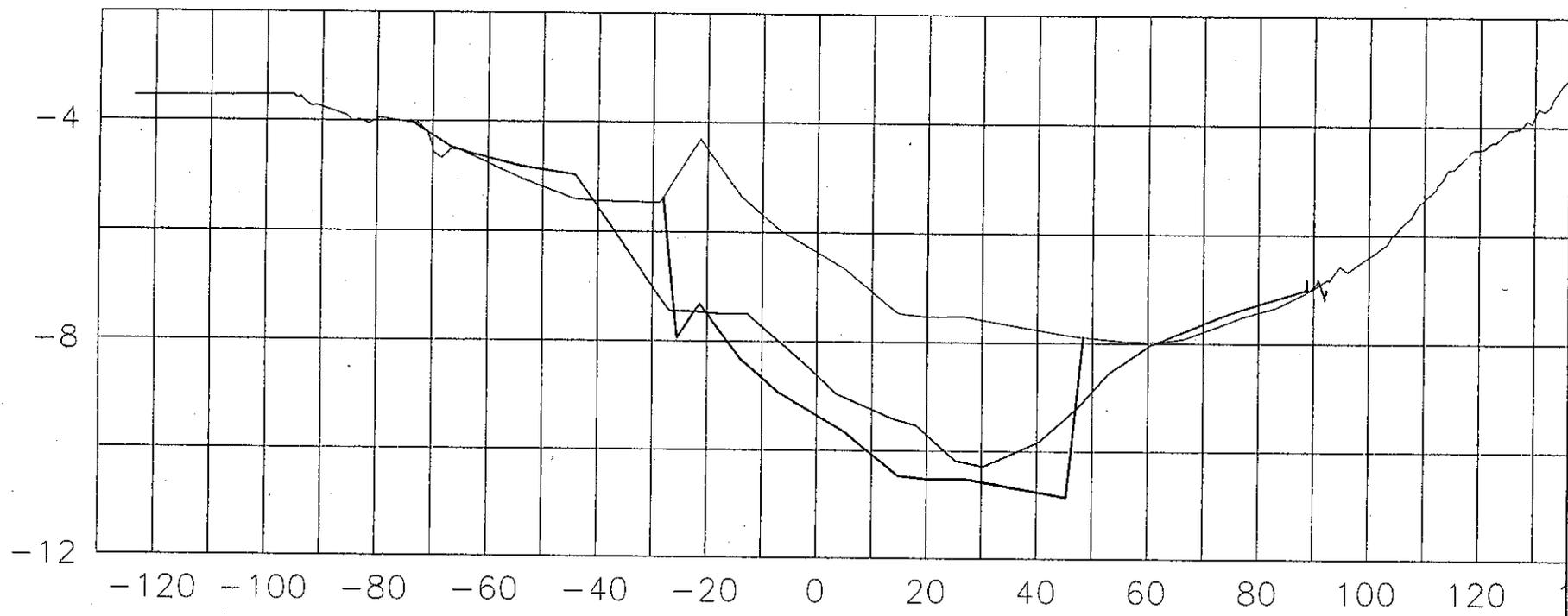
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 CHECKED: JWH
 APPROVED: JWH
 DATE: 12/05/03

DRAWING NO. 23468-08-07

SHEET 7 OF 18

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1+50



LEGEND:

-  BCE PRE-DREDGE
-  BCE POST-DREDGE
-  PROPOSED DREDGE

AREA D
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



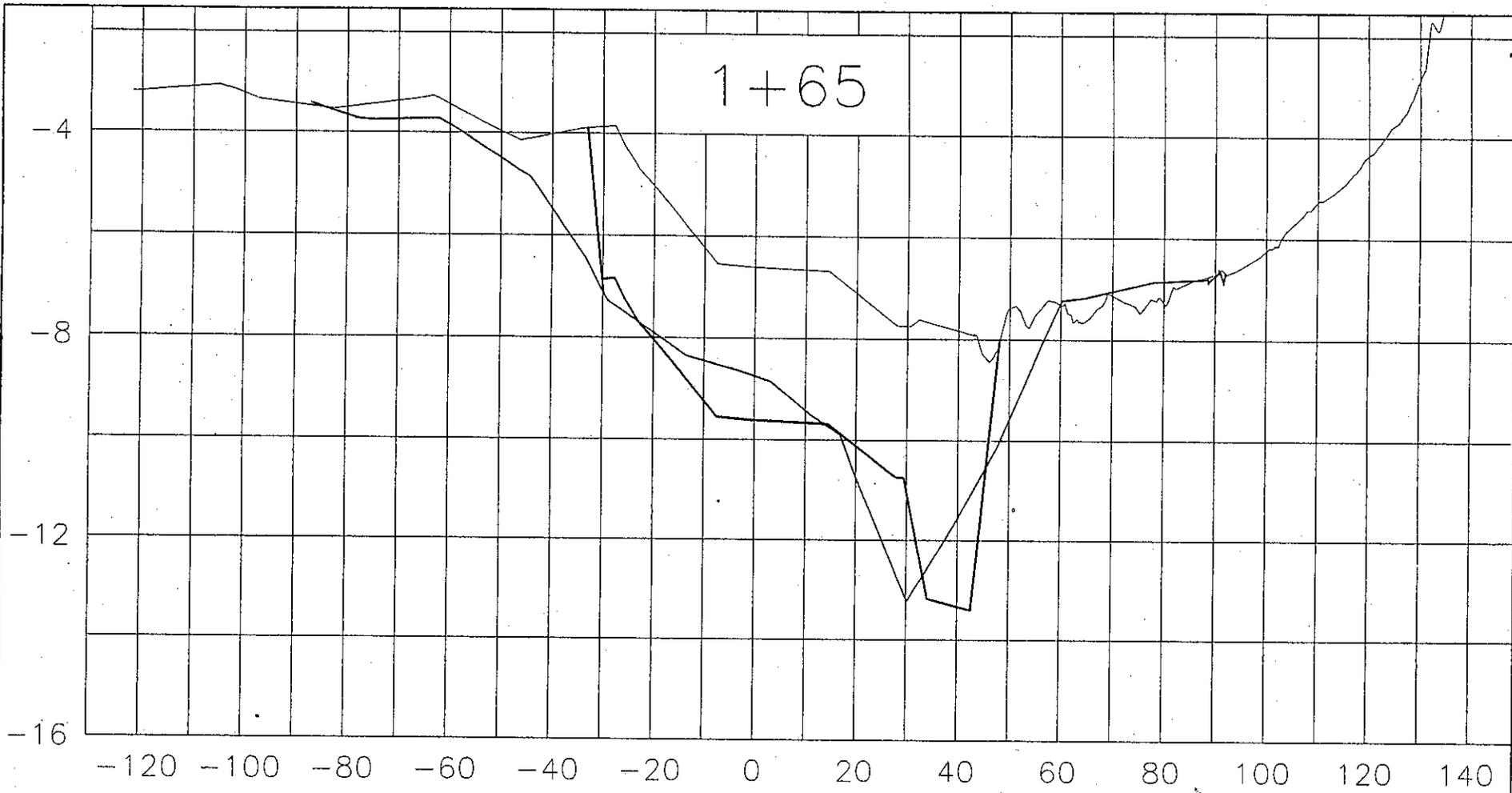
NO.	DESCRIPTION

BCE *Bourne Consulting Engineering*
 184 West Central Street
 Franklin, MA 02038
 PH. (508) 528-6137 FAX (508) 528-9873

DRAWN: RBH
 CHECKED: JWH
 APPROVED: JWH
 DATE: 12/05/03

DRAWING NO. 23468-08-08
 SHEET 8 OF 18

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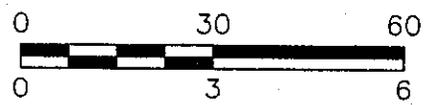
- BCE PRE-DREDGE
- BCE POST-DREDGE
- PROPOSED DREDGE

AREA D
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



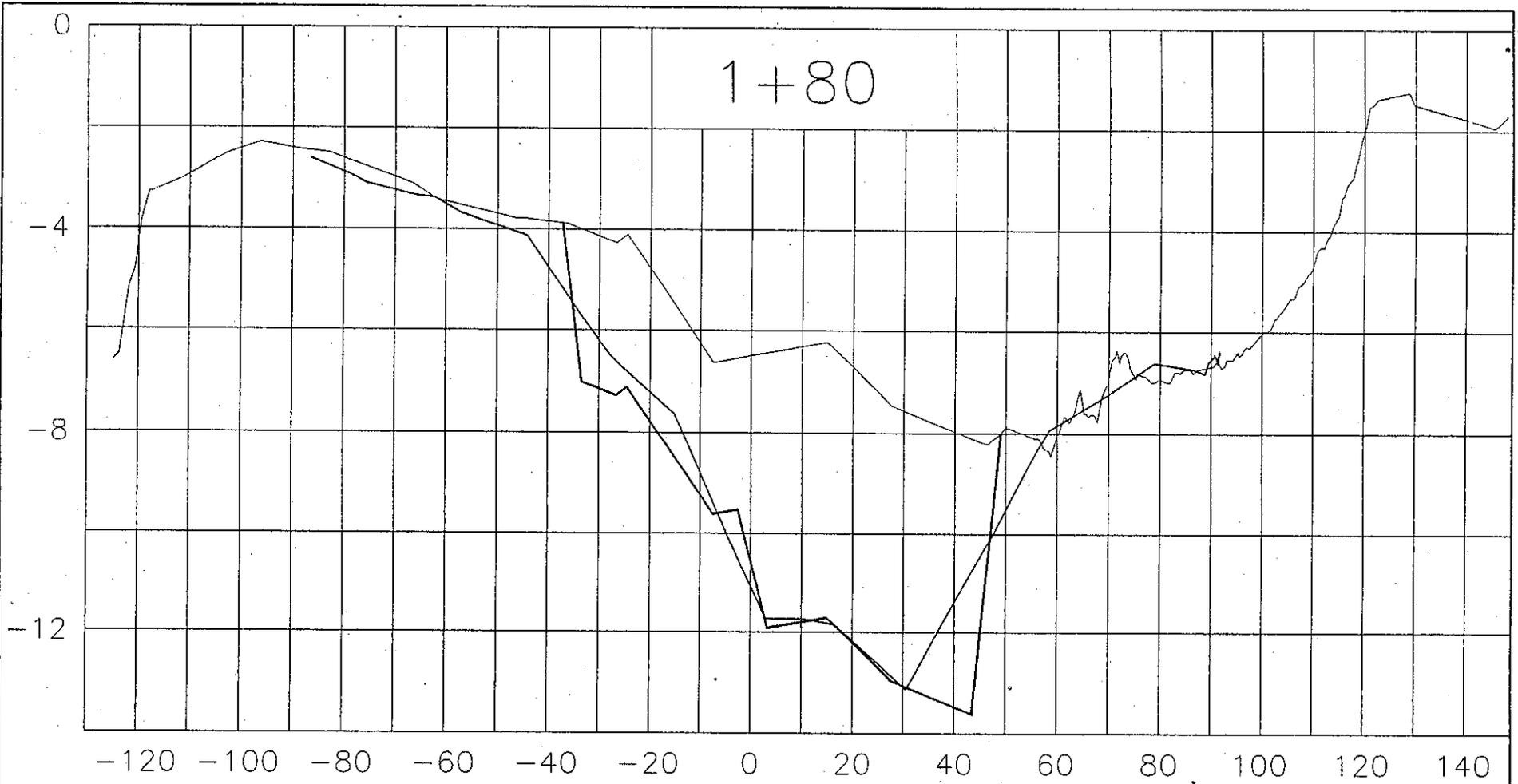
NO.	DATE	DESCRIPTION

BCE *Bourne Consulting Engineering*
104 West Central Street
 Franklin, MA 01890
 PH. (508) 530-6132 FAX (508) 530-9971

DRAWN: RBH
 CHECKED: JWH
 APPROVED: JWH
 DATE: 12/05/03

DRAWING NO. 23468-08-09
 SHEET 9 OF 18

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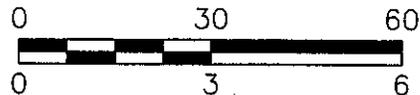
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-  PROPOSED DREDGE

AREA D
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

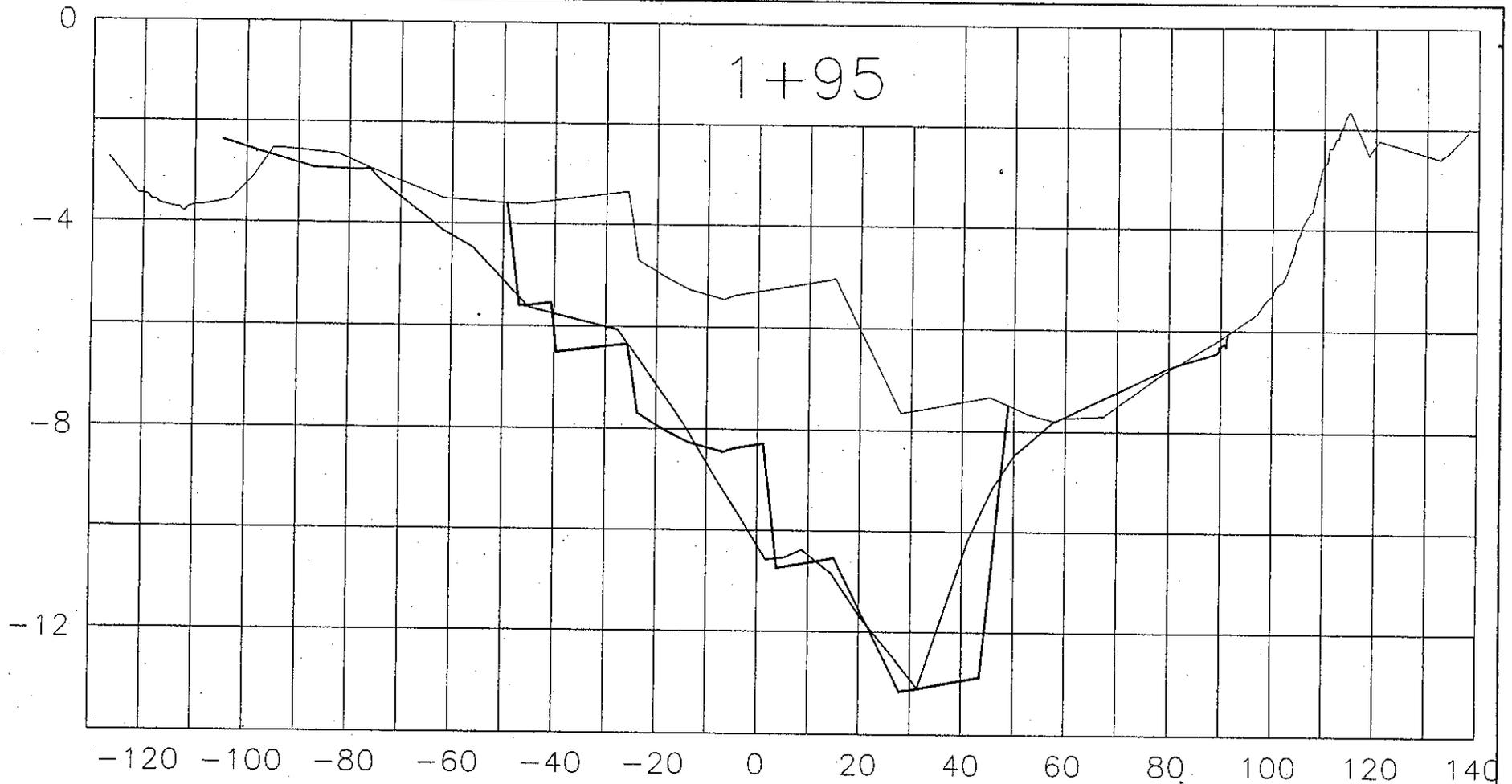
HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'

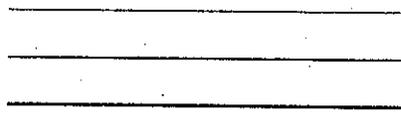


REVISIONS	 Bourne Consulting Engineering <small>184 West Central Street Franklin, MA 02038 PH. (508) 688-6125 FAX (508) 289-8877</small>	DRAWING NO. 23468-08-10
	DRAWN: <u>RBH</u> CHECKED: <u>JWH</u> APPROVED: <u>JWH</u> DATE: <u>12/05/03</u>	SHEET 10 OF 18
	DECEMBER 5, 2003	
	AREA D POST-DREDGE CROSS-SECTIONS	

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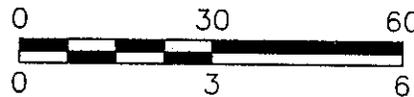
_____ BCE PRE-DREDGE
 _____ BCE POST-DREDGE
 _____ PROPOSED DREDGE

AREA D
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



NO.	DESCRIPTION	DATE


Bourne Consulting Engineering
104 West Central Street
 Franklin, MA 01830
 PH. (508) 526-8153 FAX. (508) 526-9071

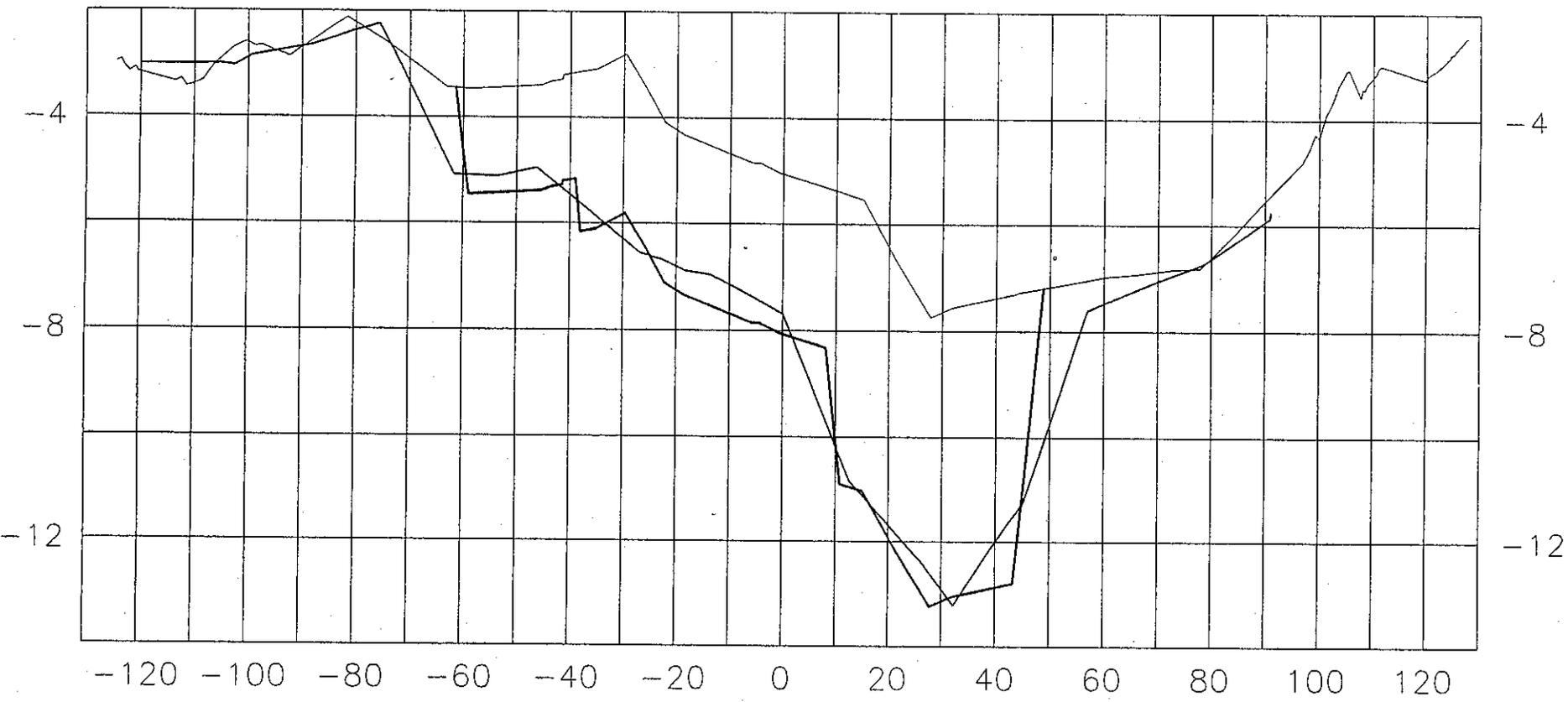
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 APPROVED: JWH
 DATE: 12/05/03

DRAWING NO. 23468-08-11

SHEET 11 OF 18

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2+10

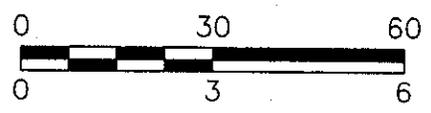


LEGEND:

-  BCE PRE-DREDGE
-  BCE POST-DREDGE
-  PROPOSED DREDGE

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



AREA D
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

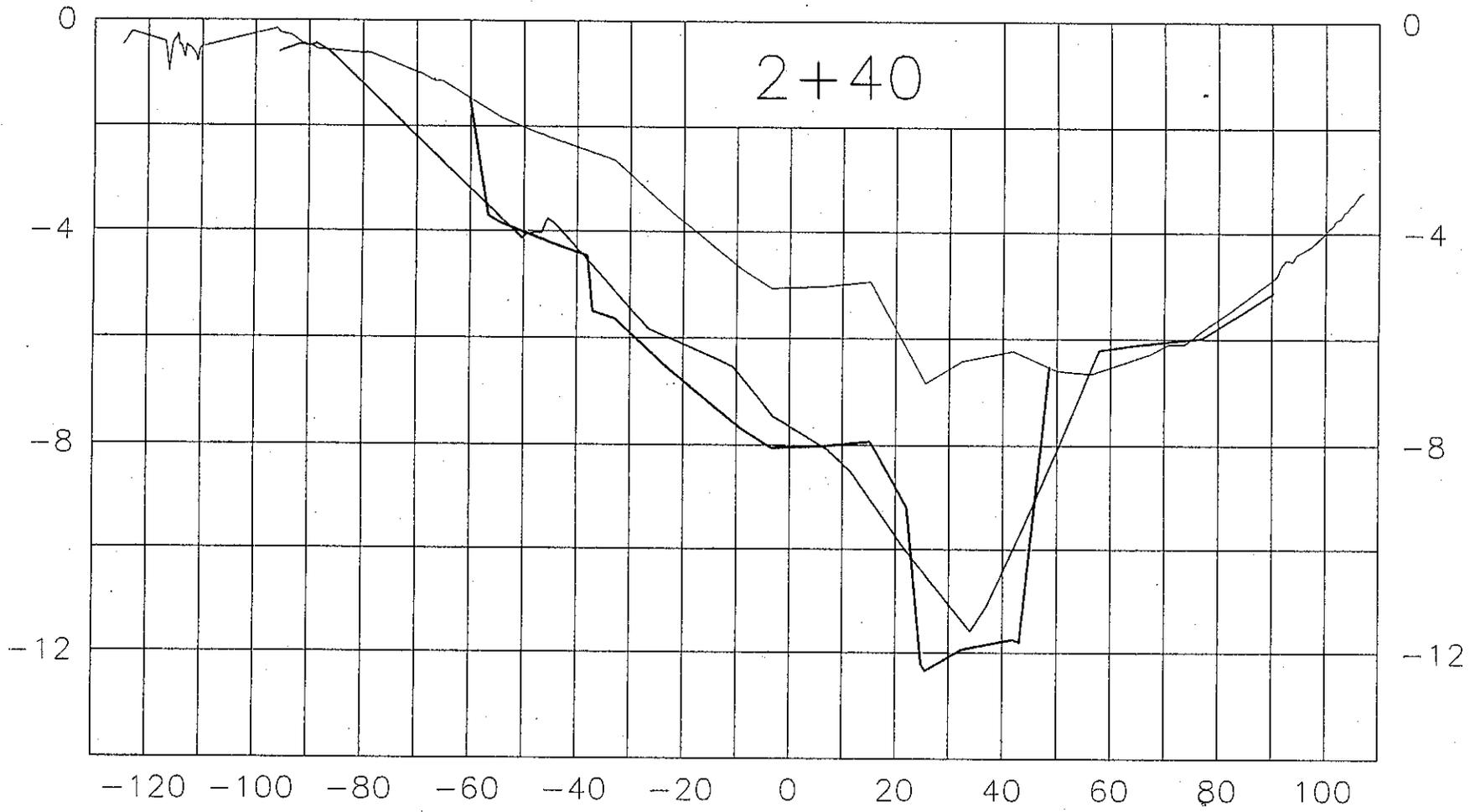
NO.	DESCRIPTION	DATE

BCE Bourne Consulting Engineering
 104 West Central Street
 Franklin, MA 02030
 PH. (508) 620-8130 FAX (508) 620-0673

DRAWN: RBH
 CHECKED: JWH
 APPROVED: JWH
 DATE: 12/05/03

DRAWING NO. 23468-08-12
 SHEET 12 OF 18

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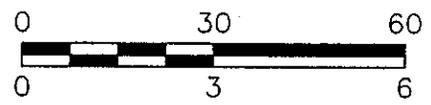
-  BCE PRE-DREDGE
-  BCE POST-DREDGE
-  PROPOSED DREDGE

AREA D
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



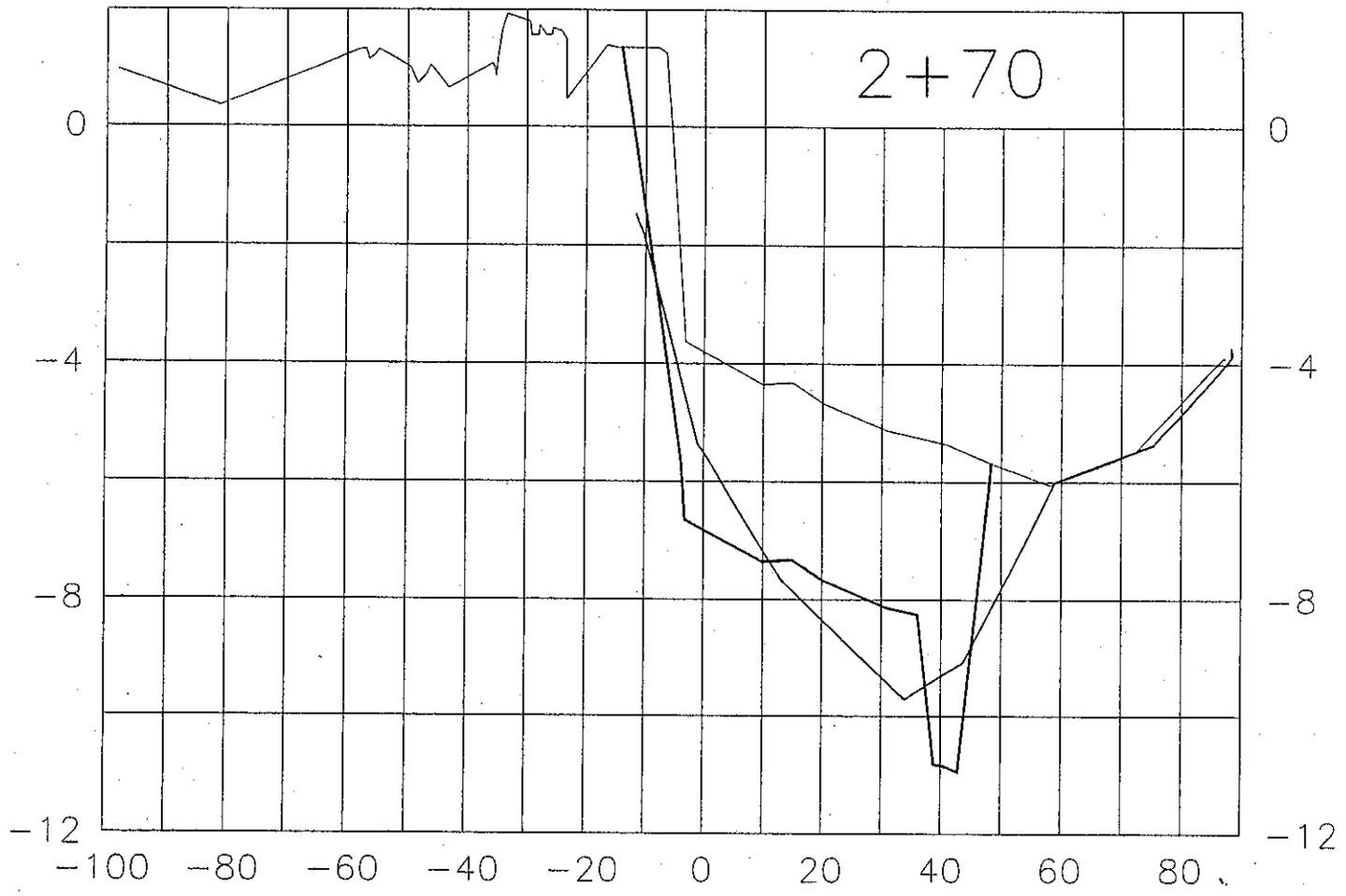
NO.	DESCRIPTION	DATE

BCE *Bourne Consulting Engineering*
 184 Foot Central Street
 Franklin, MA 02038
 PH. (508) 828-8123 FAX (508) 828-8071

DRAWN: RBH
 CHECKED: JWH
 APPROVED: JWH
 DATE: 12/05/03

DRAWING NO. 23468-08-14
 SHEET 14 OF 18

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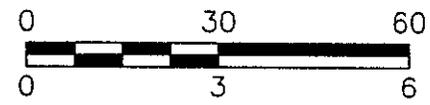
-  BCE PRE-DREDGE
-  BCE POST-DREDGE
-  PROPOSED DREDGE

AREA D
POST-DREDGE
CROSS-SECTIONS

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



NO.	DESCRIPTION	DATE

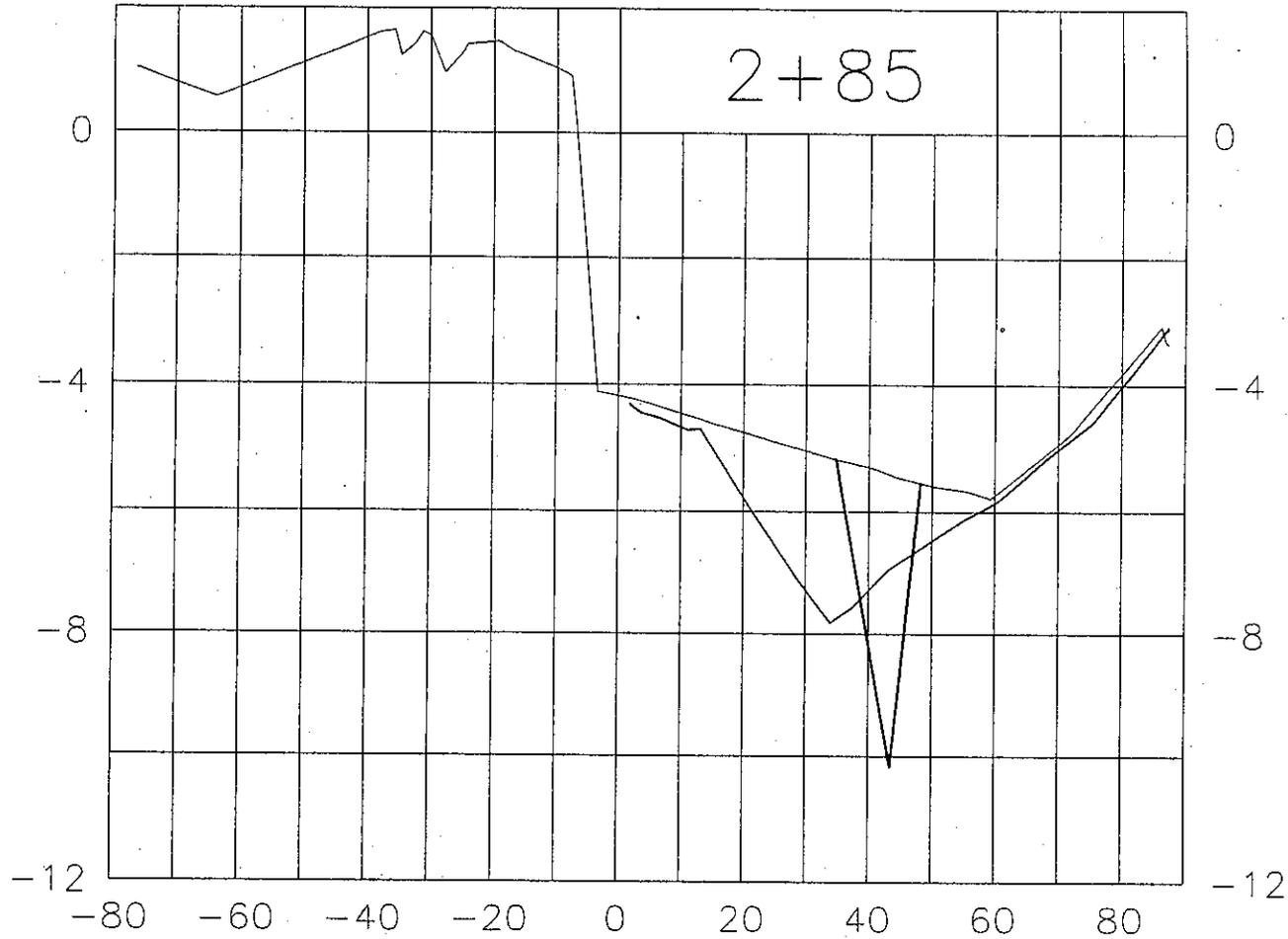


BCE Bourne Consulting Engineering
 144 West Central Street
 Franklin, MA 01890
 PH: (508) 680-0132 FAX: (508) 680-0871

DRAWN: RBH
 CHECKED: JWH
 APPROVED: JWH
 DATE: 12/05/03

DRAWING NO. 23468-08-16
 SHEET 16 OF 18

File: X:\23468\Maxy. Unsorted Files\dwg\AREA D 8x11 120503.dwg



LEGEND:

-  BCE PRE-DREDGE
-  BCE POST-DREDGE
-  PROPOSED DREDGE

**AREA D
POST-DREDGE
CROSS-SECTIONS**

DECEMBER 5, 2003

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'



NO.	DESCRIPTION	DATE

BCE *Bourne Consulting Engineering*
 104 Post Control Street
 Franklin, MA 01903
 PH. (508) 838-8130 FAX. (508) 838-8777

DRAWN: BBH
 CHECKED: JWH
 APPROVED: JWH
 DATE: 12/05/03

DRAWING NO. 23468-08-17
 SHEET 17 OF 18

NOTES:

1. CROSS SECTIONS BASED ON A PLAN BY BOURNE CONSULTING ENGINEERING ENTITLED "PRE DREDGE AREA A, POST DREDGE AREA D, NEW BEDFORD SUPERFUND SITE MELVILLE SHIPYARD DREDGING USACE CONTRACT# DACW 33-94-D-002" DATED 10/17/03
2. ELEVATIONS ARE SHOWN IN FEET AND TENTHS BASED ON A MEAN LOWER LOW WATER DATUM. POSITIVE VALUES REPRESENT DEPTH ABOVE THAT SAME PLANE.
3. THE INFORMATION PRESENTED ON THIS CHART REPRESENTS THE RESULTS OF SURVEYS PERFORMED BY BOURNE CONSULTING ENGINEERING ON 8/12/03 AND 10/02/03 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO BCE.
4. HORIZONTAL AND VERTICAL CONTROL FOR THIS SURVEY WAS PROVIDED BY MAXYMILLIAN TECHNOLOGIES INC.
5. BENCH MARK IS A POINT SET IN THE NORTHEAST CORNER OF A CONCRETE PAD (DECON PAD) ELEV=8.14 NGVD
=9.58 MLLW
6. DREDGE AREAS TAKEN FROM A PLAN ENTITLED "NEW BEDFORD HARBOR SUPER FUND SITE (OU#1) NEW BEDFORD, MA. MELVILLE SHIPYARD DREDGING ENVIRONMENTAL DREDGING PLAN -1&2" PREPARED BY USACE MAY, 2003
7. DREDGE DEPTHS WITHIN THE DREDGE AREA WERE ADJUSTED BY -0.2 TO COMPENSATE FOR FLUFFING MEASUREMENTS TAKEN WITHIN THE DREDGE AREA ON NOVEMBER 18, 2003.
8. DREDGE VOLUME BASED ON PRE AND POST DREDGE HYDROGRAPHIC SURVEYS IS AS FOLLOWS:

<u>AREA DESIGNATION</u>	<u>DREDGE VOLUME</u>
DREDGING AREA D	2134 CUBIC YARDS

AREA D
POST-DREDGE
NOTES

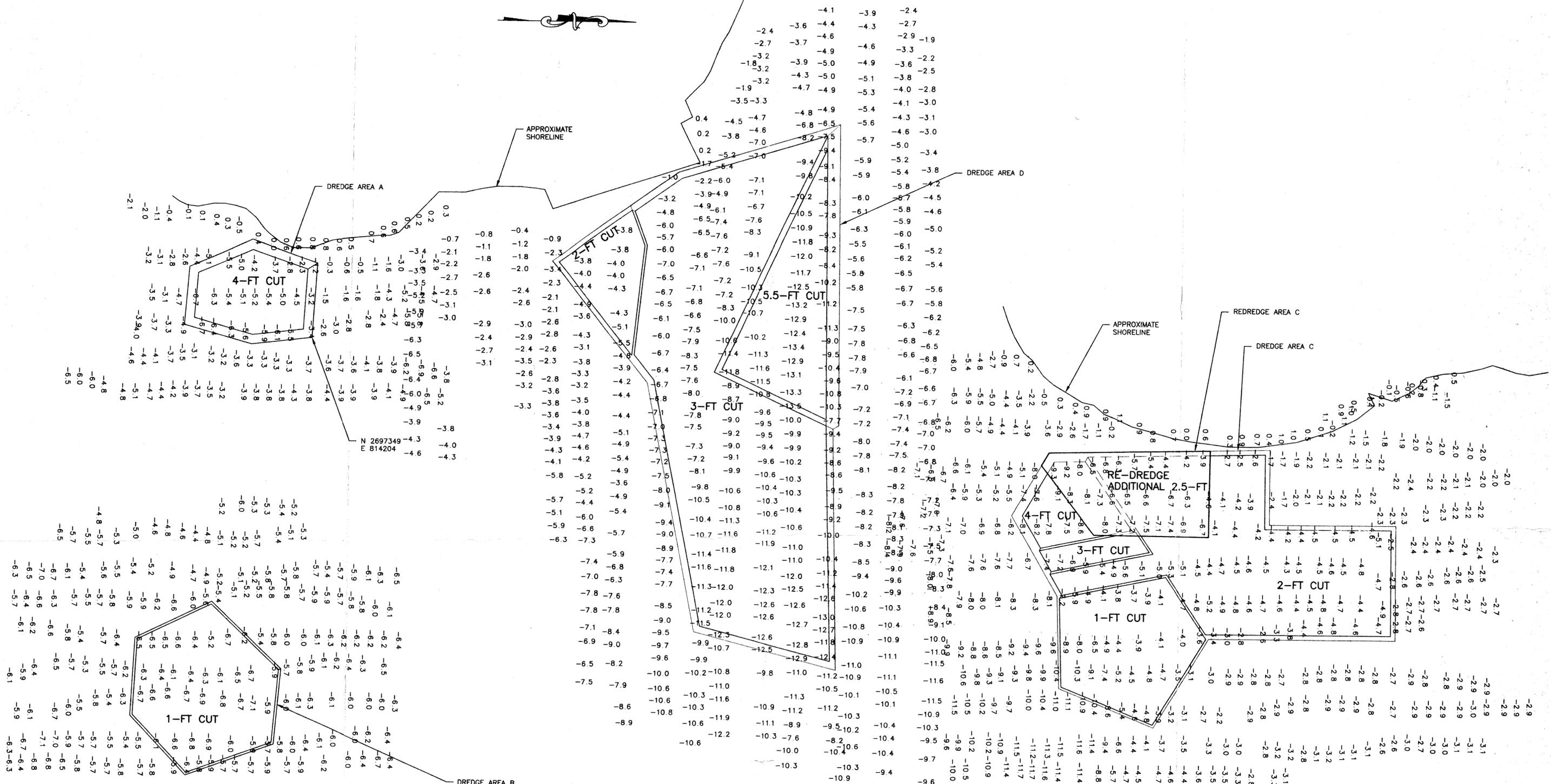
NEW BEDFORD SUPERFUND SITE
MELVILLE SHIPYARD DREDGING
USACE CONTRACT# DACW 33-94-D-002
NEW BEDFORD, MA
DECEMBER 5, 2003

		 <p>BCE <i>Bourne Consulting Engineering</i></p> <p><small>184 West Central Street Providence, RI 02908 PH. (401) 520-4153 FAX (401) 520-4671</small></p>
REVISIONS		DRAWN: RBH _____ CHECKED: JWH _____ APPROVED: JWH _____ DATE: 12/05/03 _____
		DRAWING NO. 23468-08-18
		SHEET 18 of 18

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Appendix C.6
Post Dredge Survey Plan

Note
Large size fig
in distribution

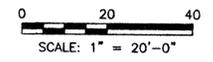


NOTES:

- COORDINATES ARE BASED ON NAD 83 MASSACHUSETTS STATE PLANE COORDINATE SYSTEM AND ARE EXPRESSED IN FEET.
- SOUNDINGS AND ELEVATIONS ARE SHOWN IN FEET AND TENTHS BASED ON A MEAN LOWER LOW WATER DATUM. POSITIVE VALUES REPRESENT DEPTH ABOVE THAT SAME PLANE.
- THE INFORMATION PRESENTED ON THIS CHART REPRESENTS THE RESULTS OF SURVEYS PERFORMED BY BOURNE CONSULTING ENGINEERING ON 9/12/03, 9/8/03, 11/2/03, 11/16/03 & 11/18/03 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO BCE.
- HORIZONTAL AND VERTICAL CONTROL FOR THIS SURVEY WAS PROVIDED BY MAXYMILLIAN TECHNOLOGIES INC.
- BENCH MARK IS A POINT SET IN THE NORTHEAST CORNER OF A CONCRETE PAD (DECON PAD) ELEV=8.14 NGVD =9.58 MLLW
- DREDGE AREAS TAKEN FROM A PLAN ENTITLED "NEW BEDFORD HARBOR SUPER FUND SITE (OU#1) NEW BEDFORD, MA, MELVILLE SHIPYARD DREDGING ENVIRONMENTAL DREDGING PLAN -1&2" PREPARED BY USACE MAY, 2003

- DREDGE DEPTHS WITHIN THE DREDGE AREAS WERE ADJUSTED BY -0.2 TO COMPENSATE FOR FLUFFING MEASUREMENTS TAKEN WITHIN THE DREDGE AREAS ON NOVEMBER 18, 2003.
- DREDGE VOLUMES BASED ON PRE AND POST DREDGE HYDROGRAPHIC SURVEYS ARE AS FOLLOWS:

AREA DESIGNATION	DREDGE VOLUMES
AREA A	331 CUBIC YARDS
AREA B	173 CUBIC YARDS
AREA C	1052 CUBIC YARDS
AREA C REDREDGE	255 CUBIC YARDS
AREA D	2134 CUBIC YARDS



POST-DREDGE SURVEY
NEW BEDFORD SUPER FUND SITE
MELVILLE SHIPYARD DREDGING
USACE CONTRACT# DACW 33-94-D-002
NEW BEDFORD, MA
NOVEMBER, 2003

REVISIONS 12/15/03 12/17/03	CUT DEPTHS	BCE Bourne Consulting Engineering <small>104 Paul Central Street Franklin, MA 01832 PH. (508) 528-8133 FAX (508) 528-9071</small>	DRAWN: DAE/RBH CHECKED: JWH APPROVED: JWH DATE: 11/26/03	DRAWING NO. 23468-02-01 SHEET 1 OF 1
	AREA C REDREDGE		DATE: 11/26/03	SHEET 1 OF 1
	REVISIONS		DATE: 11/26/03	SHEET 1 OF 1

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Appendix D
Air Sampling Data

**Summary of Air Sample Results
North Lobe Dredging Remediation**

Sampling Location	Sawyer Street				Transmittal No.
	AQ Site 2	AQ Site 3	AQ Site 6	AQ Site 38	
Sampling Date [month/day/year]	Total PCBs* [ng/m ³]				
09/03/03				28	N1.02.03.01
09/10/03	95	79			N1.02.03.02
09/18/03				23	N1.02.03.03
09/30/03	74		36	17	N1.02.03.04
Station Average	85	79	36	23	
Station Maximum	95	79	36	28	
Baseline Annual Average**	49	49	49	9.4	
Baseline Annual Maximum**	160	160	160	20	

Samples were collected and analyzed in accordance with the project Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP).

* Reported as the sum of the detected total homologue groups.

** Baseline data for AQ Site 2, AQ Site 3, and AQ Site 6 are based on results for AQ Site 26 (103 Sawyer Street) from the Apr. 1999- Apr. 2000 Annual Baseline Sampling. Baseline data for AQ Site 38 are based on results for AQ Site 21 (New Bedford Welding) from the Apr. 1999 – Apr. 2000 Annual Baseline Sampling.

Appendix E

ENSR's Water Quality Monitoring Summary Report



U.S. Army Corps of
Engineers
New England District

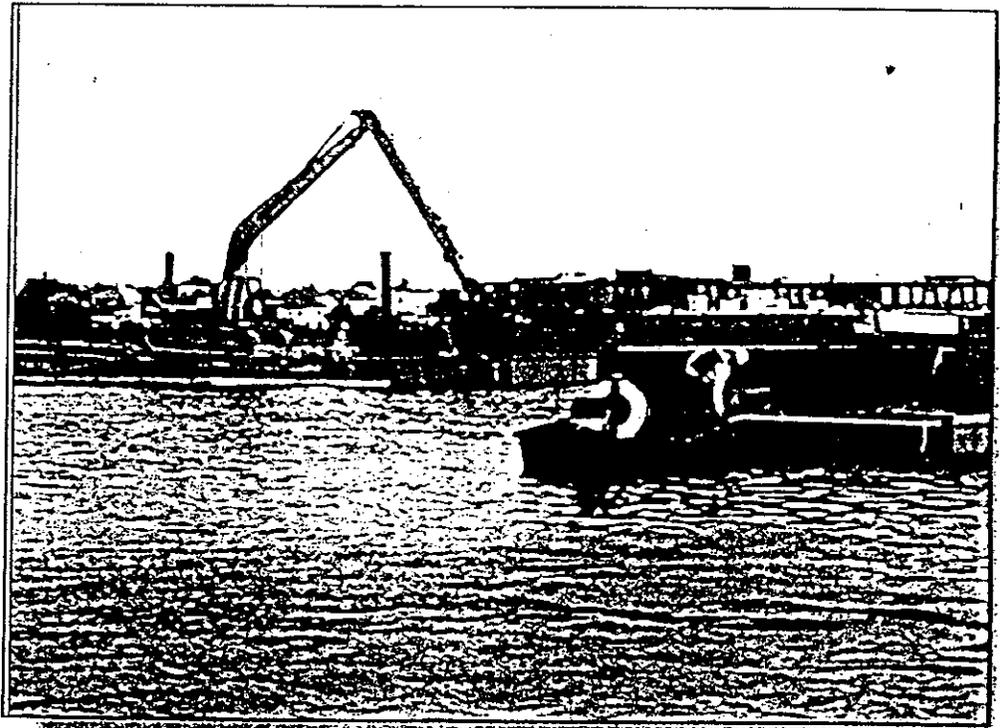


U.S. Environmental
Protection Agency

Water Quality Monitoring Summary Report

III. North Lobe Dredging (August - October 2003)

New Bedford Harbor Superfund Site -
New Bedford, Massachusetts



Prepared by:



Woods Hole Group
Environmental Laboratories



ENSR Corporation



CR Environmental

Contract:
DACW33-02-D-0006
Task Order 0001
ENSR Document No.
10310-003-1300

CV04003c

Draft Final
February 2004



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4.0 RESULTS OF WATER QUALITY MONITORING.....	5
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Figure 2. Initial and Revised North Lobe Dredge Areas

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Figure 4. Photographs of North Lobe Dredging

Figure 5. Photographs of Dredged Material Transfer to Sawyer Street Facility

Figure 6. Water Quality Monitoring Decision Sequence

Figure 7. Analytical Protocol Decision Sequence



EXECUTIVE SUMMARY

As part of the remediation of the New Bedford Harbor Superfund Site, approximately 3945 cubic yards of contaminated sediments were removed from four specific locations in the North Lobe area of the Lower Harbor. The sediments were removed to allow for construction of a bulkhead and shore side facility to accommodate relocation of the Tisbury Towing and Transportation Company. The sediments to be dredged contained elevated concentrations of PCBs and some metals. As a result, the USEPA and USACE required that the dredging be performed using a closed environmental dredge bucket, with a contingency for deployment of a full-depth silt curtain and transport of the dredged material to the USACE's Sawyer Street Facility for storage and later off-site disposal.

In addition to the turbidity controls, a water quality monitoring program was developed by the USEPA and USACE to ensure that the dredging was carried out in a manner that did not result in acute impacts to organisms within the waters adjacent to the work zones or result in significant transport of suspended material and associated contaminants away from these areas. The monitoring program included real-time measurement of turbidity down current of the dredging area for comparison against an upper level project specific turbidity criterion (set at 50 NTU above background 300 ft down current of the work zone). The monitoring specified contingent sampling, analyses, and construction work modification in the event of a turbidity criterion exceedence. The monitoring also included sampling immediately adjacent to the dredge to assess the protectiveness of the 50 NTU criterion and to determine if the use of silt curtain(s) was required.

The dredging of the North Lobe areas was completed between August and October 2003. The water quality monitoring revealed that the dredging caused minimal elevation of suspended solids outside of the immediate dredge area. Turbidity levels at 300 ft down current of the dredging did not exceed (or approach) the 50 NTU above background criterion, and there were no acute toxicity effects for water samples collected in the higher turbidity zone adjacent to the dredge. This allowed the dredging operation to be completed without the deployment of silt curtains. Similar to the monitoring performed during other construction and dredging projects in New Bedford Harbor, vessel operations and repositioning of equipment were found to have the potential to suspend as much sediment as the dredging operation. However, for the transport of the North Lobe material, sediment suspension was only apparent in limited shallow water areas at the lower stages of the tide and, as such, the impacts were considered minimal.

1.0 INTRODUCTION

New Bedford Harbor is located approximately 50 miles south of Boston on the waters of Buzzards Bay in Bristol County, Massachusetts. The sediments in many areas of the Harbor are contaminated with polychlorinated biphenyl's (PCB's) and metals, primarily from the manufacture of electrical components which occurred in the area between 1940 and the mid-1970's. Based on human health concerns and ecological risk assessments, the U.S. Environmental Protection Agency (USEPA) added New Bedford Harbor to the National Priorities List in 1982 as a designated Superfund Site, and stipulated that remedial measures were required to remove PCB-contaminated sediments from the Harbor. Through an Interagency Agreement between the USEPA and the U.S. Army Corps of Engineers, New England District (USACE), the USACE is responsible for carrying out the design and implementation of the remedial measures.

The New Bedford Harbor Superfund Site extends from the shallow northern reaches of the Acushnet River estuary, south through the commercial harbor of New Bedford and out beyond the City's hurricane barrier into 17,000 adjacent acres of Buzzards Bay. The Superfund Site is divided into three areas: the Upper, Lower and Outer Harbors (Figure 1) defined by geographical features of the Harbor and gradients of sediment contamination. The industrial discharge of PCB contaminated waste, either directly into the Harbor or indirectly through the City's sewer system, was most significant in the Upper Harbor. The location of the associated discharge and the hydrodynamics of the Harbor contributed to the deposition of significant levels of PCB contamination in the Upper Harbor. The highest PCB concentrations or "hot-spots", which contained PCB concentrations in excess of 100,000 ppm, resided in the sediments located in the immediate area of the discharge. These "hot-spot" sediments were removed between 1994 and 1995 as part of the USEPA's first cleanup phase (USEPA, 1997). The remaining sediments in the Upper Harbor, an area of approximately 190 acres, are still heavily contaminated, with PCB concentrations as high as 4,000 ppm.

Future remedial dredging efforts are planned for the Upper Harbor and portions of the Lower and Outer Harbors. Until the remedial action has been completed, any in-water construction activities that disturb the contaminated sediments require that a water quality monitoring program be developed to ensure that the construction operation is carried out in a manner such that:

- The disturbance of the contaminated sediments does not result in any acute impact to organisms within the water column outside of the construction area.
- There is not significant transport and deposition of sediments and their associated contaminants outside the construction zone to uncontaminated areas or areas that have already been remediated.

As part of the progression of the overall New Bedford Harbor Superfund Remediation effort, construction of a Sediment Dewatering, Material Transfer & Receiving Facility began in 2002 at the southern lobe of the former CDF D in the Lower Harbor, now referred to as Area D (Figure 1). The dewatering plant will accept dredge material from the Harbor for processing during full scale dredging operations. As part of the construction of this facility, the Tisbury Towing and Transportation Company that was located at Area D is being relocated a short distance to the north at the area referred to as the North Lobe (Figure 1). The relocation of this facility required site and shoreline development of the North Lobe area, including construction of a shoreline bulkhead and dredging of an approach channel.

Previous sampling and analysis of sediments in the North Lobe area had detected elevated levels of PCBs and metals, most notably copper. As a result, the USEPA and USACE had identified specific areas in the vicinity of the planned construction at the North Lobe where special handling of sediments was required because of the contamination levels (Figure 2). A follow up sediment characterization investigation was performed on the sediments in this area, including analysis of sediment and elutriate samples for metals from each area labeled in Figure 2 as well as toxicity bioassays on the suspended particulate phase generated from Areas A and F6 (ENSR 2003). The analyses confirmed the elevated metals concentrations and revealed the potential for acute suspended phase toxicity, particularly for the sediments from Area F6 (ENSR 2003). Based on these results, the USEPA and USACE limited the dredging for preparation of the North Lobe area for construction to Areas A, B, C, and D and required that the dredging be performed with a closed environmental bucket with a contingency for deployment of silt curtains.

In addition to the specialized dredging technique, the USEPA and USACE developed a water quality monitoring program to ensure that the project water quality goals were being met. The monitoring focused on real-time turbidity monitoring adjacent to the dredging and at specified distances from the operation (Figure 3). Dredging operations were completed between August and October 2003. This work was performed by Maximillian Corp. under contract to Tetra Tech Environmental (formerly Foster Wheeler Environmental). The USACE water quality monitoring was performed by Woods Hole Group Environmental Laboratories (WHG) with team members ENSR Consulting, CR Environmental, and Aquatec Biological Sciences. The monitoring revealed that the site controls were successful in meeting the goals defined above and limiting overall impacts to water quality. This report provides a summary of the water quality monitoring program and results.

2.0 DREDGING SUMMARY

The dredging of North Lobe area consisted of the removal of approximately 3945 cubic yards of contaminated sediments from Areas A, B, C, and D (Figure 2). The dredging was performed using an excavator outfitted with a closed environmental bucket (Figure 4). Dredged sediments were initially placed into a partitioned holding bay on the dredge barge. Debris imbedded within the sediment was sorted within the holding bay, and excess water was discharged into the Harbor. Material in the holding bay was then transferred into small scows (Figure 4). The scows were then pushed up the Harbor to the USACE Sawyer St. facility, and material was removed from the scow using a long reach excavator (Figure 5). The material was processed to further remove debris and stones and pumped into the holding cell located at the Sawyer St. facility.

An oil-absorbent boom was maintained around the dredging operation. Due to the limited duration of dredging in each dredge area and the use of the enclosed environmental bucket, silt curtains were not initially placed around the dredge. The deployment of silt curtains was contingent upon the results of water quality monitoring activities, i.e., if the monitoring indicated that the use of the environmental bucket alone was not sufficient to limit water column impacts, then silt curtains would be deployed. Dredge activities began in August 2003 and were completed in October 2003, and the use of the silt curtains was not required.

3.0 WATER QUALITY MONITORING DURING DREDGING

As described in Section 2, specialized dredging equipment was required to ensure that the removal of the sediments was performed in a manner that limited the potential release of suspended material and their associated contaminants to the water column. The USEPA and USACE developed a water quality monitoring program to ensure that the dredging equipment was effective at meeting the environmental goals outlined in Section 1. The program was based on the measurement of turbidity as a surrogate for contaminant release and transport and included a project-specific turbidity criterion and boat-based monitoring. A brief summary of the monitoring is presented below, and further information may be found in the Scope of Work (SOW) for the Water Quality Monitoring during Construction Activities at the North Lobe, New Bedford Harbor Superfund Site (Appendix A).

The project-specific turbidity criterion was defined as 50 NTU above background at the edge of a 300 ft mixing zone around the dredging area (Figure 3). This criterion was developed based on a review of previous dredging and monitoring activities at the New Bedford Harbor Superfund Site and an understanding of sediment contamination and current patterns in the vicinity of the construction. The water quality monitoring program focused on boat-based measurement of turbidity in the near field adjacent to the dredging and along transects at specified distances from the operation. In the event of a turbidity exceedence at the 300 ft down-current mixing zone, samples were collected at this location for toxicity testing, and additional monitoring and sampling was detailed as outlined in Figure 6. An analytical test protocol was developed to determine when collected water samples would be submitted for biological (toxicity) testing and chemical analysis following an exceedence of the turbidity criterion (Figure 7). The Sampling and Analysis Plan and Quality Assurance Project Plan – New Bedford Harbor Water Quality Monitoring for Area D Construction Activities and Sediment Characterization Studies (SAP/QAPP) (WHG, 2002) provided specific detail on sample handling and laboratory methodology.

The monitoring also included periodic sample collection within the near field area immediately adjacent to the dredging for toxicity testing to determine if the 50 NTU criterion was ecologically protective or if there was a need to deploy silt curtains to meet project environmental goals. Sample collection was targeted at the area with the highest turbidity levels with the 24-hour sea urchin (*Arbacia* sp) fertilization test used to assess ecological impact.

4.0 RESULTS OF WATER QUALITY MONITORING

Boat-based monitoring was performed on 13 days and shore-side oversight on two days during the eight-week dredging project. A summary of the daily monitoring is provided in Table 1, and the two monitoring updates prepared over the course of the project are included in Appendix B. There were no exceedences of the 50 NTU turbidity criterion.

Background turbidity levels generally ranged from 4 to 6 NTU over the course of the project. In the near field area within 100 ft of the dredge, the water was often visibly turbid. Turbidity levels were commonly 20-30 NTU above background in this area and ranged as high as 70 NTU above background. Turbidity decreased with distance from the dredge and was generally within 10 NTU of background at 300 ft down current of the dredge. Debris (in the form of scrap metal, wire, and wood) were removed by the dredge on multiple occasions while monitoring was being performed, but did not appear to significantly affect turbidity.

Turbidity associated with other related operations was also monitored. Water from holding bay on the dredge barge was periodically discharged as was ballast water from the dredge's internal chambers. Visibly turbid water was sometimes observed in the immediate vicinity of the discharge, especially when it occurred directly at the surface. At these times turbidity as high as 60 NTU above background was measured within approximately 50 ft of the discharge. However, the elevated turbidity was generally localized and often difficult to document separately from the actual dredging. Turbidity was also monitored as the scows containing the dredged material were pushed approximately 0.75 miles north for offloading at the USACE Sawyer Street facility in the Upper Harbor. Turbidity elevation along this transit was only noted in the shallow water where the dredging operation was performed and in the approach to the Sawyer Street facility. Turbidity values as high as 200 NTU were recorded within the propeller wash approximately 100 ft from the pushboat during those occasions when the scow was temporarily grounded in the shallow water. These turbidity elevations were short in duration (minutes) and dropped off quickly with distance from the pushboat.

A large oil slick was observed on the water early in the project, but this slick was determined to be associated with a fishing vessel that sank at its mooring near the dredge site. A localized oil sheen was observed on several occasions in the vicinity of the dredging, but dissipated within several hundred feet of the operation.

Water samples were collected within the identified turbidity plume in the near field area of the dredge on four occasions during the project (Table 2). These samples were submitted for the 24-hour sea urchin (*Arbacia* sp) fertilization test. The test results revealed no apparent acute effects for any of the samples (Table 2; Appendix C).

5.0 DISCUSSION

The water quality monitoring revealed that the dredging of North Lobe Areas A, B, C, and D caused minimal elevation of suspended solids outside of the immediate dredge area. Turbidity levels at 300 ft down current of the dredging did not exceed (or approach) the 50 NTU above background criterion, and there were no acute toxicity effects for water samples collected in the higher turbidity area adjacent to the dredge. This allowed the dredging operation to be completed without the deployment of silt curtains. The limited turbidity associated with the dredging is attributed to the dredging technique as well as the location. The dredging was performed using a fully enclosed bucket mounted on an excavator. This allowed precise placement of the dredge bucket and limited loss during retrieval. In addition, because the dredge areas were located in shallow water close to shore, they were outside of the zone of higher tidal currents, and the potential for sediment transport was minimized.

Similar to the monitoring performed during other construction and dredging projects in New Bedford Harbor, vessel operations and repositioning of equipment were found to have the potential to suspend as much sediment as the dredging operation (ENSR 2003, 2001). For the North Lobe dredging project, these vessel effects were only apparent in limited shallow water areas at the lower stages of the tide as loaded scows were transferred from the dredging area to the offloading area at the Sawyer Street Facility and, as such, the impacts were considered minimal.



6.0 REFERENCES

ENSR. 2001. Water Quality Monitoring Summary Report, Construction of the Commonwealth Electric Cable Crossing, New Bedford Harbor Superfund Site - New Bedford, MA. Contract: DACW33-96-D-004, Task Order 49. 9000-275-000. February 2001.

ENSR. 2003. North Lobe Dredging Area Characterization Report, New Bedford Harbor Superfund Site - New Bedford, MA. 10310-004-0637. August 2003.

ENSR, 2001. Water Quality Monitoring Summary, Appendix K, Pre-Design Field Test Dredge Technology Evaluation Report, New Bedford Harbor Superfund Site. August 2001.

USEPA. 1997. Report on the Effects of the Hot Spot Dredging Operations - New Bedford Harbor Superfund Site, New Bedford, MA. October, 1997.

Woods Hole Group. 2002. Sampling and Analysis Plan & Quality Assurance Project Plan for New Bedford Harbor, Water Quality Monitoring for Area D Construction Activities and Sediment Characterization Studies (Revision 4.0).



Table 1. Monitoring Activities during North Lobe Dredging

Date (2003)	Activity	Samples Collected	Turbidity Down-Current (NTU)	Turbidity at Up-Current Reference Site (NTU)	Notes
25 August	Site Preparation	No		5-6	WQ mob
02 September	Dredging in Area B begins	No	3-43	4-6	Highest turbidity measured along transect 50 ft down current of dredging. Turbidity at 300 ft compliance point turbidity ranged from 3-25 NTU. Extensive oil sheen noted on harbor, later determined to be associated with a recently sunken fishing vessel
03 September	Dredging in Area B continues	3	2-16	3-4	Highest turbidity measured along transect 50 ft down current (3-16 NTU). Turbidity at 300 ft compliance point ranged from 3-11 NTU. Oil sheen associated with sunken vessel still visible. Dewatering of dredged material in dredge hopper did not result in elevated turbidity.
04 September	Dredging of Area B completed, Dredging of Area D begins. Loaded scow pushed to Sawyer St.	No	4-75	4-6	Highest turbidity noted at 50 ft transect (4-75 NTU). Turbidity at 300 ft compliance point was 4-9 NTU. Some localized oil sheen associated with dredging operations noted. Turbidity at dewatering discharge up to 37 NTU, decreased to background levels within 20 ft. Turbidity associated with positioning of scow at Sawyer St up to 218 NTU close to the push boat. Dropped to 5 NTU 100 ft from scow.
08 September	Dredging Area D continued. Loaded scow moved to Sawyer St.	No	3-15	4	Dewatering of dredged material was observed. No turbidity elevations detected.



Table 1. (Continued) - Monitoring Activities during North Lobe Dredging

Date (2003)	Activity	Samples Collected	Turbidity Down-Current (NTU)	Turbidity at Up-Current Reference Site (NTU)	Notes
09 September	Dredging Area D continues. 2 loaded scows moved to Sawyer St.	No	2-13	3-8	Moved dewatering discharge to approx. 3 ft below surface; highest reading was 8 NTU at approx. 4 ft below surface. Discharge from dredge barge bilge up to 21 NTU (likely due to rust in discharge). Turbidity associated with positioning scow at Sawyer St. at low tide was up to 51 NTU, dropped to 5 NTU 150 ft from scow.
11 September	Continued dredging Area D	No	NA	NA	A scow pushed to Sawyer St grounded in shallow water at low tide - cleared itself as the tide rose.
15 September	Dredging Area D	No	NA	NA	Limited dredging occurred in the afternoon.
16 September	Dredging Area D. Loaded scow pushed to Sawyer St.	No	1-21	4	Turbidity 50-100 ft from loaded scow and push boat in shallows near Sawyer St. ranged from 4-20 NTU.
17 September	Dredging Area D	No	NA	NA	Floating wood debris observed in dredging area.
22 September	Dredging in Area D. Several trips of scow to Sawyer St.	Yes	0-92	4-5	Turbidity at 300 ft compliance point ranged from 2-14 NTU. Highest turbidity recorded 10-25 ft from dredge. Sample collected for 1 hour <i>Arbacia</i> toxicity. Substantial wire debris in dredged material.

Table 1. (Continued) - Monitoring Activities during North Lobe Dredging

Date (2003)	Activity	Samples Collected	Turbidity Down- Current (NTU)	Turbidity at Up-Current Reference Site (NTU)	Notes
24 September	Dredging in Area D. Several trips of scow to Sawyer St.	No	0-26	4-5	Turbidity during scow transfer activities approx. 1 hr after low tide ranged from 5-134 NTU within 50 ft of scow and push boat. Values decreased to less than 20 NTU within 15 minutes. Turbidity associated with dewatering of sediment ranged from 1-20 NTU. Turbidity associated with barge bilge water discharge ranged from 8-32 NTU and localized oil sheen was observed on near dredge ops.
29 September	Dredging Area D. Several trips of scow to Sawyer St. Shoreline dredge via shore-based excavator occurred for ~1 hr	Yes	2-52	4-7	No turbidity issues associated with shoreline dredging. Localized oil droplets, surface sheen, and floating debris were noted though out the dredge area. Sample collected 50 ft from dredging activities. Elevated turbidity was observed during Sawyer St. transfer activities but was short in duration and in limited area.
01 October	Completed dredging of Area D and began dredging Area C.	No	4-30	3-4	Turbidity increased to 30 NTU near location of dewatering pump discharge. Oil sheen, a brown film and small pieces of absorbent boom material were noted at Area D and Sawyer St sites. Turbidity from 5-36 NTU was observed behind the scow at Sawyer St. Values decreased to 5-14 NTU within one minute.



Table 1. (Continued) - Monitoring Activities during North Lobe Dredging

Date (2003)	Activity	Samples Collected	Turbidity Down- Current (NTU)	Turbidity at Up-Current Reference Site (NTU)	Notes
06 October	Dredging Area C continued and several trips of scow to Sawyer St.	No	4-32	3-5	Oil sheen, small pieces of boom absorbent material, and floating debris were present in the vicinity of the dredging. High levels of turbidity from prop wash of scow pushboat were observed at low tide. Scow became grounded at low tide and was allowed to refloat as tide flooded. Higher levels of turbidity (12-17 NTU) were noted at 300 ft point along the shore, probably due to shoreline sediment resuspension
08 October	Dredging in Area C suspended as dredging began in Area A. Several trips of the scow to Sawyer St.	Yes	4-34	4-5	Sample collected approx. 10 ft from dredge in an area affected by both the dredging and the dewatering discharge pump. Turbidity ranged from 30-63 NTU at this location. Turbidity recorded during scow transfer 2 hrs after low tide ranged from 3-86 NTU, decreasing to 4-29 NTU within 10 minutes. No oil sheen was observed on the Harbor surface.
14 October	Dredging completed in Area A. Dredging in Area C. Initial project dredging completed pending survey.	No	0-40	1-5	Two small surface oil slicks were observed at 150 and 300 ft south of dredging activities. Turbidity related to scow movements near dredging activities up to 29 NTU.

Notes: NA - No turbidity monitoring occurred.



Table 2 - Results of *Arbacia* Fertilization Test

Date	Location of Sample	Dredge Area	Result
3 September 2003	60 ft South of Dredge	Area B	No Effect
22 September 2003	10 ft North of Dredge	Area D	No Effect
29 September 2003	50 ft South of Dredge	Area D	No Effect
8 October 2003	10 ft South of Dredge (sample taken in an area affected by both dredging activities and dewatering of dredge material)	Area C	No Effect



US Army Corps
of Engineers
New England District

New Bedford Harbor Superfund Site

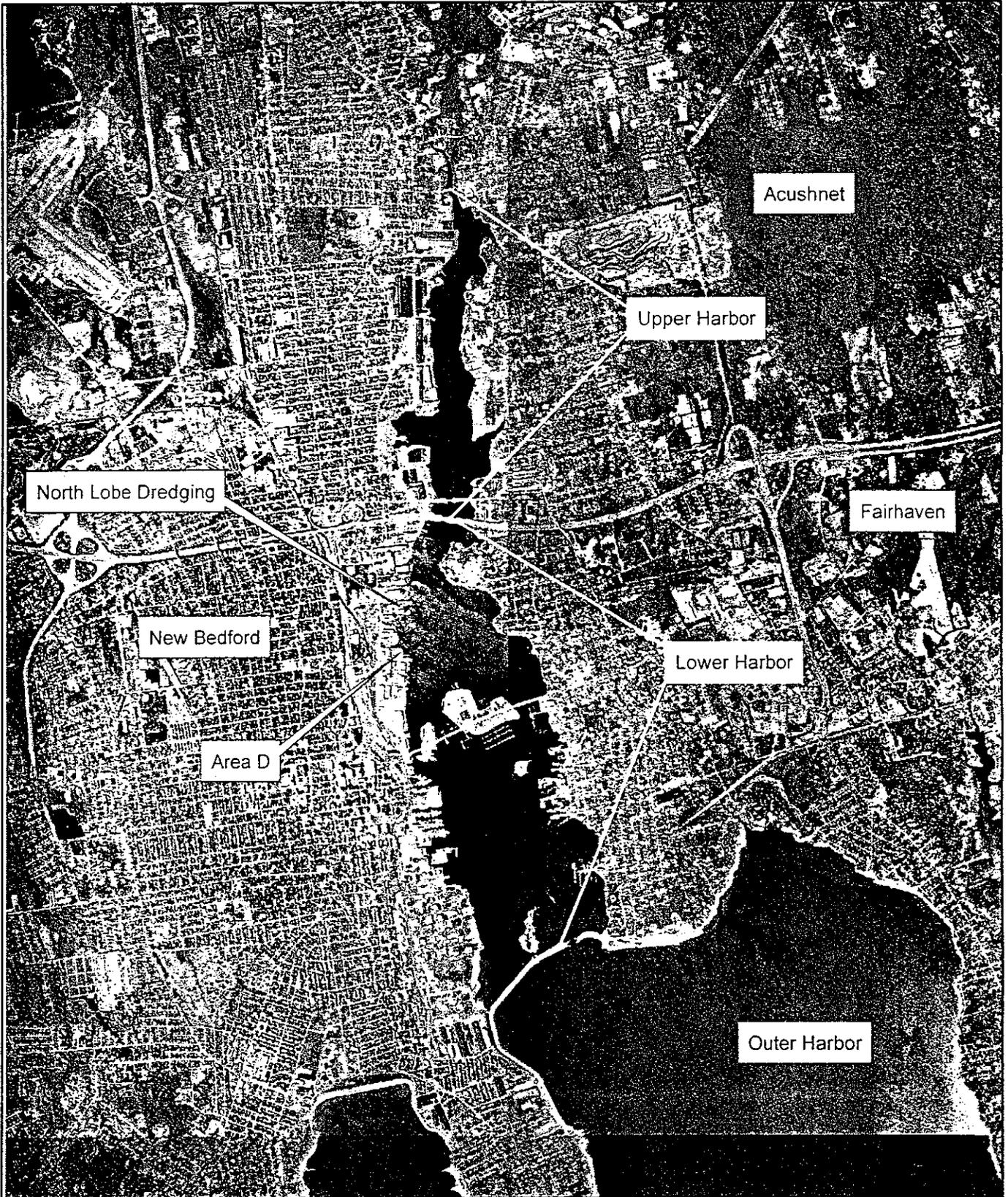
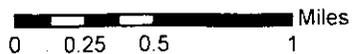


Figure 1. Harbor Overview Showing the Location of the North Lobe Dredging

Sources: MassGIS 1/2-m color orthophotos
NAD 83 Mass State Plane m
Date: 24 November 2003
ME



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Figure 2. Initial and Revised North Lobe Dredge Areas

Sources: MassGIS 1/2-m color orthophotos
NAD 83 Mass State Plane m
Date: 24 November 2003
ME

ENSR

0 50 100 200 Feet





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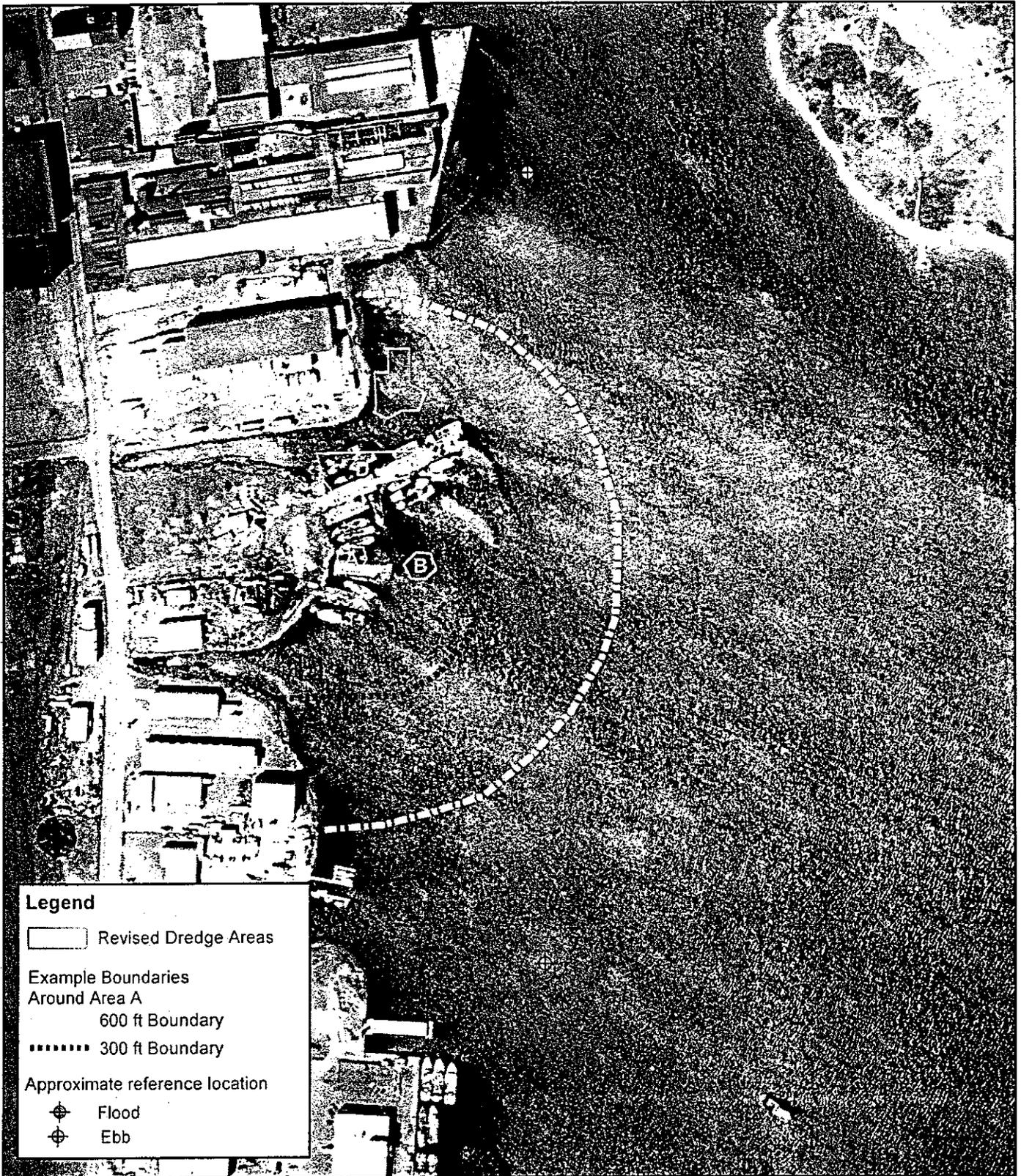


Figure 3. Revised North Lobe Dredge Areas Dredged Fall 2003, with 300 ft and 600 ft Boundaries for Area A

Sources: MassGIS 1/2-m color orthophotos
NAD 83 Mass State Plane m
Date: 24 November 2003
ME

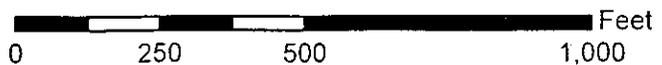
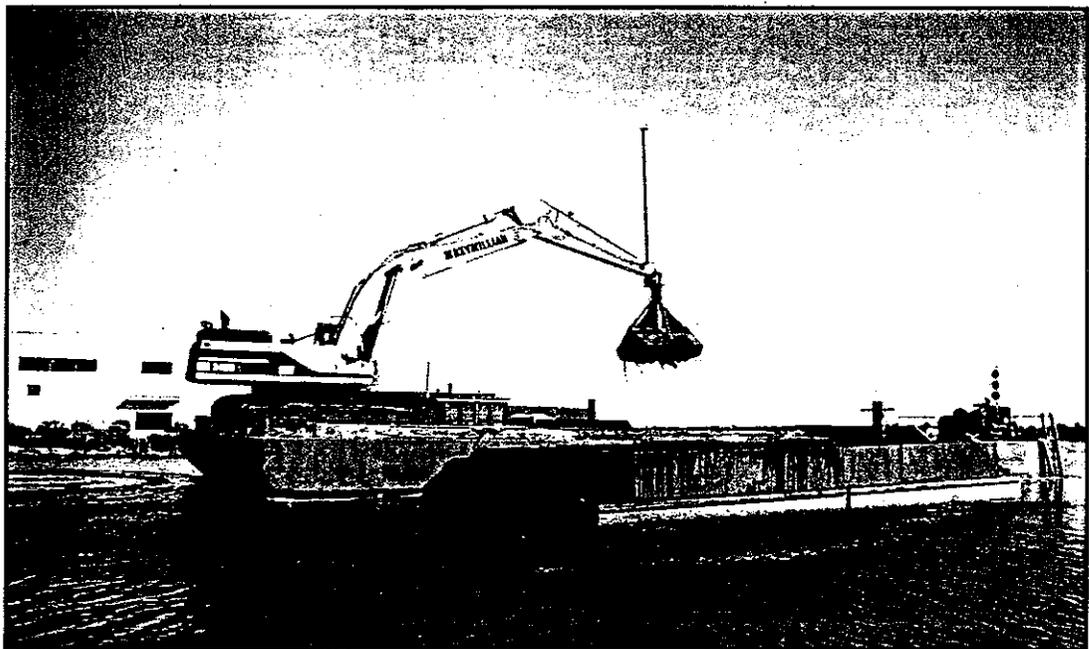




Figure 4. Photographs of North Lobe Dredging



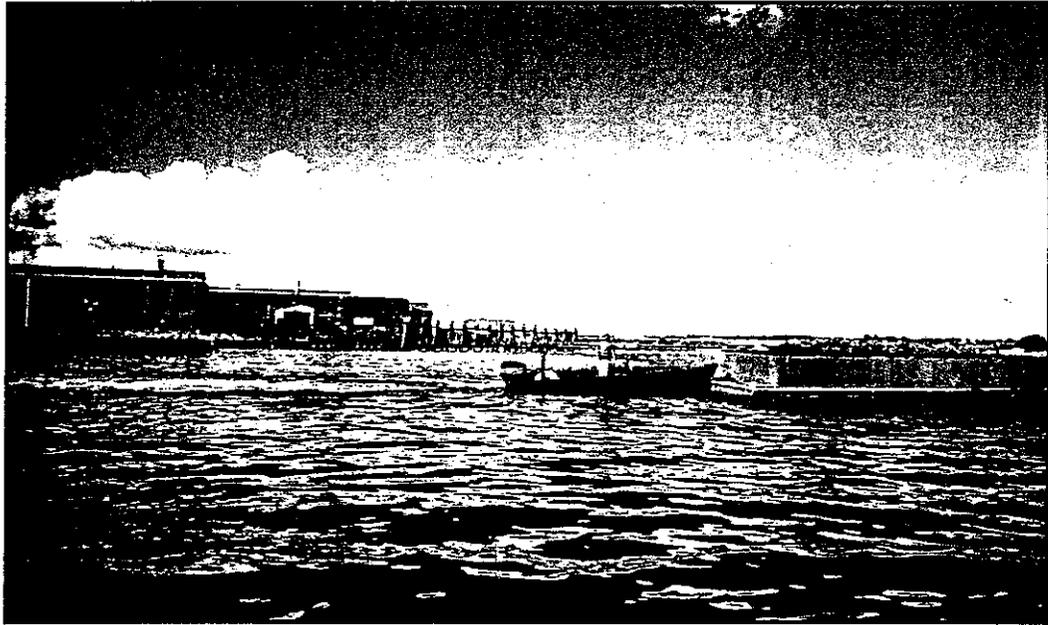
Excavator dredge working at Area D



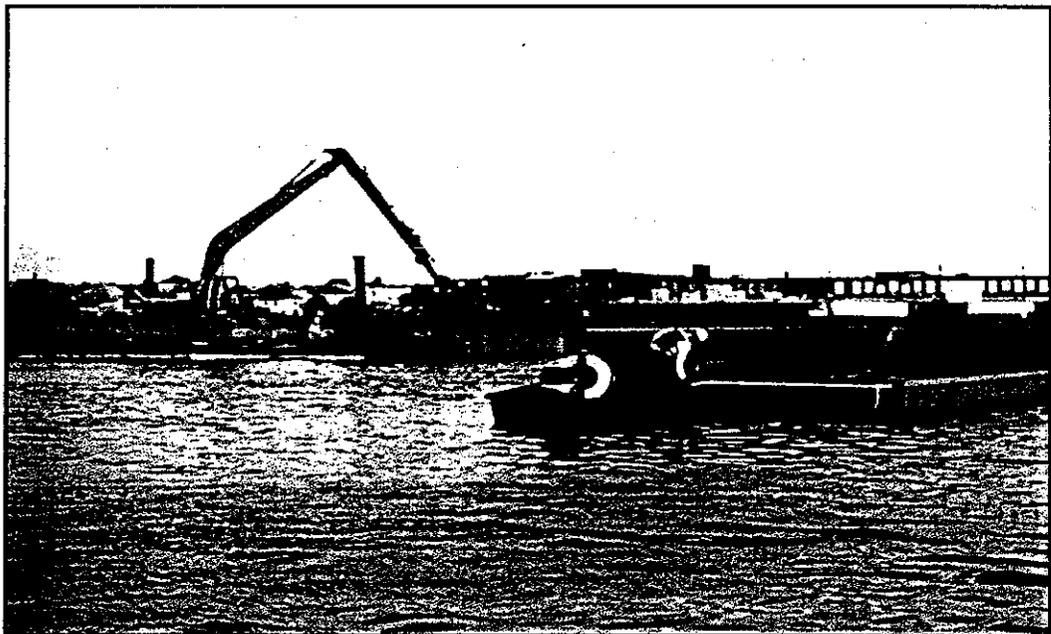
Dredged material transferred to hopper barge



Figure 5. Photographs of Dredging Material Transfer to Sawyer Street Facility



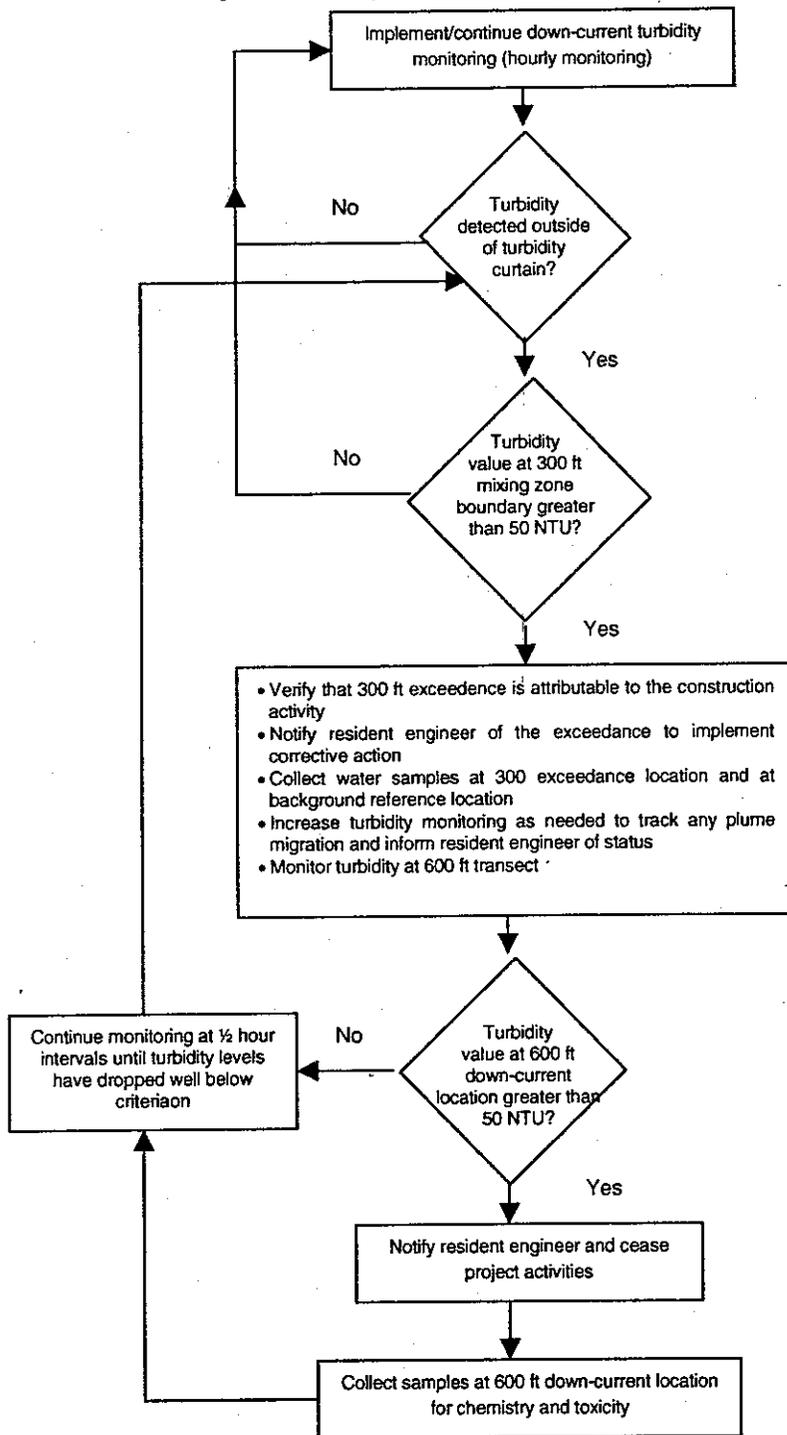
Hopper barge pushed from North Lobe to Upper Harbor



Dredge material offloaded at Sawyer Street Facility



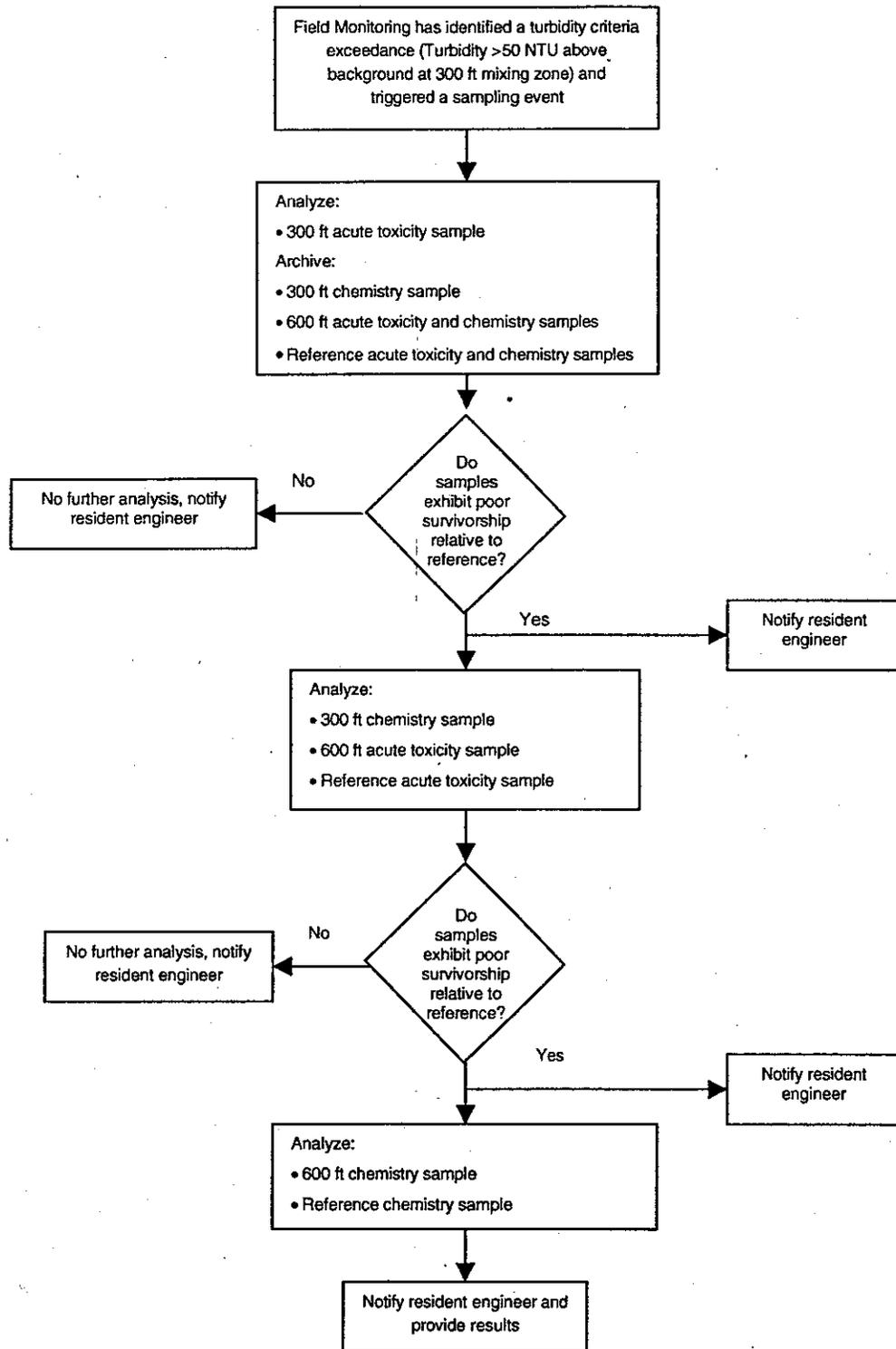
Figure 6. Water Quality Monitoring Decision Sequence



Notes

- 1: 50 NTU value is defined as 50 NTU above the background turbidity level
- 2: The presence and extent of any visible oil sheen emanating from project area, even though project turbidity limits have not been exceeded should be brought to the attention of resident engineer, and a surface grab sample shall be collected for potential analysis.

Figure 7. Analytical Protocol Decision Sequence





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APPENDIX A

Water Quality Monitoring Scope of Work

Scope of Work Modification
Water Quality Monitoring during Construction Activities at Area D
New Bedford Harbor Superfund Site
24 July 2003

I. Background

This Scope of Work modifies the existing Woods Hole Group Task Order No. 0001-001 (Mod) under contract DACW33-02-D-0006 entitled Water Quality Monitoring during Construction Activities at Area D, New Bedford Harbor Superfund Site dated 30 July 2002. The purpose of this modification is to focus monitoring efforts and redirect residual funding from the Area D effort and apply it to the environmental dredging at the North Lobe (NLD) adjacent to Area D scheduled to occur mid-August of 2003. Although the NLD effort was included in the original SOW, the experience gained during Area D monitoring allows for a refining of this upcoming monitoring effort. These revisions are incorporated into this SOW modification.

Based on historic and current chemical data, the sediments within the North Lobe Area contain elevated levels of PCBs and metals, which can potentially have negative environmental impacts if released to the water column in an uncontrolled manner. As in previous monitoring efforts the water quality monitoring program for the NLD includes comprehensive Contractor-based monitoring on behalf of the Government at varying levels of intensity during the course of the project. This SOW outlines the water quality monitoring approach to be implemented by Water Quality Monitoring Contractor Woods Hole Group and their Sub-Contractors (WHG) on behalf of the Government. The overall goal of the monitoring program is to ensure that the dredging operation is carried out in a manner such that;

- The disturbance of the contaminated sediments does not result in any acute impact to organisms within the water column adjacent to the construction.
- There is not significant transport and deposition of sediments and their associated contaminants outside the project area to uncontaminated areas.

II. Government Monitoring:

This SOW summarizes the Government Water Quality Monitoring Program to be implemented by WHG. This program includes field based monitoring efforts over the duration of the construction consisting of real-time turbidity measurements in and around the dredging areas with the likely potential for water column sampling and analysis including toxicity testing and water column chemistry.

III. Construction Overview of the North Lobe Environmental Dredging

The following summary provides an overview of the dredging and support activities that will take place as part of the NLD that will require monitoring under this SOW. The intensity and duration of the monitoring will be determined based on periodic construction coordination meetings to be held as necessary to ensure adequate planning and scheduling of the monitoring effort.

As part of the Area D site preparation, the Packer lease facilities (bulkhead and dock loading area) will be relocated to the North Lobe property off of Herman Melville Boulevard. Refer to Figure 1-1 for aerial photo showing existing site conditions. As a result of this move, an extension of the existing navigation channel to the North Lobe location and construction of a bulkhead will be required. Prior to performing this work, a dredging contractor will remove approximately 7,000 CY of contaminated materials (Sediments with PCB levels equal to or greater than 50 ppm) from the footprint of these areas, and areas adjacent to the MacLean property immediately north of the North Lobe. Refer to Attachment 1 for the locations of these Areas. The dredging sequence of these areas will be discussed at the pre-construction meeting to be attended by WHG. The water depths range from shoreline to approximately 10 feet Mean Lower Low Water (MLLW), and dredge cut depths range from approximately 1.5 feet to 5.5 feet below the mudline surface. The dredge material will be loaded onto scows and transported to the Sawyer Street Facility north of the Coggeshall Street Bridge for offloading.

For the environmental dredging component there are ten areas to be dredged (Refer to Attachment 1). Dredging will be performed using an environmental bucket unless deemed impractical due to debris or other operational constraints. Due to the limited dredging duration in each area, silt curtains will not be deployed unless the water quality monitoring indicates unacceptable environmental impacts are occurring within the water column during operations. Dredging operations are expected to commence mid-August 2003 and be completed by 30 September 2003.

III. Specifics of the Government Water Quality Monitoring Program

A. Monitoring Approach:

A tiered monitoring approach will be used to identify any water quality impacts resulting from environmental dredging activities. The purpose of this monitoring is to confirm that acute impacts to the water column do not extend beyond the designated mixing zone established for each of the dredge areas of the project and to confirm that contaminants are not transported away from the operations area at unacceptable levels to other portions of the harbor. The overall approach will consist of monitoring water column turbidity along transects at the downstream edge of established mixing zones for each of the individual dredging areas. An upper level turbidity criteria exceedance threshold will require notification of appropriate Government personnel and may trigger additional acute toxicity testing and chemical analysis of the water column to quantify

impacts. Additional toxicity testing may be required at the start of dredging in some areas to identify near-field impacts.

B. Method:

Boat-based monitoring shall be performed at varying time intervals during dredging and the transport of dredged material to the Sawyer Street facility. During the established monitoring days, sampling efforts will focus on the measurement of water column turbidity along the downstream edge of the established mixing zone designated as 300 ft downcurrent of project operations (the area currently being dredged). Turbidity monitoring shall be performed using an optical backscatter (OBS) nephelometer with an underwater sensor and direct surface readout or other instrumentation having similar capabilities. The OBS sensor unit shall be sensitive over an approximate operating range of 0-1000 NTU and factory calibrated. Accurate operation of the unit shall be checked on a daily basis using known standards. Water column sampling equipment shall be capable of retrieving water from a specified depth using techniques that have been demonstrated acceptable for low detection limit analysis.

Additional near field and far field monitoring at varying distances away from the construction activity (in addition to the downfield transect) will be performed on each monitoring day to better characterize the aerial extent of any potential near and far-field water column effects. The USACE Technical Manager and Resident Engineer shall be notified immediately if turbidity measurements indicate exceedance of the set criteria along the established transect at the downstream edge of the mixing zone (see item E below).

For the purposes of cost estimation for this scope of work, it should be assumed that there will be a maximum of 25 boat-based monitoring days over the course of the 7-week project. A schedule of construction activities and associated monitoring will be determined based on periodic pre- and on-going construction coordination meetings to be held as necessary to allow for adequate scheduling and planning of the monitoring effort.

C. Monitoring Coordination

WHG shall ensure that adequate coordination with the on-site USACE Project Engineer or his representative occurs so that boat-based monitoring activities can be scheduled to coincide with weekly construction schedules. The WHG monitoring contractor representative (on-site field coordinator) shall obtain daily verbal briefings from the USACE Project Engineer (or his representative) and update the USACE Technical/Contract Manager, WHG Project Managers and Technical Lead as necessary to determine monitoring requirements for upcoming activities. A regular schedule of weekly update meetings (1 X per week) shall be established by WHG with the USACE Technical Manager, U.S.EPA and WHG personnel including the Sr. Projects Manager and Technical Lead to review the previous weeks activities, monitoring results and to plan for upcoming monitoring efforts.

D. Additional and Contingency Testing

Additional Testing

Water sampling will be performed to characterize certain baseline conditions, to assess near-field conditions and possibly in response to an exceedence of the turbidity criterion or other environmental factor(s). The upper level turbidity criterion, defined as a "reportable event", will be 50 Nephelometric Turbidity Units (NTUs) above background as measured along the down-field edge of the 300-ft mixing zone at each dredge area. Additional monitoring and the sampling required by a criteria exceedance are outlined below.

E. Criteria Exceedances

When the monitoring reveals that the upper-level criterion has been exceeded at the edge of the 300 ft mixing zone, additional background and near field measurements shall be performed as needed to determine if the elevated turbidity is attributed to project activities. Also, an additional transect shall be run 600 feet downstream of the project activity to assess far-field impact. If the turbidity appears to be project-based, WHG on-site field coordinator shall immediately notify the USACE Resident Engineer and the USACE Technical Manager (or their designated representatives) so that corrective actions can be employed to alleviate the condition. If exceedances are noted at both downstream transects (300- and 600-foot), project activities will cease until conditions have abated to acceptable levels at the 300 ft transect. If the criterion has been exceeded at only the downstream edge of the 300-foot mixing zone, corrective actions will be employed as deemed appropriate by the USCAE Construction Engineer. Actions may include either altering or slowing the rate of dredging or ceasing project activities until turbidity levels have fallen to within an acceptable range. These criteria may be altered based upon the results of the toxicity testing outlined below.

In addition, when a criterion is exceeded, WHG shall collect "conditional" water samples along the edge of either one or both of the downstream monitoring transect(s). After consultation with the Government, biological and chemical testing may be performed on a composite water sample collected along the downstream edge of the mixing zone(s) within the boundaries of an observable plume. Toxicity testing and/or chemical analysis shall be initiated immediately upon notification to proceed by the USEPA/USACE project representatives. Monitoring of turbidity shall then proceed continuously to track the return to background conditions. Upon the resumption of project activities, monitoring will continue at an increased frequency (30-minute cycle) until conditions abate and to track turbidity changes and monitor for further exceedances.

Chemical and Biological Testing

Upon notice to proceed with either the biological or chemical testing as a result of a criteria exceedance, water samples shall be transported to the testing facility(s). If

notice to proceed is only given for the biological testing, the water samples collected for the chemical analysis shall be appropriately archived for potential future analysis. Biological testing includes acute toxicity tests using the 1-hour sea urchin sperm fertilization test (*Arbacia* sp.) and the 48-hour Mysid shrimp (*Mysidopsis bahia*) survival test. Biological testing of the associated background sample and chemical analysis of all samples will generally be contingent upon the results of the toxicity testing. Samples, which do not exhibit toxicity, will generally not require further testing/analysis. However, poor survivorship in either toxicity test may require further analytical testing to identify the cause of toxicity. This analysis will include total suspended solids (TSS), total PCBs (based on the 18 NOAA Status and Trends congeners), dissolved Copper and dissolved Zinc.

For this proposal, it should be assumed that there would be 10 samples submitted for biological toxicity testing and 5 samples submitted for chemical analyses (TSS, dissolved PCBs, dissolved Copper and dissolved Zinc). Additional sampling may be performed based on the turbidity monitoring, triggered when turbidity criteria have been approached or exceeded or based on other environmental factors as directed by the USEPA/USACE. Any "conditional samples" collected would potentially undergo the tiered testing/analytical approach outlined above. A schedule of the planned construction sequence and associated monitoring/sampling will be determined prior to the start of the work.

IV. Laboratory Schedule

Any samples submitted for laboratory chemical analysis will require a turnaround time of 72 -hours. Results from toxicity testing shall be made available verbally at the earliest possible time, hard copies within 1 -week, and written reports submitted within two weeks.

V. Reporting

A summary sheet of field operations and turbidity measurements and a list of any samples collected will be provided to the USACE Technical Manager on a daily basis following each monitoring event. The Contractor shall develop a daily reporting sheet for this project. The daily submittal for each day of boat-based monitoring shall provide the following information:

- (1) Date, time and location of any dredging activity and the names of sampling team members and team leader.
- (2) A plan-view of the harbor and construction site, which allows for the recording of visual events such as plumes or oil sheens. This map will be included with the daily reporting sheet and graphically present the range of turbidity values recorded during each monitoring day along the transect.
- (4) A summary of weather conditions, and the timing of the tides.

- (5) A comments section to allow field personnel to record visual observations or relevant field activities that may have impacted water quality (i.e. rain events), which may assist in data interpretation.

Update reports summarizing the monitoring that has taken place and any associated issues shall be prepared on a weekly basis. These reports will be distributed by email to U.S.EPA and USACE representatives. An aerial photograph (arc view) of the dredging areas and associated 300 ft downfield transects shall be provided with the reports.

VI. Project Meetings and Coordination

WHG should assume the following meetings as part of the monitoring program:

- Two pre-construction coordination meetings at the onset of the project (in New Bedford) to review construction approaches and schedules and to discuss initial monitoring approaches. This meeting shall be attended by a Sr. Project Manager, Project Manager, Technical Lead and on-site coordinator.
- Eight Construction coordination meetings (in New Bedford) to be attended by the WHG on-site field coordinator. It should be assumed that 5 of these meetings will occur on those days that monitoring will take place and that attendance at these meetings can be assumed to be part of the field based monitoring role described above.
- Two project status meetings (in New Bedford) to be attended by the same personnel as the pre-construction meetings to review data resolve issues and modify monitoring approaches if needed.

VII. Deliverables

WHG shall provide the USACE with a summary report of the monitoring results within two months of completion of the monitoring program. The report shall include an Executive Summary and other sections discussing monitoring methods, field observations during dredging, project photos and associated analytical and toxicity data. A conclusions section shall also be included which discusses the overall impacts of project related operations on the water quality of the harbor and the overall effectiveness of the monitoring approach in limiting operational impacts. The deliverable shall include three hard copies and three CDs.

VIII. Cost Proposal

The Contractor shall submit their cost estimate breaking out "base costs" for the work outlined above. Categories for the base cost should follow the outline of this scope of work and include, (a) Field monitoring, (c) Chemical and biological testing (d) Reporting

and report generation (e) Meetings and Coordination. Also, the following options should be broken out in the event that additional testing will be required. These options will be exercised at the discretion of the Government:

- Option A– Individual biological testing for acute toxicity using the sea urchin sperm fertilization test (*Arbacia* sp.) and the Mysid shrimp (*Mysidopsis* sp.).
- Option B– Individual chemical analysis of water samples for PCB (dissolved), metals (total and dissolved), TSS, and turbidity.
- Boat Based Monitoring Day

IX. Period of Service

The period of service for this Statement of Work shall run through 1 December 2003.

X. Attendance at Meetings

The Contract Manager shall advise the Contractor at least two days prior to each meeting at which the Contractor's presence is requested.

XI. Government Points of Contact

Mr. Jay Mackay (978) 318-8142 is the USACE Environmental Contract Manager/Technical Manager and can be contacted to arrange any meetings, teleconferences or answer questions relative to this task order. Mr. Chris Turek is the USACE Construction Engineer. Dr. William Nelson is the USEPA Technical Contact located at the Office of Research and Development, National Health and Ecological Effects Research Laboratory in Narragansett, Rhode Island. Mr. Gary Morin is the USACE Project Manager.

XII. Invoices

The Contractor shall submit monthly invoices that include progress for the billing period, project activity for the next period, outstanding issues, financial status and schedule. Invoices shall reference the Contract Number and Task Order number. The Contractor shall be responsible for the accuracy of the invoices. Incorrect invoices may be returned for correction.

XIII. Proposals

The cost proposal submitted by the Contractor in response to this scope of work shall indicate separately the supplies/services cost estimate for each separate task described in the scope of work including project management.

XIV. Quality Control

The Contractor is responsible for quality control. Quality control must be applied throughout the entire report preparation process. Although the Government technically reviews submissions required by this contract, it is emphasized that the Contractor's work must be prosecuted using proper internal controls and review procedures. The letter of transmittal for each submission shall include a certification that the submission has been subjected to the Contractor's own review and coordination procedures to insure: (a) completeness for each discipline commensurate with the level of effort required for that submission, (b) elimination of conflicts, errors, and omissions, and (c) the overall professional and technical accuracy of the submission. Documents, which are significantly deficient in any of these areas, will be returned for correction and/or upgrading at the Contractors expense prior to Government acceptance. Task Order submission dates will not be extended if a *responsions* of draft material is required for this reason. The Contractor and his associates, if any, shall have the professional competency and technical expertise necessary to accomplish this project in a satisfactory manner.

XV. Conferences

During the progress of the work, the Contractor shall confer with the Contract Manager as necessary to assure timely and accurate reporting and approval of all completed work.

XVI. Release of Data

All data, reports, and materials obtained as a result of this contract shall become the property of the U.S. Government and shall be turned over to the Contracting Officer upon completion of this contract.

XVII. Report Revisions and Corrections

Results of all reviews by NED will be furnished to the Contractor in the form of written comments and marked-up material. The Contractor shall incorporate any written comments into reports or other items within 1 week. Any comments due to errors or inconsistencies in the report on the part of the Contractor shall be made by the Contractor at his own expense. If changes in criteria and/or additions are, in the view of NED, required beyond the original scope of work and services, the Contractor shall be notified in writing by the Contracting Officer and adjustment in the fee will be made to cover the additional work required. Any such additional work executed by the Contractor without the appropriate written notice is undertaken at his own risk.



APPENDIX B

Project Updates

New Bedford Harbor

Water Quality Monitoring For North Lobe Dredging Activities

**Update Report #1
September 2003**

**Submitted To:
Army Corps of Engineers
696 Virginia Road
Concord, MA 01742**



**US Army Corps
of Engineers •
New England District**

Submitted By:

**Woods Hole Group Environmental Laboratories
375 Paramount Drive, Suite 2
Raynham, MA 02767-5154**



**New Bedford Harbor
Water Quality Monitoring
For North Lobe Dredging Activities
Update Report #1**

Period of Performance: 25 August – 19 September 2003

Construction Activities: North Lobe Dredging Activities

Construction Summary:

Week of 25 August 2003. Site preparation. No dredging occurred. Please note that the dredge contractor does not work on Fridays.

Week of 1 September 2003. No work was completed on Monday due to the Labor Day holiday. Dredging of area B began on Tuesday, and was completed on Thursday. Dredging of area D began late Thursday.

Week of 8 September 2003. Dredging of Area D continued throughout the week.

Week of 15 September 2003. Dredging of Area D continued throughout the week.

Government Monitoring: Initial pre-dredge mobilization of the water quality monitoring program occurred on 25 August 2003. Water quality monitoring occurred on 2, 3, 4, 8, 9 and 16 September 2003. Shore-side observation/coordination, occurred on 11 and 15 September (Table 1). Water quality samples were collected on 3 September for toxicity testing at 60 ft down current (near-field/south) and 300 ft downcurrent (compliance transect/south), and 100 ft up-current (north/reference) of dredging activities. The near-field (60 ft south) sample was analyzed for the 1-hour Sea Urchin sperm cell fertilization test (acute) and the other two samples were archived pending near-field sample test results. Results indicated no toxicity for the near-field sample relative to the control. Therefore no further analysis of the additional samples were conducted.

Turbidity at the 300 ft compliance transect ranged from 3-11 NTU (not corrected for background), well below the project specific turbidity criteria 50 NTU above background. Turbidity was generally highest within 50 ft. of dredging activities, with values ranging from 3-75 NTU. Values only exceeded 21 NTU on one monitoring day at the 50 ft transect. During the week of 1 September, a large oil sheen was noted on the Harbor. Based on visual observations, it was concluded that this was a result of salvage operations of a fishing vessel which had recently sunk on 2 September adjacent to the project area. It should be noted that some oil was observed to be associated with the North Lobe dredging operation but generally remained in the immediate area adjacent to the dredge barge. Dredging of debris was noted while monitoring on 8 and 9 September but did not appear to significantly affect turbidity readings.

Monitoring during the transit of scows within the Acushnet River to the Sawyer St processing facility resulted in turbidity readings ranging from 4-218 NTU. These readings were taken directly in the push boat prop-wash as it positioned the loaded scows along the off-loading barge. Readings were greater than 51 NTU only once in the five events monitored. The turbidity was confined to the project area with readings dropping to less than 10 NTU approximately 150 ft from the operations.

Turbidity associated with the dewatering of dredge material from the scow was generally higher when the discharge outfall was located at the water surface. Turbidity readings of 37 NTU were noted to a depth of 4 ft within a plume. The signal decreased to background within 20 ft of the discharge. After the discharge pipe was lowered to approximately 4 feet below the surface, little if any turbidity signal was detected. A

turbidity signal was also noted during the barge bilge water pump discharge. Turbidity was elevated to 21 NTU at 20 ft from discharge. This turbidity was likely related to rust in the discharge water.

Schedule: Week of 22 September 2003 – Dredging activities continued in Area D. Dredging at Area D will continue for approximately 2 more weeks. WHG/ENSR will resume monitoring activities on 22 September.

Attachments:

Attachments: Daily log of activities associated with North Lobe Dredging Operations.

Please contact the individuals listed below with any questions or comments.

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Environmental Contract Manager
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Maura Surprenant
Woods Hole Group Environmental Laboratories
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e-mail: msurprenant@whgrp.com

Table 1 - Daily Field Sheet North Lobe Dredging, New Bedford Harbor

Date	Construction Activity	Tide (Ebb or Flood)	ENSR Monitoring					Notes:
			Oversight Day	Background Turbidity (NTU)	Turbidity Range (NTU)	Turbidity Exceedance (Yes/No)	Samples collected	
25-Aug-03 Mon	Site Prep.	Ebb		5-6		No	No	Dredging has not begun, WQ mob day
26-Aug-03 Tue	No Dredging, Site Prep.							
27-Aug-03 Wed	No Dredging, Site Prep.							
28-Aug-03 Thu	No Dredging, Site Prep.							Dredge has Issues with navigational software. ENSR on-site but no monitoring conducted
29-Aug-03 Fri	No Work							
1-Sep-03 Mon	Holiday, No Work							
2-Sep-03 Tue	Dredging in cell B begins			4-6	3-43	No	No	Highest turbidity taken during transect 50ft south of dredging. At 300ft compliance point turbidity ranged from 3-25 NTU. Extensive oil sheen noted on harbor, most likely associated with sunken fishing vessel
3-Sep-03 Wed	Dredging in cell B continues			3-4	2-16	No	3	Highest turbidity taken at 50 ft transect (3-16 NTU). Turbidity at 300ft compliance point 3-11 NTU. Oil sheen associated with sunken vessel still visible. Observed dewatering of dredge material but did not detect elevated turbidity during this operation.

Date	Construction Activity	Tide (Ebb or Flood)	ENSR Monitoring					Notes:
			Oversight Day	Background Turbidity (NTU)	Turbidity Range (NTU)	Turbidity Exceedance (Yes/No)	Samples collected	
4-Sep-03 Thu	Completed dredging of area B and moved dredge to area D. Began dredging in area D. Pushed a loaded scow up to Sawyer St.			4-6	4-75	No	No	Highest turbidity noted at 50 ft transect (4-75 NTU). Turbidity at 300 ft compliance point was 4-9 NTU. Some oil sheen associated with dredging operations was noted. Turbidity at dewatering discharge up to 37 NTU, decreased to background levels within 20 ft. Turbidity associated with positioning of scow at Sawyer St up to 218 NTU. Dropped to 5 NTU 100 ft from scow.
5-Sep-03 Fri	No Work							
8-Sep-03 Mon	Dredging of area D continued. A loaded scow was moved to Sawyer St. Dredge bucket cracked during dredging and was repaired in afternoon.			4	3-15	No	No	Dewatering of dredge material was observed. No turbidity elevations detected.
9-Sep-03 Tue	Dredging of area D continued. Two loaded scows were moved to Sawyer St.			3-5	2-13	No	No	Moved dewatering discharge to approx. 3 ft below surface; highest reading was 8 NTU at approx. 4 ft below surface. Discharge from dredge barge bilge up to 21 NTU probably due to rust in discharge. Turbidity associated with positioning scow at Sawyer St. at low tide was up to 51 NTU, dropped to 5 NTU 150 ft from scow.
10-Sep-03 Wed	Continued dredging area D							

Date	Construction Activity	Tide (Ebb or Flood)	ENSR Monitoring					Notes:
			Oversight Day	Background Turbidity (NTU)	Turbidity Range (NTU)	Turbidity Exceedance (Yes/No)	Samples collected	
11-Sep-03 Thu	Continued dredging area D		x					Noted that a scow moved up to Sawyer St at low tide grounded approx. 20 ft from discharge point. Suggested that scow be allowed to clear itself as the tide rose.
12-Sep-03 Fri	No Work							
15-Sep-03 Mon	Continued dredging area D		x					Minimal dredging occurred in the afternoon. Dredge bucket was sent out for repair on Friday and had not arrived on-site until late in the day.
16-Sep-03 Tue	Continued dredging in area D. Loaded scows were pushed to Sawyer St.			4	1-21	No	No	Dredge added a second pump and discharge pipe to dewater dredge material. Turbidity 50-100ft from loaded scow and push boat in shallows near Sawyer St. ranged from 4-20 NTU. Turbidity associated with dredging appears to be highest in areas directly adjacent to waters passed over by excavator arm and bucket. Most likely due to spillage of material from dredge bucket into this area.
17-Sep-03 Wed	Continued dredging area D							Debris appears to be more wood than steel. Prior debris more steel
18-Sep-03 Thu	Continued dredging area D							
19-Sep-03 Fri	No Work							

New Bedford Harbor

Water Quality Monitoring For North Lobe Dredging Activities

**Update Report #2
October 2003**

**Submitted To:
Army Corps of Engineers
696 Virginia Road
Concord, MA 01742**



**US Army Corps
of Engineers
New England District**

Submitted By:

**Woods Hole Group Environmental Laboratories
375 Paramount Drive, Suite 2
Raynham, MA 02767-5154**



**New Bedford Harbor
Water Quality Monitoring
For North Lobe Dredging Activities
Update Report #2**

Period of Performance: 22 September – 17 October 2003

Construction Activities: North Lobe Dredging Activities

Construction Summary:

Week of 22 September 2003. Dredging of Area D continued throughout the week.

Week of 29 September 2003. Dredging of Area D was completed on Wednesday, and dredging of Area C began. A shore-based excavator completed shoreline dredging associated with Area D on Monday in approximately 1 hour.

Week of 6 October 2003. Dredging of Area C was suspended on Wednesday due to shallow water along northern edge. Dredging of Area A was initiated.

Week of 13 October 2003. Dredging of Area A and C were completed.

Government Monitoring: Water quality monitoring occurred on 22, 24, and 29 September, and 1, 6, 8, and 14 October 2003 (Table 1). Water quality samples were collected on 22 and 29 September, and 8 October.

Water quality samples were collected on 22 September for toxicity testing 10 ft from the dredge bucket (near-field), 300 ft downcurrent (compliance transect/north), and 1,000 ft upcurrent (reference/south). Turbidity recorded during collection of the near-field sample (10 ft) ranged from 20 to 92 NTU. The near-field (10 ft) sample was analyzed for the 1.3-hour Sea Urchin sperm cell fertilization test (acute), and the other two samples were archived pending near-field sample test results. Results indicated no toxicity for the near-field sample relative to the control. Therefore, no further analysis of the additional samples were conducted.

Water quality samples were also collected on 29 September for toxicity testing at 50 ft downcurrent (near-field/south), 300 ft downcurrent (compliance transect/south), and 1,000 ft upcurrent (reference/north). As was conducted on 22 September, the nearfield sample (50 ft downcurrent) was tested using the 1.3-hour Sea Urchin sperm cell fertilization test (acute), and the other two samples were archived pending the results of the near-field sample. Turbidity recorded during collection of the near-field sample (50 ft) ranged from approximately 20 to 29 NTU. Results indicated no toxicity for the near-field sample relative to the control. Therefore, no further analyses of the archived samples were conducted.

On 8 October two water quality samples were collected for toxicity testing at 10 ft downcurrent (near-field/south), and 1,000 ft upcurrent (reference/north). Turbidity recorded during collection of the near-field sample (10 ft) ranged from 30 to 40 NTU. The nearfield sample was analyzed for acute toxicity (Sea Urchin fertilization test), and the reference sample was archived. Results indicated no toxicity for the near-field sample relative to the control. No further analysis of the reference sample was conducted.

Turbidity at the 300 ft compliance transect ranged from 2-17 NTU (not corrected for background) during all monitoring periods except 14 October, 2003, when turbidity ranged from 2-26 NTU at the 300 ft compliance transect. Turbidity extending to the 300 ft south compliance transect was observed for approximately 1 hour as dredging was completed in Area A. Turbidity was generally highest within 100 ft

of dredging activities, with values recorded up to 92 NTU. Turbidity values within 100 ft of dredging activities exceeded 40 NTU on only two of the seven monitoring days.

An oil sheen was observed on the Harbor surface in the vicinity of dredging operations on 24 September and 14 October. On 29 September an oil sheen, oil droplets, and debris consisting of small particles and pieces of the absorbent oil boom were observed throughout the day at distances up to, and beyond the 300 ft compliance transect. Similar material was observed on 1 October both at the North Lobe dredging site, and at Sawyer Street. On 1 October, similar material was observed at the North Lobe dredge site. Shoreline dredging associated with Area D was completed on 29 September by a shore-based excavator. This dredging was completed in approximately 1 hour and was not observed to affect turbidity.

Monitoring the transit of scows from the North Lobe dredge site to the Sawyer Street sediment processing facility resulted in turbidity readings ranging from 3-134 NTU. Highest readings at Sawyer Street were obtained directly in the areas affected by the push boat prop wash as it transited the shallow areas within approximately 1,000 ft of the sediment transfer site at low tide. Elevated turbidity was localized (confined to the project area), and of short duration.

Turbidity near the dredge material dewatering pump outfall at the scow was generally elevated over surrounding areas but localized in extent. Ballast water discharge from the dredge barge on 24 September was observed to be more turbid than previously observed. Turbidity in the discharge plume ranged from 8-32 NTU on 24 September.

Schedule: Week of 20 October 2003 – Initial dredging activities were completed on 14 October with the completion of Areas A and C. Further potential dredging activities are pending the completion of a bathymetric survey, and the results of confirmatory sediment samples taken in the dredged areas. WHG/ENSR will schedule additional monitoring activity should conditions warrant.

Attachments:

Attachments: Daily log of activities associated with North Lobe Dredging Operations.

Please contact the individuals listed below with any questions or comments.

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Woods Hole Group Environmental Laboratories
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Table 1 - Daily Field Sheet North Lobe Dredging, New Bedford Harbor

Date	Construction Activity	Tide (Ebb or Flood)	ENSR Monitoring					Notes:
			Oversight Day	Background Turbidity (NTU)	Turbidity Range 50-300 ft from Dredging Activities (NTU)	Turbidity Exceedance (Yes/No)	Samples collected	
22-Sep-03 Mon	Continued dredging in Area D. Several trips of scow to Sawyer St. were completed.			4-5	0-92	No	Yes	Turbidity at 300 ft compliance point from 2-14 NTU. Highest turbidity recorded 10-25 ft from dredge. Sample collected for 1 hour Arbacia toxicity. Substantial wire debris in dredge material.
23-Sep-03 Tue	Continued dredging in Area D.							No Monitoring
24-Sep-03 Wed	Continued dredging in Area D. Several trips of scow to Sawyer St. were completed.			4-5	0-26	No	No	Turbidity during scow transfer activities approx. 1 hr after low tide ranged from 5-134 NTU within 50 ft of scow and push boat. Turbidity probably associated with plume from push boat prop. Values decreased to less than 20 NTU within 15 minutes. Turbidity associated with dewatering of sediment ranged from 1-20 NTU. Turbidity associated with barge ballast water discharged ranged from 8-32 NTU and oil was observed on the Harbor surface near dredge ops.
25-Sep-03 Thu	Continued dredging in Area D.							No Monitoring
26-Sep-03 Fri	No Work							No Monitoring

Date	Construction Activity	Tide (Ebb or Flood)	ENSR Monitoring					Notes:
			Oversight Day	Background Turbidity (NTU)	Turbidity Range 50-300 ft from Dredging Activities (NTU)	Turbidity Exceedance (Yes/No)	Samples collected	
29-Sep-03 Mon	Continued dredging in Area D. Several trips of scow to Sawyer St. were completed. Shoreline dredge by a shore-based excavator occurred for 1 hr in the morning			4-7	2-52	No	Yes	Shoreline dredging was just completed as monitoring was initiated. No turbidity issues associated with shoreline dredging were apparent. Oil droplets, surface sheen and debris were noted throughout area. Sample collected 50 ft from dredging activities. Elevated turbidity was observed during Sawyer St. transfer activities but was short in duration and in limited area.
30-Sep-03 Tue	Continued dredging in Area D.							No Monitoring
1-Oct-03 Wed	Completed dredging of area D and began dredging in area C			3-4	4-30	No	No	Turbidity was noted to increase up to 30 NTU near location of dewatering pump discharge. Oil sheen, a brown film and small pieces of absorbent boom material were noted at Area D and Sawyer St sites. Turbidity from 5-36 NTU was observed behind the scow at Sawyer St. Values decreased to 5-14 NTU within one minute. Dredge bucket cracked in the afternoon and repairs took the remainder of the day.
2-Oct-03 Thu	Continued dredging in Area C							No Monitoring
3-Oct-03 Fri	No Work							No Monitoring

Date	Construction Activity	Tide (Ebb or Flood)	ENSR Monitoring					Notes:
			Oversight Day	Background Turbidity (NTU)	Turbidity Range 50-300 ft from Dredging Activities (NTU)	Turbidity Exceedance (Yes/No)	Samples collected	
6-Oct-03 Mon	Dredging of Area C continued and several trips of scow to Sawyer St were observed			3-5	4-32	No	No	Oil sheen, boom absorbent material and debris were present on surface of Harbor. High levels of turbidity from prop wash of scow push boat were observed at low tide. Scow became grounded at low tide and was allowed to refloat as tide flooded. Higher levels of turbidity (12-17 NTU) were noted at 300 ft point along the shore, probably due to shoreline sediment resuspension.
7-Oct-03 Tue	Continued dredging in Area C							No Monitoring
8-Oct-03 Wed	Dredging in Area C was suspended and dredging began in Area A. Several trips of the scow to Sawyer St. were observed			4-5	4-34	No	Yes	Sample collected approx. 10 ft from dredge in an area affected by both the dredging and the dewatering discharge pump. Turbidity ranged from 30-63 NTU at this location. Turbidity recorded during scow transfer 2 hrs after low tide ranged from 3-86 NTU, decreasing to 4-29 NTU within 10 minutes. No oil sheen was observed on the Harbor surface.
9-Oct-03 Thu	Dredging continued in Area A							No Monitoring
10-Oct-03 Fri	No Work							No Monitoring
13-Oct-03 Mon	No Work-Columbus Day							No Monitoring

Date	Construction Activity	Tide (Ebb or Flood)	ENSR Monitoring					Notes:
			Oversight Day	Background Turbidity (NTU)	Turbidity Range 50-300 ft from Dredging Activities (NTU)	Turbidity Exceedance (Yes/No)	Samples collected	
14-Oct-03	Tue	Dredging was completed in Area A. A small section of Area C that remained was dredged. Initial project dredging completed pending survey.		1-5	0-40	No	No	Two small surface oil slicks were observed at 150 and 300 ft south of dredging activities. Turbidity related to scow movements near dredging activities up to 29 NTU.
15-Oct-03	Wed	No on-water work						No Monitoring
16-Oct-03	Thu	Survey, No on-water work						No Monitoring
17-Oct-03	Fri	No Work						No Monitoring

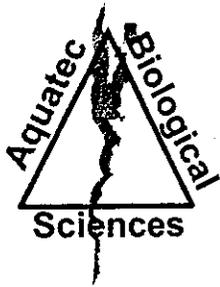


US Army Corps
of Engineers
New England District



APPENDIX C

Water Quality Monitoring Data



Aquatec Biological Sciences

 Ecology

 Environmental Toxicology

 Natural Resource Assessments

 Microbiology

Toxicity Summary Report

Woods Hole Analytical Laboratory
375 Paramount Drive

Raynham, MA 02767

Date: 9/4/2003

Project: 03040

SDG 7331

Site: North Lobe

Method: 1008.0

Species: *Arbacia punctulata*

Sample ID	Sample Name	Mean Fertilization (%)
025490	NBH-60	99.6
025493	Seawater	100.0

* Indicates a statistically significant reduction ($P < 0.05$) in the response relative to the corresponding response in the reference sample.

Toxicity Summary Report

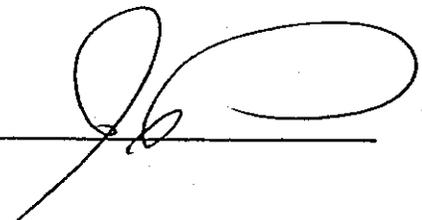
Woods Hole Analytical Laboratory
375 Paramount Drive
Raynham, MA 02767

Date: 9/4/2003
Project: 03040
SDG 7331
Site: North Lobe

Samples Received

Number	Sample Name	Date Time and Collecte		Type
025490	NBH-60	9/3/2003	3:16:00 PM	Water
025491	NBH-300	9/3/2003	3:37:00 PM	Water
025492	NBH-Ref	9/3/2003	3:52:00 PM	Water
025493	Seawater	8/27/2003		Seawater

Submitted By: _____



Toxicity Summary Report

Woods Hole Analytical Laboratory
375 Paramount Drive
Raynham, MA 02767

Date: 9/4/2003
Project: 03040
SDG 7331
Site: North Lobe

Method: 1008.0	Species: <i>Arbacia punctulata</i>							
Sample ID: NBH-60			Replicate Fertilized (%)					Average Fertilized (%)
Laboratory ID: 25490	Conc (%)	Endpoint	A	B	C	D	E	
	100	Fertilization	100	99	100	99	100	99.6

Method: 1008.0	Species: <i>Arbacia punctulata</i>							
Sample ID: Seawater			Replicate Fertilized (%)					Average Fertilized (%)
Laboratory ID: 25493	Conc (%)	Endpoint	A	B	C	D	E	
	100	Fertilization	100	100	100	100	100	100.0

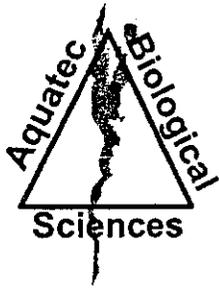
Quality Assurance Report

Woods Hole Analytical Laboratory
375 Paramount Drive
Raynham, MA 02767

Date: 9/4/2003
Project: 03040
SDG: 7331
Site: North Lobe

Qualifiers and Special Conditions

The Standard Reference Toxicant Test resulted in a response that was slightly higher than the control chart limits.



Aquatec Biological Sciences



Ecology



Environmental
Toxicology



Natural Resource
Assessments



Microbiology

Toxicity Summary Report

Woods Hole Analytical Laboratory
375 Paramount Drive
Raynham, MA 02767

Date: 9/25/2003
Project: 03040
SDG: 7398
Site: New Bedford Harbor-
N.Lobe Dredging

Method: 1008.0

Species: *Arbacia punctulata*

Sample ID	Sample Name	Mean Fertilization (%)
025980	50 ft - N	99.6
025984	Seawater	99.8

* Indicates a statistically significant reduction ($P < 0.05$) in the response relative to the corresponding response in the reference sample.

Toxicity Summary Report

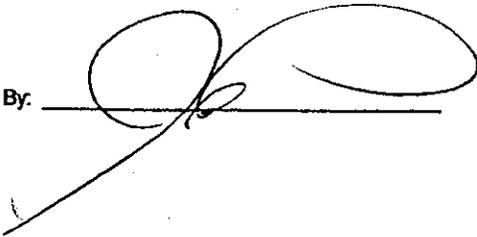
Woods Hole Analytical Laboratory
375 Paramount Drive

Raynham, MA 02767

Date: 9/25/2003
Project: 03040
SDG: 7398
Site: New Bedford Harbor-
N.Lobe Dredging

Samples Received

Number	Sample Name	Date	Time and Collecte	Type
025980	50 ft. - N	9/22/2003	2:10:00 PM	Water
025981	300 ft. - N	9/22/2003	2:24:00 PM	Water
025982	Reference	9/22/2003	2:35:00 PM	Water
025984	Seawater	9/22/2003		Seawater

Submitted By: 

Toxicity Summary Report

Woods Hole Analytical Laboratory
 375 Paramount Drive
 Raynham, MA 02767

Date: 9/25/2003
 Project: 03040
 SDG 7398
 Site: or-N.Lobe Dredging

Method: 1008.0		Species: <i>Arbacia punctulata</i>										
Sample ID: 50 ft. - N		Endpoint					Replicate Fertilized (%)			Average Fertilized (%)		
Laboratory ID: 25980	Conc (%)						A	B	C	D	E	(%)
	100	Fertilization					100	100	100	99	99	99.6

Method: 1008.0		Species: <i>Arbacia punctulata</i>										
Sample ID: Seawater		Endpoint					Replicate Fertilized (%)			Average Fertilized (%)		
Laboratory ID: 25984	Conc (%)						A	B	C	D	E	(%)
	100	Fertilization					100	100	99	100	100	99.8

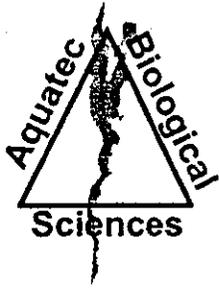
Quality Assurance Report

Woods Hole Analytical Laboratory
375 Paramount Drive
Raynham, MA 02767

Date: 9/25/2003
Project: 03040
SDG 7398
Site: New Bedford
Harbor-N.Lobe

Qualifiers and Special Conditions

Test sample fertilization exceeded 99 percent and was deemed not significantly different from the control by visual observation.



Aquatec Biological Sciences

 Ecology

 Environmental Toxicology

 Natural Resource Assessments

 Microbiology

Toxicity Summary Report

Woods Hole Analytical Laboratory
375 Paramount Drive
Raynham, MA 02767

Date: 10/1/2003
Project: 03040
SDG: 7425
Site: New Bedford Harbor Area D

Method: 1008.0

Species: *Arbacia punctulata*

Sample ID	Sample Name	Mean Fertilization (%)
026030	50 ft.	97.8
026033	Seawater	99.2

* Indicates a statistically significant reduction ($P < 0.05$) in the response relative to the corresponding response in the reference sample.

Toxicity Detail Report

Woods Hole Analytical Laboratory
375 Paramount Drive
Raynham, MA 02767

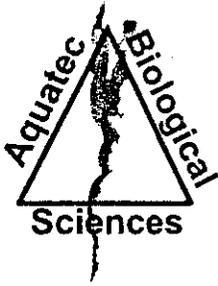
Date: 10/1/2003
Project: 03040
SDG: 7425
Site: New Bedford Harbor Area D

Method: 1008.0 Species: *Arbacia punctulata*
Sample ID: 50 ft.

Laboratory ID: 26030	Conc (%)	Endpoint	Replicate Fertilized (%)					Average Fertilized (%)
			A	B	C	D	E	
	100	Fertilization	98	98	100	96	97	97.8

Method: 1008.0 Species: *Arbacia punctulata*
Sample ID: Seawater

Laboratory ID: 26033	Conc (%)	Endpoint	Replicate Fertilized (%)					Average Fertilized (%)
			A	B	C	D	E	
	100	Fertilization	100	98	100	100	98	99.2



Aquatec Biological Sciences

 Ecology

 Environmental Toxicology

 Natural Resource Assessments

 Microbiology

Toxicity Detail Report

Woods Hole Analytical Laboratory
375 Paramount Drive

Raynham, MA 02767

Date: 10/9/2003

Project: 03040

SDG: 7469

Site: North Lobe Monitoring

Method: 1008.0

Species: *Arbacia punctulata*

Sample ID: 10S

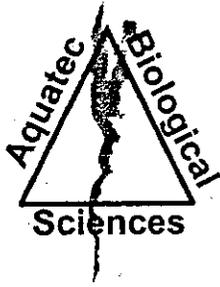
Laboratory ID: 26115	Conc (%)	Endpoint	Replicate Fertilized (%)					Average Fertilized (%)
			A	B	C	D	E	
	100	Fertilization	99	100	100	100	99	99.6

Method: 1008.0

Species: *Arbacia punctulata*

Sample ID: Seawater (control)

Laboratory ID: 26117	Conc (%)	Endpoint	Replicate Fertilized (%)					Average Fertilized (%)
			A	B	C	D	E	
	100	Fertilization	99	100	100	100	99	99.6



Aquatec Biological Sciences

 Ecology

 Environmental Toxicology

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Toxicity Summary Report

Woods Hole Analytical Laboratory
375 Paramount Drive

Raynham, MA 02767

Date: 10/9/2003

Project: 03040

SDG: 7469

Site: North Lobe Monitoring

Method: 1008.0

Species: *Arbacia punctulata*

Sample ID	Sample Name	Mean Fertilization (%)
026115	10S	99.6
026117	Seawater (Control)	99.6

* Indicates a statistically significant reduction ($P < 0.05$) in the response relative to the corresponding response in the reference sample.

Appendix F
North Lobe Dredging Cost Report



TETRA TECH FW, INC.



DETAILED COST REPORT

Period Ending: June 3, 2005

NBH T.O.#24 - Construction

with prompt for Job Number

Page: 1 of 10

FWENC H.O. Support - North Lobe Dredging		Budget	Actuals	Committed	Forecast	Variance	% Var
TASK 01 Mobilization/Demobilization							
Subtask/Activity 03.01 Field Sampling Plan							
10	FW Labor	\$6,405	\$5,126	\$5,126	\$5,126	\$1,279	
15	FW Reimbursables	\$111	\$309	\$309	\$309	(\$199)	
Subtotal 03.01		\$6,515	\$5,434	\$5,434	\$5,435	\$1,080	
Subtask/Activity 03.08 Site Safety & Health Plan							
10	FW Labor	\$1,100	\$0	\$0	\$0	\$1,100	
15	FW Reimbursables	\$17	\$0	\$0	\$0	\$17	
Subtotal 03.08		\$1,117	\$0	\$0	\$0	\$1,117	
Subtask/Activity 03.13 Work Plan							
10	FW Labor	\$44,926	\$47,543	\$47,543	\$47,543	(\$2,617)	
15	FW Reimbursables	\$538	\$1,259	\$1,259	\$1,259	(\$721)	
40	Other Subs	\$0	\$113	\$113	\$113	(\$113)	
Subtotal 03.13		\$45,464	\$48,915	\$48,915	\$48,915	(\$3,451)	
Subtask/Activity 03.15 Transportation and Temp Storage							
10	FW Labor	\$2,200	\$0	\$0	\$0	\$2,200	
15	FW Reimbursables	\$43	\$0	\$0	\$0	\$43	
Subtotal 03.15		\$2,243	\$0	\$0	\$0	\$2,243	
Total for Subtask 03 Submittals/Implementation Plans		\$55,339	\$54,349	\$54,349	\$54,350	\$989	1.79%
TASK TOTAL 01							
TASK 02 Monitoring, Sampling, Testing & Analysis							
Subtask/Activity 03.02 Non Real Time							
30	Team Subs	\$36,265	\$31,520	\$31,520	\$31,520	\$4,745	
40	Other Subs	\$4,520	\$1,800	\$1,800	\$1,800	\$2,720	
Subtotal 03.02		\$40,785	\$33,320	\$33,320	\$33,320	\$7,465	
Total for Subtask 03 Air Monitoring & Sampling		\$40,785	\$33,320	\$33,320	\$33,320	\$7,465	18.30%
Subtask/Activity 06.03 Sediment/Sludge							
10	FW Labor	\$18,058	\$2,874	\$2,874	\$2,874	\$15,184	
15	FW Reimbursables	\$0	\$21	\$21	\$21	(\$21)	



TETRA TECH FW, INC.



DETAILED COST REPORT

Period Ending: June 3, 2005

NBH T.O.#24 - Construction

with prompt for Job Number

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FWENC H.O. Support - North Lobe Dredging

TASK 02 Monitoring, Sampling, Testing & Analysis

Subtask/Activity 06.03 Sediment/Sludge

	Budget	Actuals	Committed	Forecast	Variance	% Var
40 Other Subs	\$24,426	\$17,888	\$17,888	\$17,888	\$6,538	
Subtotal 06.03	\$42,484	\$20,784	\$20,784	\$20,783	\$21,701	51.08%

Total for Subtask 06 Sampling Soil/Sediment

Subtask/Activity 09.07 Sediment Analysis

15 FW Reimbursables	\$0	\$491	\$491	\$491	(\$491)	
30 Team Subs	\$0	\$19,946	\$19,946	\$19,946	(\$19,946)	
40 Other Subs	\$31,880	\$4,550	\$4,550	\$4,550	\$27,330	
Subtotal 09.07	\$31,880	\$24,987	\$24,987	\$24,987	\$6,893	

Total for Subtask 09 Laboratory Chemical Analysis

	\$31,880	\$24,987	\$24,987	\$24,987	\$6,893	21.62%
TASK TOTAL 02	\$115,149	\$79,090	\$79,090	\$79,090	\$36,059	

TASK 13 Physical Treatment

Subtask/Activity 90.01 NL Water Treatment

10 FW Labor	\$0	\$5	\$5	\$5	(\$5)	
25 Equipment	\$10,079	\$8,005	\$8,005	\$8,005	\$2,074	
30 Team Subs	\$6,024	\$0	\$0	\$0	\$6,024	
Subtotal 90.01	\$16,103	\$8,010	\$8,010	\$8,010	\$8,093	

Subtask/Activity 90.02 NL Water Treatment

10 FW Labor	\$2,070	\$1,154	\$1,154	\$1,154	\$916	
15 FW Reimbursables	\$0	\$55	\$55	\$55	(\$55)	
40 Other Subs	\$4,987	\$3,044	\$3,044	\$3,044	\$1,943	
Subtotal 90.02	\$7,057	\$4,254	\$4,254	\$4,253	\$2,804	

Total for Subtask 90 North Lobe Water Testing

	\$23,160	\$12,264	\$12,264	\$12,263	\$10,897	47.05%
TASK TOTAL 13	\$23,160	\$12,264	\$12,264	\$12,263	\$10,897	

TASK 21 Demobilization

Subtask/Activity 06.91 Remedial Action Report

10 FW Labor	\$20,906	\$48,584	\$48,584	\$48,584	(\$27,678)	
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TETRA TECH FW, INC.



DETAILED COST REPORT

Period Ending: June 3, 2005

NBH T.O.#24 - Construction

with prompt for Job Number

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FWENC H.O. Support - North Lobe Dredging

TASK 21 Demobilization

Subtask/Activity 06.91 Remedial Action Report

	Budget	Actuals	Committed	Forecast	Variance	% Var
15 FW Reimbursables	\$511	\$1,763	\$1,763	\$1,763	(\$1,252)	
Subtotal 06.91	\$21,417	\$50,347	\$50,347	\$50,347	(\$28,930)	
Total for Subtask 06 Submittals	\$21,417	\$50,347	\$50,347	\$50,347	(\$28,930)	135.08%
TASK TOTAL 21	\$21,417	\$50,347	\$50,347	\$50,347	(\$28,930)	

TASK 22 General Requirements

Subtask/Activity 03.00 Purchasing/Procurement

10 FW Labor	\$27,927	\$26,761	\$26,761	\$26,761	\$1,166	
15 FW Reimbursables	\$3,812	\$3,056	\$3,056	\$3,056	\$756	
Subtotal 03.00	\$31,739	\$29,817	\$29,817	\$29,817	\$1,922	
Total for Subtask 03 Procurements	\$31,739	\$29,817	\$29,817	\$29,817	\$1,922	6.06%

Subtask/Activity 04.07 Sciences

10 FW Labor	\$32,022	\$29,953	\$29,953	\$29,953	\$2,069	
15 FW Reimbursables	\$716	\$1,141	\$1,141	\$1,141	(\$425)	
40 Other Subs	\$4,068	\$0	\$0	\$0	\$4,068	
Subtotal 04.07	\$36,806	\$31,095	\$31,095	\$31,094	\$5,712	

Subtask/Activity 04.11 Home Office Engineers

10 FW Labor	\$27,225	\$25,630	\$25,630	\$25,630	\$1,595	
15 FW Reimbursables	\$307	\$611	\$611	\$611	(\$304)	
Subtotal 04.11	\$27,532	\$26,241	\$26,241	\$26,241	\$1,291	

Subtask/Activity 04.14 Cost Engineer/Estimator

10 FW Labor	\$23,889	\$27,479	\$27,479	\$27,479	(\$3,590)	
15 FW Reimbursables	\$315	\$209	\$209	\$209	\$106	
Subtotal 04.14	\$24,204	\$27,688	\$27,688	\$27,688	(\$3,484)	

Subtask/Activity 04.24 Quality Control Engineer

10 FW Labor	\$67,272	\$64,331	\$64,331	\$64,331	\$2,941	
15 FW Reimbursables	\$0	\$2,221	\$2,221	\$2,221	(\$2,221)	



TETRA TECH FW, INC.



DETAILED COST REPORT

Period Ending: June 3, 2005

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FWENC H.O. Support - North Lobe Dredging	Budget	Actuals	Committed	Forecast	Variance	% Var
TASK 22 General Requirements						
Subtask/Activity 04.24 Quality Control Engineer						
25 Equipment	\$3,800	\$6,847	\$6,847	\$6,847	(\$3,047)	
Subtotal 04.24	\$71,072	\$73,399	\$73,399	\$73,399	(\$2,327)	
Total for Subtask 04 Engineering, Surveying & QC	\$159,614	\$158,423	\$158,423	\$158,422	\$1,192	0.75%
Subtask/Activity 07.00 Site Safety & Health Officer						
10 FW Labor	\$11,004	\$0	\$0	\$0	\$11,004	
Subtotal 07.00	\$11,004	\$0	\$0	\$0	\$11,004	
Subtask/Activity 07.16 H&S Supplies - PPE						
20 Site Materials	\$1,200	\$0	\$0	\$0	\$1,200	
Subtotal 07.16	\$1,200	\$0	\$0	\$0	\$1,200	
Subtask/Activity 07.90 Integrated Air Monitoring						
40 Other Subs	\$1,020	\$0	\$0	\$0	\$1,020	
Subtotal 07.90	\$1,020	\$0	\$0	\$0	\$1,020	
Subtask/Activity 07.91 A/R/P Programs						
40 Other Subs	\$1,000	\$154	\$154	\$154	\$846	
Subtotal 07.91	\$1,000	\$154	\$154	\$154	\$846	
Total for Subtask 07 Health & Safety	\$14,224	\$154	\$154	\$154	\$14,070	98.92%
Subtask/Activity 11.00 Misc Project Expenses						
20 Site Materials	\$1,000	\$0	\$0	\$0	\$1,000	
Subtotal 11.00	\$1,000	\$0	\$0	\$0	\$1,000	
Total for Subtask 11 Misc. Project Expenses	\$1,000	\$0	\$0	\$0	\$1,000	100.00%
TASK TOTAL 22	\$206,577	\$188,394	\$188,394	\$188,393	\$18,184	
TASK 98 Indirect Rate Adjustment - Est.						
Subtask/Activity 01.00 Indirect Rate Adjustment-Estimate						
98 Indirect Rate Adjustment-Estim	\$0	\$7,757	\$7,757	\$9,746	(\$9,746)	
Subtotal 01.00	\$0	\$7,757	\$7,757	\$9,746	(\$9,746)	
Total for Subtask 01 Indirect Rate Adjustment - Est.	\$0	\$7,757	\$7,757	\$9,746	(\$9,746)	
TASK TOTAL 98	\$0	\$7,757	\$7,757	\$9,746	(\$9,746)	



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FWENC H.O. Support - North Lobe Dredging

TASK 99 Fee

Subtask/Activity 99.98 Funding

	Budget	Actuals	Committed	Forecast	Variance	% Var
90 Cost Funding	\$0	\$0	\$0	\$0	\$0	\$0
91 Fee Funding	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal 99.98	\$0	\$0	\$0	\$0	\$0	\$0

Subtask/Activity 99.99 Fee

	Budget	Actuals	Committed	Forecast	Variance	% Var
99 Fee	\$100,738	\$99,734	\$99,734	\$100,738	\$0	\$0
Subtotal 99.99	\$100,738	\$99,734	\$99,734	\$100,738	\$0	\$0
Total for Subtask 99 Fee	\$100,738	\$99,734	\$99,734	\$100,738	\$0	0.00%
TASK TOTAL 99	\$100,738	\$99,734	\$99,734	\$100,738	\$0	\$0

TOTAL JOB N1 FWENC H.O. Support - NL Dredging

	\$522,380	\$491,935	\$491,935	\$494,927	\$27,453	5.26%
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North Lobe Dredging Subcontractor	Budget	Actuals	Committed	Forecast	Variance	% Var
TASK 01 Mobilization						
Subtask/Activity 00.00 Mobilization						
40 Other Subs	\$131,896	\$513,414	\$513,414	\$513,414	(\$381,518)	
Subtotal 00.00	\$131,896	\$513,414	\$513,414	\$513,414	(\$381,518)	
Total for Subtask 00 Mobilization	\$131,896	\$513,414	\$513,414	\$513,414	(\$381,518)	289.26%
TASK TOTAL 01	\$131,896	\$513,414	\$513,414	\$513,414	(\$381,518)	
TASK 02 Supply of Turbidity Curtain						
Subtask/Activity 10.00 Supply of Turbidity Curtain						
40 Other Subs	\$32,238	\$39,000	\$39,000	\$39,000	(\$6,762)	
Subtotal 10.00	\$32,238	\$39,000	\$39,000	\$39,000	(\$6,762)	
Total for Subtask 10 Supply of Turbidity Curtain	\$32,238	\$39,000	\$39,000	\$39,000	(\$6,762)	20.98%
Subtask/Activity 20.00 Install Turbidity Curtain-Optional						
40 Other Subs	\$0	\$0	\$0	\$0	\$0	
Subtotal 20.00	\$0	\$0	\$0	\$0	\$0	
Total for Subtask 20 Install Turbidity Curtain-Optional	\$0	\$0	\$0	\$0	\$0	
TASK TOTAL 02	\$32,238	\$39,000	\$39,000	\$39,000	(\$6,762)	
TASK 03 Dredge/Transp/Process Area A						
Subtask/Activity 10.00 Dredge/Transp/Process Area A						
40 Other Subs	\$67,366	\$44,038	\$44,038	\$44,038	\$23,328	
Subtotal 10.00	\$67,366	\$44,038	\$44,038	\$44,038	\$23,328	
Total for Subtask 10 Dredge/Transp/Process Area A	\$67,366	\$44,038	\$44,038	\$44,038	\$23,328	34.63%
Subtask/Activity 20.00 Dredge/Transp/Process Area B						
40 Other Subs	\$28,180	\$29,182	\$29,182	\$29,182	(\$1,002)	
Subtotal 20.00	\$28,180	\$29,182	\$29,182	\$29,182	(\$1,002)	
Total for Subtask 20 Dredge/Transp/Process Area B	\$28,180	\$29,182	\$29,182	\$29,182	(\$1,002)	3.55%
Subtask/Activity 30.00 Dredge/Transp/Process Area C						
40 Other Subs	\$60,028	\$190,671	\$190,671	\$190,671	(\$130,643)	
Subtotal 30.00	\$60,028	\$190,671	\$190,671	\$190,671	(\$130,643)	
Total for Subtask 30 Dredge/Transp/Process Area C	\$60,028	\$190,671	\$190,671	\$190,671	(\$130,643)	217.64%



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North Lobe Dredging Subcontractor	Budget	Actuals	Committed	Forecast	Variance	% Var
TASK 03 Dredge/Transp/Process Area D						
Subtask/Activity 40.00 Dredge/Transp/Process Area D						
40 Other Subs	\$336,832	\$407,696	\$407,696	\$407,696	(\$70,864)	
Subtotal 40.00	\$336,832	\$407,696	\$407,696	\$407,696	(\$70,864)	
Total for Subtask 40 Dredge/Transp/Process Area D	\$336,832	\$407,696	\$407,696	\$407,696	(\$70,864)	21.04%
Subtask/Activity 50.00 Dredge/Transp/Process Area F-1						
40 Other Subs	\$27,505	\$0	\$0	\$0	\$27,505	
Subtotal 50.00	\$27,505	\$0	\$0	\$0	\$27,505	
Total for Subtask 50 Dredge/Transp/Process Area F-1	\$27,505	\$0	\$0	\$0	\$27,505	100.00%
Subtask/Activity 60.00 Dredge/Transp/Process Area F-3						
40 Other Subs	\$28,856	\$0	\$0	\$0	\$28,856	
Subtotal 60.00	\$28,856	\$0	\$0	\$0	\$28,856	
Total for Subtask 60 Dredge/Transp/Process Area F-3	\$28,856	\$0	\$0	\$0	\$28,856	100.00%
Subtask/Activity 70.00 Dredge/Transp/Process Area F-4						
40 Other Subs	\$60,705	\$0	\$0	\$0	\$60,705	
Subtotal 70.00	\$60,705	\$0	\$0	\$0	\$60,705	
Total for Subtask 70 Dredge/Transp/Process Area F-4	\$60,705	\$0	\$0	\$0	\$60,705	100.00%
Subtask/Activity 80.00 Dredge/Transp/Process Area F-6						
40 Other Subs	\$27,505	\$0	\$0	\$0	\$27,505	
Subtotal 80.00	\$27,505	\$0	\$0	\$0	\$27,505	
Total for Subtask 80 Dredge/Transp/Process Area F-6	\$27,505	\$0	\$0	\$0	\$27,505	100.00%
TASK TOTAL 03	\$636,977	\$671,587	\$671,587	\$671,587	(\$34,610)	
TASK 04 Grading of DDA						
Subtask/Activity 00.00 Grading of DDA						
40 Other Subs	\$13,587	\$23,236	\$23,236	\$23,236	(\$9,649)	
Subtotal 00.00	\$13,587	\$23,236	\$23,236	\$23,236	(\$9,649)	
Total for Subtask 00 Grading of DDA	\$13,587	\$23,236	\$23,236	\$23,236	(\$9,649)	71.02%
TASK TOTAL 04	\$13,587	\$23,236	\$23,236	\$23,236	(\$9,649)	



TETRA TECH FW, INC.



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North Lobe Dredging Subcontractor	Budget	Actuals	Committed	Forecast	Variance	% Var
TASK 05 Demobilization						
Subtask/Activity 00.00 Demobilization						
40 Other Subs	\$155,306	\$65,500	\$65,500	\$65,500	\$89,806	
Subtotal 00.00	\$155,306	\$65,500	\$65,500	\$65,500	\$89,806	
Total for Subtask 00 Demobilization	\$155,306	\$65,500	\$65,500	\$65,500	\$89,806	57.83%
TASK TOTAL 05	\$155,306	\$65,500	\$65,500	\$65,500	\$89,806	
TASK 06 Survey Quantities						
Subtask/Activity 00.00 Survey Quantities						
40 Other Subs	\$0	\$2,200	\$2,200	\$2,200	(\$2,200)	
Subtotal 00.00	\$0	\$2,200	\$2,200	\$2,200	(\$2,200)	
Total for Subtask 00 Survey Quantities	\$0	\$2,200	\$2,200	\$2,200	(\$2,200)	
TASK TOTAL 06	\$0	\$2,200	\$2,200	\$2,200	(\$2,200)	
TASK 07 Additional Dredging/Post Survey						
Subtask/Activity 00.00 Additional Dredging/Post Survey						
40 Other Subs	\$38,476	\$38,476	\$38,476	\$38,476	\$0	
Subtotal 00.00	\$38,476	\$38,476	\$38,476	\$38,476	\$0	
Total for Subtask 00 Additional Dredging/Post Survey	\$38,476	\$38,476	\$38,476	\$38,476	\$0	0.00%
TASK TOTAL 07	\$38,476	\$38,476	\$38,476	\$38,476	\$0	
TASK 08 Steel Debris (Cutting)						
Subtask/Activity 00.00 Steel Debris (Cutting)						
40 Other Subs	\$22,971	\$22,971	\$22,971	\$22,971	\$0	
Subtotal 00.00	\$22,971	\$22,971	\$22,971	\$22,971	\$0	
Total for Subtask 00 Steel Debris (Cutting)	\$22,971	\$22,971	\$22,971	\$22,971	\$0	0.00%
TASK TOTAL 08	\$22,971	\$22,971	\$22,971	\$22,971	\$0	



TETRA TECH FW, INC.



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North Lobe Dredging Subcontractor	Budget	Actuals	Committed	Forecast	Variance	% Var
TASK 09 Standby Rate						
Subtask/Activity 00.00 Standby Rate						
40 Other Subs	\$97,845	\$97,845	\$97,845	\$97,845	\$0	
Subtotal 00.00	\$97,845	\$97,845	\$97,845	\$97,845	\$0	
Total for Subtask 00 Standby Rate	\$97,845	\$97,845	\$97,845	\$97,845	\$0	0.00%
TASK TOTAL 09						
TASK 10 Survey Quantities Calculations						
Subtask/Activity 00.00 Survey Quantities Calculations						
40 Other Subs	\$3,476	\$3,476	\$3,476	\$3,476	\$0	
Subtotal 00.00	\$3,476	\$3,476	\$3,476	\$3,476	\$0	
Total for Subtask 00 Survey Quantities Calculations	\$3,476	\$3,476	\$3,476	\$3,476	\$0	0.00%
TASK TOTAL 10						
TASK 12 Screen Fill Materials from Area D						
Subtask/Activity 00.00 Screen Fill Materials from Area D						
40 Other Subs	\$0	\$2,500	\$2,500	\$2,500	(\$2,500)	
Subtotal 00.00	\$0	\$2,500	\$2,500	\$2,500	(\$2,500)	
Total for Subtask 00 Screen Fill Materials from Area D	\$0	\$2,500	\$2,500	\$2,500	(\$2,500)	
TASK TOTAL 12						
TASK 14 Gravel Fill in DDA						
Subtask/Activity 00.00 Gravel Fill in DDA						
40 Other Subs	\$0	\$2,370	\$2,370	\$2,370	(\$2,370)	
Subtotal 00.00	\$0	\$2,370	\$2,370	\$2,370	(\$2,370)	
Total for Subtask 00 Gravel Fill in DDA	\$0	\$2,370	\$2,370	\$2,370	(\$2,370)	
TASK TOTAL 14						



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North Lobe Dredging Subcontractor	Budget	Actuals	Committed	Forecast	Variance	% Var
TASK 99 Fee						
Subtask/Activity 99.98 Funding						
90 Cost Funding	\$0	\$0	\$0	\$0	\$0	
Subtotal 99.98	\$0	\$0	\$0	\$0	\$0	
Total for Subtask 99 Funding	\$0	\$0	\$0	\$0	\$0	
TASK TOTAL 99	\$0	\$0	\$0	\$0	\$0	

TOTAL JOB N2 North Lobe Dredging Subcontractor \$1,132,772 \$1,482,575 \$1,482,575 \$1,482,575 (\$349,803) 30.88%

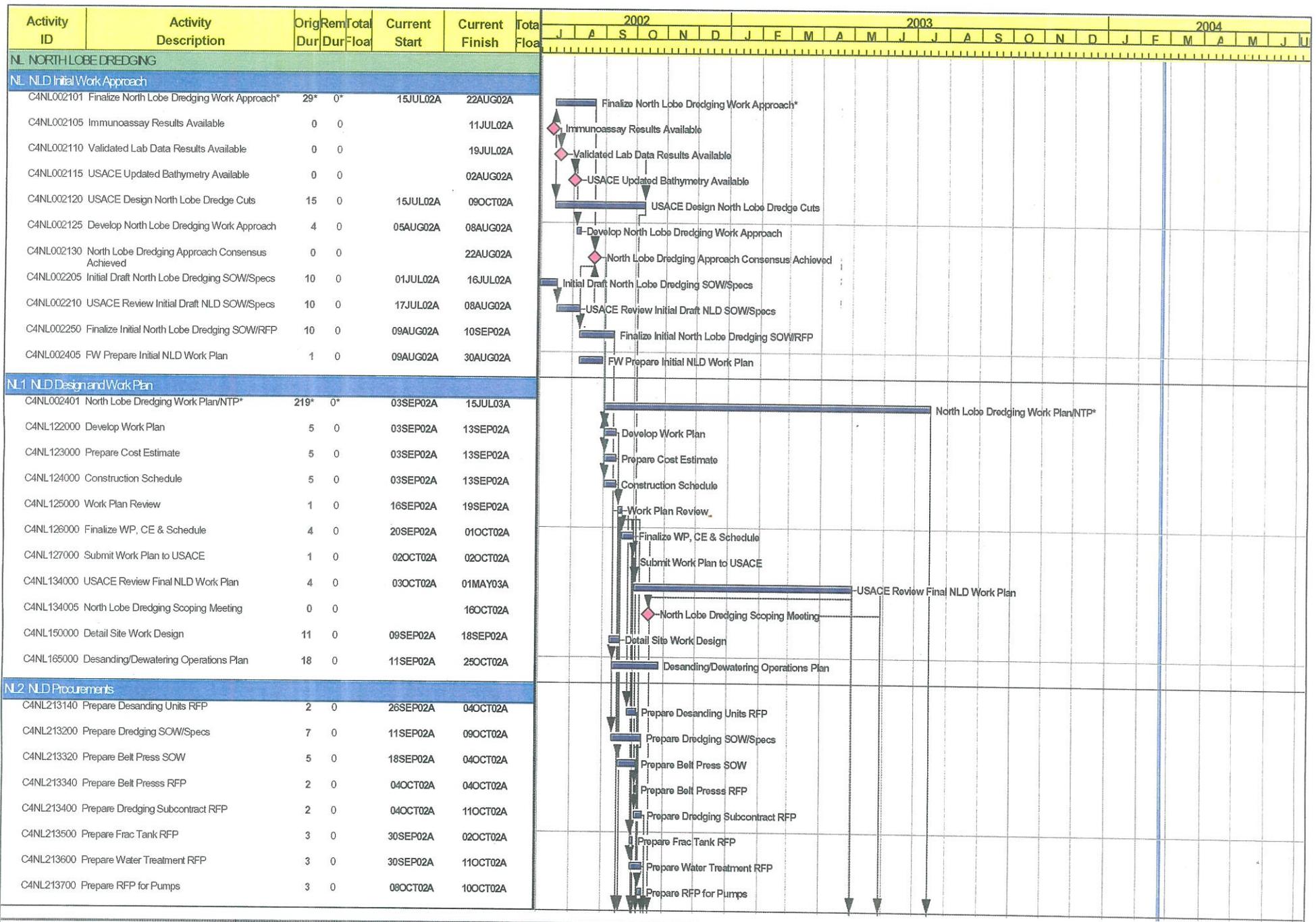
PROJECT TOTAL

PROJECT TOTAL \$1,655,152 \$1,974,510 \$1,974,510 \$1,977,502 (\$322,350) 19.48%

TOTAL CURRENT PROJECT FUNDING:

\$1,655,153

Appendix G
North Lobe Dredging Schedule



Start Date 01MAR94
 Finish Date 21FEB05
 Data Date 23FEB04
 Run Date 27FEB04 14:12
 © Primavera Systems, Inc.

TR4C

North Lobe Dredging
Final Schedule

Sheet 1 of 4

NORTH LOBE DREDGING
FL-North Lobe Dredging

Date	Revision	Checked	Approved

Appendix H
Field Change Notification Log



Field Change Notification Log
for a specific job number

10/14/2004

NBH T.O.#24 - Construction

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FCN No.	FCN Description	Status		FCN Value	Remarks
		Code	Date		
N1 North Lobe Dredging H.O. Support					
FCN24071	NL Procurements	CLO	5/30/2003	\$6,000	Closed. Funded in MOD 2415. Request authorization to begin procurements for the North lobe Dredging Subcontractor and Bathymetric survey of the North Lobe Dredge Area.
FCN24092	NL Water Treatment/Testing	CLO	9/25/2003	\$21,809	North Lobe Temp. Water Treatment Testing. 11/24/03 - This FCN will be closed when RFP#95 is fully funded. 12/17/03 Closed - Rec'd Funding Mod 2418.
FCN24101	Additional Analysis	CLO	10/23/2003	\$16,000	Additional 46 samples to be analyzed for NOAA PCB congeners, due to sloughing of sediments into the dredge area. 11/24/03 - This FCN will be closed when RFP#95 is fully funded. 12/17/03 Closed - Rec'd Funding Mod 2418.
FCN24120	Compressed gas cylinders	CLO	2/24/2004	\$750	Closed. Gas cylinders were found in the scows at the DDA during off loading operations. We have been able to identify five of the cylinders. It appears that there are two completely 'unknown' cylinders. Need to identify and profile for disposal.
Job Subtotal:				\$44,559	
N2					
FCN24085	NLD Qty. Change and Area F Opt Del.	CLO	8/21/2003		Dredging quantities have increased and Area F optional items have been deleted. CLOSED 11/24/03 - This FCN was issued for documentation purposes only - no further action is required.
FCN24102	Additional Dredging/Conf. Sampling	CLO	10/30/2003	\$38,477	Confirmatory sampling shows sample points C007-4, and C007-6 with readings above the cleanup goals. 11/24/03 - This FCN will be closed when RFP#95 is fully funded. 12/17/03 Closed - Rec'd Funding Mod 2418.
FCN24109	Standby Time	APP	12/19/2003	\$97,845	Standby rate for North Lobe dredging
FCN24114	Steel Debris Removal	APP	1/21/2004	\$22,971	During the preparation of the North Lobe Dredging work plan and estimate, it was not anticipated that the steel debris removed from the North Lobe Dredge area would need to be sized down in order to leave in the DDA. It was decided during the negotiations of the North Lobe work plan and estimate that the capping of the DDA would be left out of the budget and addressed in a separate mod once the dredging was completed and the scope was better identified
FCN24116	Quantity Calculations	APP	1/29/2004	\$5,676	USACE requests we have Maxymillian's Hydrographic Survey Subcontractor perform quantity take off's that the specs call for as the government's responsibility.
Job Subtotal:				\$164,969	
Total of FCNs Submitted				\$209,528	

Appendix I

List of Equipment with Decontamination Certificates

NORTH LOBE EQUIPMENT LOG

Equipment	Serial #	Machine ID #	Mobilized	Demobilized	Decon/ Cert
Krupps Crane KMK 5110 (CRS)	51100904	#125	08/18/03	08/18/03	NA-Clean
(5) Shugart Sectional Barges			08/18/03	12/22/03	12/18/03
(6) Micro-Scows			08/18/03	12/23/03	12/17/03
CAT 416 Back-Hoe (TtFW)		# 58	08/20/03	01/22/04	NA-Clean
Kobelco 912 Long Arm Excavator		MT # 66	08/21/03		02/12/04
CAT 345 Excavator w/ Clamshell		MT # 68	08/26/03	11/11/03	11/10/03
Dredge Barge Diesel Powered Spud Winch			08/26/03	11/11/03 (w/barge)	11/11/03 (w/barge)
Crest 20' Pontoon Boat			08/26/03	12/23/03	NA-Clean
CAT 980 Loader	A003912	MT #35	08/28/03	11/20/03	11/19/03
Red Work Boat - Scow Barge Tug (Roy)			08/28/03	12/22/03	NA-Clean
Dredge Barge w/ Hopper (X ASR 1) (Roy)			08/28/03	11/11/03	11/11/03
Offloading Barge (Will S.) (Sterling Equip.)			08/28/03	11/23/03	11/18/03
DynaPrime 3494 6" Diesel Pump			09/08/03	10/15/03	10/08/03
CAT 235 Excavator	K5AF013634*	MT # 69	09/17/03	12/02/03	11/21/03
Extech Screener & Conveyor			09/17/03	1/19/2004	01/15/04
Extech Slurry Tank			09/17/03	02/03/04	01/21/04
CAT XQ 350 KW Generator			09/17/03	11/25/03	11/21/03
10" Hydraulic Slurry Pump			09/17/03	12/18/03	11/21/03
Miller 251 Welder			09/23/03	11/06/03	NA-Clean
Godwin 6" Diesel Pump		# 4	09/24/03	11/25/03	11/24/03
Gorman Rupp 6" Diesel Pump		# 3	09/24/03	12/18/03	11/24/03
Daewoo Solar 220 Series II Excavator		# 57	09/29/03	10/29/03	10/27/03
Iszley H-1500C Excavator (Roy)	H78400		11/11/03	11/11/03	NA-Clean
CAT 235 Excavator w/ shear attachment			01/26/04	02/10/04	02/09/04
Steel Plates from barges			NA	12/29/03	11/18/03
Extech Magnet			NA	12/29/2003	12/19/03
Environmental clamshell Bucket - (Spare)			NA	10/15/03	09/11/03
Rake Attachment for Kobelco 912			NA		12/19/03
Honda 5.5 - 3" Trash Pump		# 430	NA	10/15/03	10/15/03
Honda 4.0 - 2" Trash Pump			NA	10/15/03	10/15/03
(2) Honda 3" Trash Pumps			NA	01/12/04	11/21/03
(1) Honda 2" Trash Pump			NA	01/12/04	11/21/03
(3) secs. of 6" pipe for 6" DynaPrime pump			NA	10/15/03	10/15/03
3" pipe & fire hose for 3" Honda pump			NA	10/15/03	10/15/03
2" pipe & fire hose for 2" Honda pump			NA	10/15/03	10/15/03
Skid Pan			NA	12/23/03	12/19/03
Concrete Blocks from Dredge Barge			NA		
All HDPE pipe & other misc. piping			NA	01/08/04	01/08/04

Appendix J
Final Government Acceptance Inspections

October 29, 2004

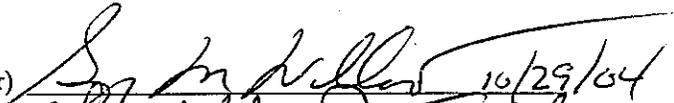
Final-Final Government Acceptance Inspection
New Bedford Harbor Superfund Site
North Lobe Dredging Project

A Final-Final Government Acceptance Inspection was completed for the North Lobe Dredging Project based on the submittal of As-Built Conditions of the Debris Disposal Area on October 29, 2004.

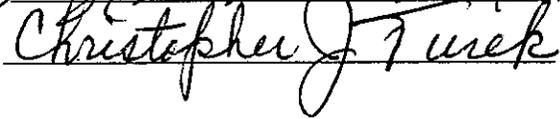
It was determined that the North Lobe Dredging Project would be considered complete and work satisfactorily accepted by TtFW and USACE.

Signatures indicate concurrence that the above verbiage is true and accurate.

George M. Willant (TtFW Project Manager)


10/29/04

Chris Turek (USACE Project Engineer):



December 15, 2003

FINAL GOVERNMENT ACCEPTANCE INSPECTION
New Bedford Harbor Superfund Site
North Lobe Dredging Project

A Final Government Acceptance Inspection was completed for the Dredging portion of the North Lobe Dredging Project based on the information of the Bathymetric Survey submitted to TtFWI and USACE on December 10, 2003 for all the Dredge areas at the North Lobe Project.

It was determined that the North Lobe Dredging Project would be considered complete and work satisfactorily accepted by TtFWI and USACE when the following tasks are completed:

1. Final As-Built drawing of the DDA.
2. All equipment and miscellaneous materials around the Sawyer Street complex are demobed from the site.
3. All former work areas at the Sawyer Street Site are completely cleaned and returned to the same condition which they were prior to any of the work for the North Lobe Dredging Project.

Signatures indicate that the first paragraph is completed and the itemized will be completed later.

John Fusegni (TtFWI CQSM)

John Fusegni

Chris Turek (USACE Construction Rep)

Christopher Turek

12/17/03

Appendix K
Project Photographs

NEW BEDFORD HARBOR PHOTOGRAPHIC LOG

PROJECT: North Lobe Dredging

PHOTO #	DATE	TAKEN BY	PHOTO DESCRIPTION
6-9sept03-sawyerst.jpg	9/6/2003		Barge unloading at Sawyer Street
7-9sept09-sawyerst.jpg	9/7/2003		Closeup of barge unloading
8-9903-sawyerst.jpg	9/8/2003		Barge unloading
NL91601	9/16/2003	AC	Dredge Area D in progress looking north
NL91602	9/16/2003	AC	Dredge material excavated with environmental bucket
NL91603	9/16/2003	AC	Placement of dredge material in hopper barge
NL92301	9/23/2003	AC	Dredging Area D
NL92302	9/23/2003	AC	Dredging Area D
NL92303	9/23/2003	AC	Pushing scow to DDA



6-9sept03-sawyerst.jpg: Barge unloading at Sawyer Street



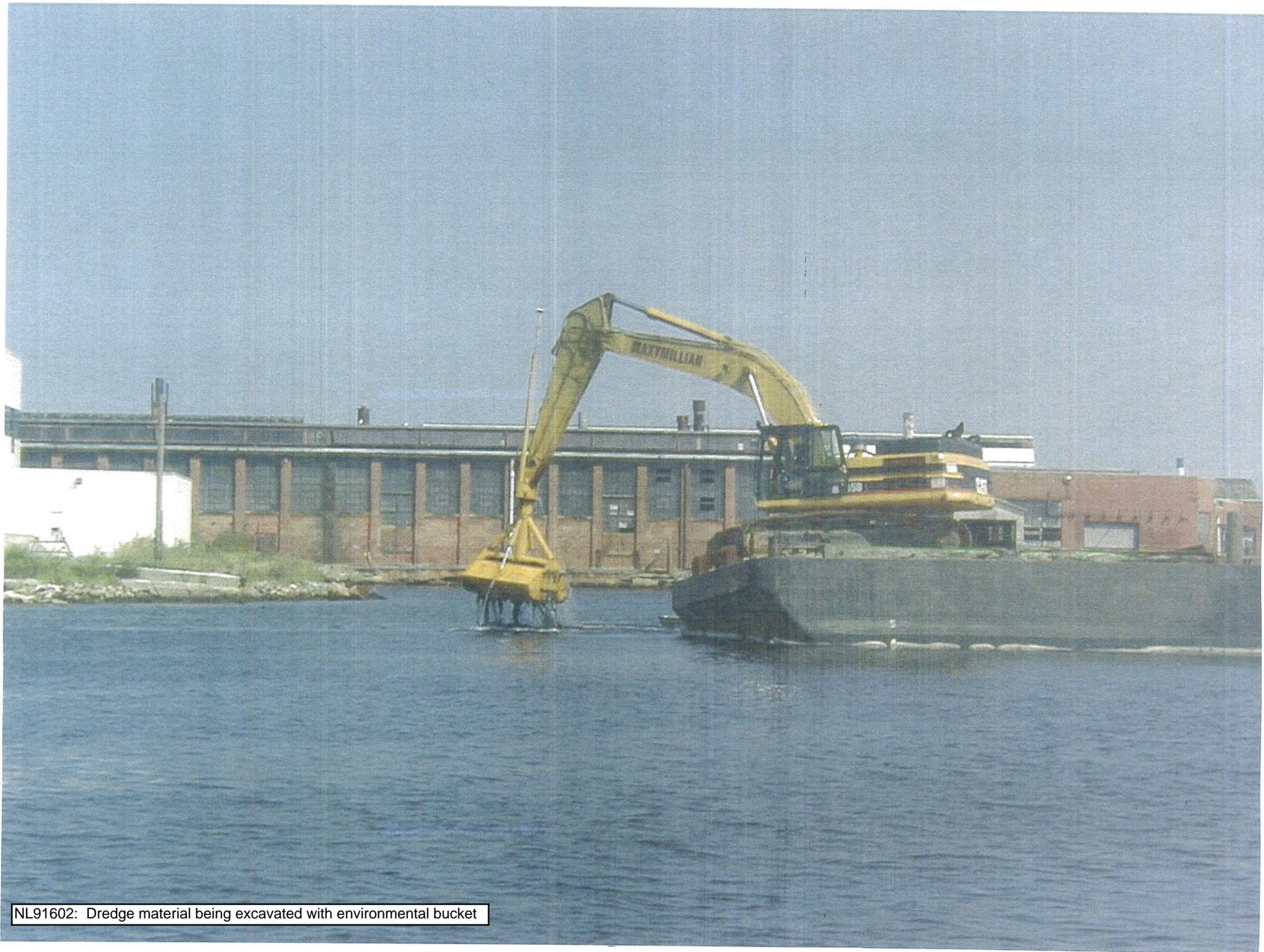
7-9sept09-sawyerst.jpg: Closeup of barge unloading



8-9903-sawyerst.jpg: Barge unloading



NL91601: Dredge Area D in progress looking north



NL91602: Dredge material being excavated with environmental bucket



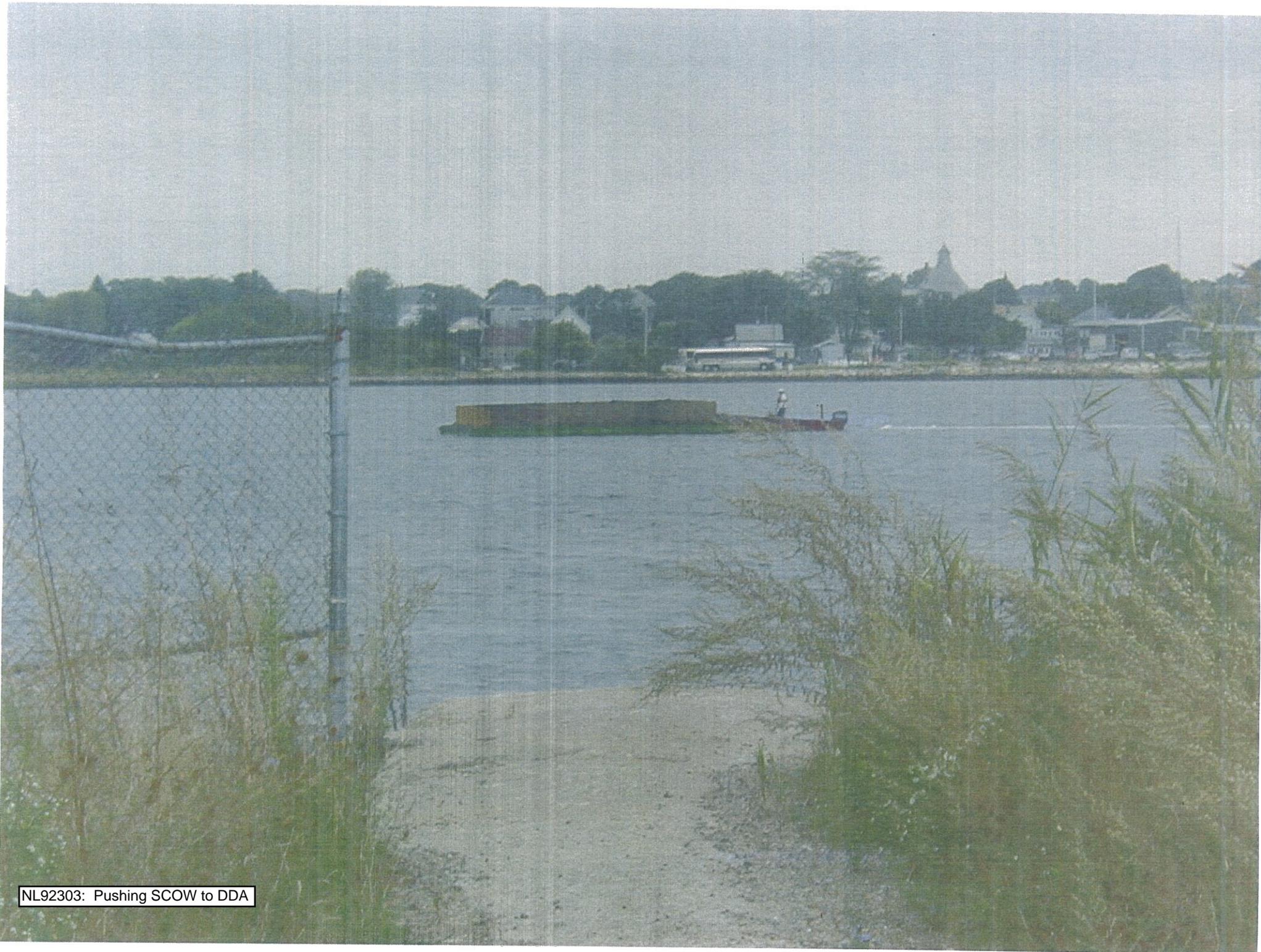
NL91603: Placement of dredge material in hopper barge



NL92301: Dredging Area D



NL92302: Dredging Area D



NL92303: Pushing SCOW to DDA

Appendix L
Confirmatory Sample Results

Appendix L.1
Confirmatory Sampling Results Report

USACE CONTRACT NO. DACW33-94-D-0002
TASK ORDER NO. 024
TOTAL ENVIRONMENTAL RESTORATION CONTRACT

**NORTH LOBE DREDGING
CONFIRMATORY SAMPLE RESULTS
NEW BEDFORD HARBOR SUPERFUND SITE
New Bedford, Massachusetts**

January 2004

Prepared by

Tetra Tech FW, Inc.
133 Federal Street
Boston, Massachusetts 02110



USACE CONTRACT NO. DACW33-94-D-0002
TASK ORDER NO. 0247
TOTAL ENVIRONMENTAL RESTORATION CONTRACT

NORTH LOBE DREDGING
CONFIRMATORY SAMPLE RESULTS
NEW BEDFORD HARBOR SUPERFUND SITE
New Bedford, Massachusetts

January 2004

Prepared for

U.S. Army Corps of Engineers
New England District
Concord, Massachusetts

Prepared by

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1.0 INTRODUCTION

Tetra Tech FW, Inc. (TtFW) prepared this report to summarize results of the confirmatory sediment samples collected from the four dredge areas during the North Lobe Dredging Program. Dredging and removal of contaminated sediments in the harbor near the north lobe was intended to achieve the ROD cleanup goal of PCB concentrations of 50 ppm or less in the remaining sediments. Confirmatory sampling was conducted by TtFW to assist USACE in determining whether or not the dredging of sediments in the four dredge areas located at the north lobe achieved the required goals.

2.0 RESULTS AND DOCUMENT ORGANIZATION

This report provides sediment sample results from the North Lobe Dredging Program in usable formats for the various data users on this project. During the remediation program, the results were provided to the field construction team periodically as available. Based on these results, USACE proceeded with evaluation tasks including determining whether supplemental dredging in a specific area was needed to meet the clean-up target. A summary of the organization of this document is given below.

A brief introduction to this document is included in Section 1.0. Section 2.0 (this Section) discusses the overall format of the report and identifies the contents of the various appendices. Section 3.0 summarizes the sample collection procedures for the confirmatory samples as well as the associated split samples. Section 4.0 discusses the extraction and analytical methods employed by the laboratories. Section 5.0 summarizes the quality control (QC) measurements applied to the PCB analytical results, and provides comparisons of split sample results from different laboratories and analytical methods. The total PCB results for the sediment samples collected during this remediation are presented in Appendix A. Site figures showing the locations sampled are presented in Appendix B. The individual congener and homologue results for the confirmatory samples are presented in Appendix C.

3.0 SAMPLE COLLECTION AND PROCEDURE FOR SPLITTING SAMPLES

During the North Lobe Dredging Program, approximately 130 confirmatory samples were collected at locations as close to the location proposed in the Field Sampling Plan (FSP) as practical. At each sampling location, samples were collected with a pushcore or vibracore at 6-inch intervals to up to a depth of 3.0 feet below the mudline. After collection, samples were homogenized prior to being placed in pre-cleaned sample containers. Depending on field needs, samples were sent off-site to the primary laboratory (Severn Trent Laboratories) for 18 NOAA congener analysis.

The north lobe dredging project was unique in that the dredging was intended to remediate contaminated sediments at depth below a layer of "clean" (<50 ppm) material. Based on characterization sampling it was determined that the contaminated material was sporadically distributed in relatively small areas. The project was also constrained by disposal space limitations (the Sawyer Street CDF and DDA) necessitating the smallest removal volume practical. The resulting plan was to dredge relatively deeply in the small dredge footprints shown on Figure B-1. The sediments in this area are very soft and easily sloughed into the deep dredge areas making selection of samples representative of the post-dredge surface difficult. Sampling locations were identified in the project Field Sampling Plan (FSP), as approved by USACE. The bathymetric survey information along with the GPS data were used to determine whether a sample at a certain depth was analyzed or archived.

Of the approximately 130 samples that were collected, a total of 86 samples were analyzed for congeners. For QA/QC purposes, 6 of the approximately 130 samples were split for total PCB homologue group analysis and 5 split samples were sent to the USACE Quality Assurance (QA) laboratory for 18 NOAA congener analysis.

4.0 ANALYTICAL METHODOLOGY

Analytical methodology was performed according to the project Quality Assurance Project Plan (QAPP) with sample data reported in Appendices A and C. Based on earlier sediment characterization and confirmatory sampling programs documented in the associated reports and technical memoranda regarding correlation studies, NOAA congener analysis (EPA Method 8082) was selected as the primary analysis for PCBs during this program. Earlier studies recommended a linear regression equation (Sum of NOAA Congeners*2.6+0 = total PCBs) to calculate total PCBs equivalent to total homologue groups in harbor sediment. A total of 86 samples were analyzed for congeners by Severn Trent Laboratories (STL). For the purpose of subsequent method comparison and quality control, approximately 7.5% of the samples (6 samples) were split for total homologue group analysis conducted by Axys Analytical Services (Axys). In addition, 5% of the samples (5 samples) were sent to the USACE QA laboratory (Phillips Analytical Services) for NOAA congener analysis. The extraction and analytical methods are discussed in the following subsections. Results for split samples are reported in Table 5-1.

4.1 Extraction Methods

Soxhlet Extraction (for 18 NOAA congener and total homologue group analyses conducted by STL, Phillip, and Axys) (EPA Method 3540) – Samples are extracted using Soxhlet glassware designed to percolate heated solvent through the sample over an 18 hour period. The resulting solvent extract is concentrated, cleaned, and analyzed using the analytical methods described below.

4.2 Analytical Methods

Congener Analysis (for 18 NOAA congener analysis conducted by STL and Phillip) (EPA Method 8082) – Congener analysis uses a gas chromatography/electron capture detector (GC/ECD) that identifies selected individual congeners (18 NOAA congeners) by retention time with second column confirmation for both identification and quantification. Quantification is performed by external standard technique. This method is subject to potential false positives from target and non-target analytes. In general, the effects of potential false positives on the total PCB concentration are minimized by the use of second column confirmation (the lower of the two values is reported). The congener method is more cost effective and easier to implement than the homologue method (see below). Accordingly, this method has been used as the primary analytical method for the NE TERC pre-design and confirmatory sampling efforts conducted to date.

Total Homologue Groups (for total homologue group analysis conducted by Axys) (EPA Method 8270C – SIM) – This method uses gas chromatography (GC) in combination with low-resolution mass spectrometry (LRMS) to selectively identify and quantify PCB groups based on their specific mass. Results are reported for each homologue group (i.e., total mono through deca PCBs). The total homologue group method was expected to provide the most accurate measure of total PCBs as it reports PCBs by mass with minimal potential for falsely high data or missed compounds. The drawbacks to this method are that it requires highly specialized equipment, software, and highly trained analysts. Accordingly, it can be a relatively expensive method and is difficult to obtain rapid turnaround.

5.0 DATA REVIEW AND QC RESULTS

Data collected during this program were used by USACE to evaluate the effectiveness of the remediation with respect to achieving the target ROD clean-up goals. Sampling, analysis, data validation, and split sample QC protocols were applied by TtFW in accordance with the project QAPP to ensure that the data were representative of site conditions, comparable with previous and future data to be generated, and accurate relative to project clean-up goals.

5.1 QC Review Approach

The sediment PCB results from laboratory analyses were reviewed for compliance with analytical QC criteria to determine the acceptability of the overall data set and individual data points for use in achieving project objectives.

Analytical data for the confirmatory samples were given a "checklist" review for compliance with QC criteria. QC exceedances were reported using the validation reports generated by the loading application for the New Bedford Harbor Oracle Database and a brief "spot check" by the reviewer. This review was based on the Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996 criteria, and was intended to identify QC exceedances that may significantly affect the reported sample results. This limited QC review was intended to provide information on the quality of the data in more detail than an EPA Region I Tier I validation, but was not intended to provide as much detail as a Tier II validation. The database is set up to check holding time dates, spike recoveries, and other criteria that are found on the Tier I checklist. This data review included an evaluation of the following QC measures:

- Data Completeness
- Sample Preservation and Technical Holding Times
- Blank Analysis
- Field Duplicates
- Matrix Spike/Matrix Spike Duplicate
- Surrogate Compounds
- Laboratory Control Sample

In addition to the "checklist" review, approximately 10 percent of the data were selected for a more in-depth Tier II data validation. The Tier II data validation was performed on 1 data package randomly selected from the total of 10 packages submitted by the primary laboratory (STL). The following QC criteria were evaluated: data completeness, holding times, initial calibrations, continuing calibrations, method blanks, laboratory control samples, surrogate recoveries, matrix spike/matrix spike duplicates (MS/MSD), field duplicates, dual column confirmation precision, compound identification, and compound quantification.

Memoranda and worksheets from the checklist review and Tier II data validation are kept on file at TtFW.

The "check-list" data review and the Tier II data validation performed during this program indicated that, in general, the data from the primary laboratory (STL) were within the QC acceptance limits specified by the project QAPP and the laboratory SOP. Some exceedances from the QC limits for MS/MSDs were identified in several data packages. These QC exceedances were probably due to sediment matrix complexity and relatively high PCB concentrations in the native samples, and did not appear to be of a magnitude that would affect the usability of the data relative to their intended use.

5.2 Split Sample Results

As part of the QC process, a total of 6 samples were split for total PCB homologue group analysis by Axys Analytical Services during this sampling program. An additional 5 split samples were sent to USACE QA laboratory for 18 NOAA congener analysis. Table 5-1 presents the results for these split samples and the relative percent differences (RPD) between these results and the corresponding sample data from primary laboratory analysis.

Table 5-1
Split Sample Results and Comparison
North Lobe Dredging Confirmatory Sampling

Sample ID	Primary Lab Result ¹ (STL)	QA Lab Result ¹ (Phillip)	Total Homologue Group ² (Axys)	RPD ³
	Total PCBs (ppm)	Total PCBs (ppm)	Total PCBs (ppm)	(%)
C007-001-0.0-0.5	2.8	2.5		11%
C009-001D-1.0-1.5	0.0047 U	0.044 U		OK
C008-001-0.0-0.5	48	43		11%
C008-003-1.0-1.5	20	29		-37%
C008-008-0.5-1.0	18	18		0%
C008-002-1.0-1.5	0.0044 U		0.011	OK
C008-003-0.5-1.0	60		57	5%
C008-004-0.5-1.0	32		33	-3%
C008-007-0.0-0.5	56		71	-24%
C007-002-1.5-2.0	0.0078		0.015	-63%
C007-006-1.5-2.0	180		270	40%
Total Number of Comparisons				
		5	6	
Number of Comparisons In Agreement⁴				
		5	6	
Percentage of Comparisons In Agreement				
		100%	100%	

Notes:

¹ Analysis for 18 NOAA congeners. Total PCBs = Sum of detected Congeners*2.6 + 0.

² Analysis for total PCB homologue groups. Total PCBs = Sum of detected Homologue Groups.

³ RPD between Primary Lab Result and QA Lab Result:

$$RPD = (Primary\ Lab\ Result - QA\ Lab\ Result) / ((Primary\ Lab\ Result + QA\ Lab\ Result) / 2) * 100$$

RPD between Primary Lab Result and Total Homologue Group Result:

$$RPD = (Primary\ Lab\ Result - Total\ Homologue\ Group) / ((Primary\ Lab\ Result + Total\ Homologue\ Group) / 2) * 100$$

If one result = U and the other < 0.5 ppm, the comparison is considered "OK".

⁴ The comparison is considered "In Agreement" if RPD < ± 75%, or RPD = OK.

The established acceptance criteria for the split sample results defined in the project Quality Assurance Project Plan (QAPP) is that 75% of the comparisons should meet ± 75% RPD. As shown in Table 5-1, the results from the primary laboratory (STL) for the split samples agree well with the results from the QA laboratory and homologue analysis. Comparisons for the split sample meet the ±75% RPD specified by the QAPP. These results indicate that the data from the primary laboratory are usable for the project.

**New Bedford Harbor Superfund Site
New Bedford, Massachusetts
Total Cumulative Sediment Sample Report**

This Report includes total PCB results for sediment samples taken during the North Lobe Dredging (NLD) Confirmatory Sampling Program at New Bedford Harbor

Units

Reporting Units for congeners and homologues are in ppm (mg/kg dry weight).

On the Total PCB Results Table, results are reported to two significant figures and then rounded to two decimal places for ease of presentation. Note this conversion reports results less than 0.01 as 0.01. The actual results (sometimes to 4 decimal places) are maintained in the database.

On the Individual PCB Results Table, results are reported to two significant figures.

Total PCB Values are reported as the sum of detected NOAA congeners used in the regression equation (Sum of NOAA Congeners*2.6 +0 = total PCBs) for the North Lobe Dredging Confirmatory samples.

Sample ID Description

Each confirmatory sample collected was assigned a unique sample identification:

CAAA-BBB-D-EE-top depth-bottom depth

Where,

- C = Confirmatory Sample Prefix
- AAA = CDA Identifier (007 to 010)
- BBB = Sample Station Identifier (sequential numbering)
- D = Additional Sample Station Identifier (optional, alphabets A through E denote grabs within a composite)
- EE = Dredge Pass Identifier for the Sample Station (sequential two digits numbers. Sample IDs without a Dredge Pass Identifier are assumed with Dredge Pass 01).
- top depth = numeric top depth of sample in feet (') (to one decimal place)
- bottom depth = numeric bottom depth of sample in feet (') (to one decimal place)

REP – Field Replicate

Qualifier (Qual) Definitions

- U = Compound not detected above given reporting limit.
- P = Greater than 25% difference for detected concentrations between the two GC columns.
- ZZ = Results for BZ#105 were taken from a specific column only because peaks for the congener from the other column had an “unintegratable shoulder”.
- D = Concentrations identified from analysis of the sample at a secondary dilution.
- Remed* = Remediated (Y or left blank)
- Y = Material that the sample represents was subsequently removed during remediation efforts. Sample results no longer reflect actual field conditions.

Samples corresponding to Dredge Areas

Samples with CDA Identifier C007 were collected from NLD Dredge Area C

Samples with CDA Identifier C008 were collected from NLD Dredge Area D

Samples with CDA Identifier C009 were collected from NLD Dredge Area A

Samples with CDA Identifier C010 were collected from NLD Dredge Area B

Appendix A
Total PCB Results for Confirmatory Samples (Cumulative Summary of Available Data)

NEW BEDFORD HARBOR
 NORTH LOBE DREDGING CONFIRMATORY SAMPLES
 TOTAL PCB RESULTS (MG/KG)

Study ID	Sample ID	Station	Northing	Easting	Start Date	Depth Top	Depth Bot	Total PCB	Qual	Soil Type	Soil Color	Source	Remed*	Comments
NLD	C007-001-0.0-0.5	C007-001	2697794	814320	10/20/2003	0.	0.5	2.80				STL		
NLD	C007-001-0.5-1.0	C007-001	2697794	814320	10/20/2003	0.5	1.	0.73				STL		
NLD	C007-002-0.0-0.5	C007-002	2697756	814262	10/20/2003	0.	0.5	67.00				STL		
NLD	C007-002-0.5-1.0	C007-002	2697756	814262	10/20/2003	0.5	1.	4.20				STL		
NLD	C007-002-1.0-1.5	C007-002	2697756	814262	10/20/2003	1.	1.5	0.12				STL		
NLD	C007-002-1.5-2.0	C007-002	2697756	814262	10/20/2003	1.5	2.	0.01				STL		
NLD	C007-002-2.0-2.5	C007-002	2697756	814262	10/20/2003	2.	2.5	0.01				STL		
NLD	C007-003-0.0-0.5	C007-003	2697752	814305	10/20/2003	0.	0.5	2.80				STL		
NLD	C007-004-0.0-0.5	C007-004	2697726	814261	10/20/2003	0.	0.5	29.00				STL	Y	
NLD	C007-004-0.5-1.0	C007-004	2697726	814261	10/20/2003	0.5	1.	38.00				STL	Y	
NLD	C007-004-1.0-1.5	C007-004	2697726	814261	10/20/2003	1.	1.5	51.00				STL	Y	
NLD	C007-004-1.5-2.0	C007-004	2697726	814261	10/20/2003	1.5	2.	170.00				STL	Y	
NLD	C007-004-1.5-2.0REP	C007-004	2697726	814261	10/20/2003	1.5	2.	160.00				STL	Y	
NLD	C007-005-0.0-0.5	C007-005	2697723	814310	10/20/2003	0.	0.5	0.26				STL		
NLD	C007-006-0.0-0.5	C007-006	2697688	814257	10/20/2003	0.	0.5	60.00				STL	Y	
NLD	C007-006-0.5-1.0	C007-006	2697688	814257	10/20/2003	0.5	1.	240.00				STL	Y	
NLD	C007-006-1.0-1.5	C007-006	2697688	814257	10/20/2003	1.	1.5	330.00				STL	Y	
NLD	C007-006-1.5-2.0	C007-006	2697688	814257	10/20/2003	1.5	2.	180.00				STL	Y	
NLD	C007-006-2.0-2.5	C007-006	2697688	814257	10/20/2003	2.	2.5	24.00				STL	Y	
NLD	C007-007-0.0-0.5	C007-007	2697692	814304	10/20/2003	0.	0.5	0.02	U			STL		
NLD	C007-007-0.5-1.0	C007-007	2697692	814304	10/20/2003	0.5	1.	0.02	U			STL		
NLD	C007-008-0.0-0.5	C007-008	2697711	814358	10/20/2003	0.	0.5	0.06				STL		
NLD	C007-008-0.5-1.0	C007-008	2697711	814358	10/20/2003	0.5	1.	0.016	U			STL		
NLD	C007-009-0.0-0.5	C007-009	2697665	814275	10/20/2003	0.	0.5	16.00				STL		
NLD	C007-009-0.0-0.5REP	C007-009	2697665	814275	10/20/2003	0.	0.5	16.00				STL		
NLD	C007-009-0.5-1.0	C007-009	2697665	814275	10/20/2003	0.5	1.	2.40				STL		
NLD	C007-009-1.0-1.5	C007-009	2697665	814275	10/20/2003	1.	1.5	1.40				STL		
NLD	C007-010-02-0.0-0.5	C007-010	2697716	814266	11/25/2003	0.	0.5	0.05				STL		
NLD	C007-010-02-0.5-1.0	C007-010	2697716	814266	11/25/2003	0.5	1.	0.01	U			STL		
NLD	C007-011-02-0.0-0.5	C007-011	2697680	814265	11/25/2003	0.	0.5	0.5				STL		
NLD	C007-011-02-0.5-1.0	C007-011	2697680	814265	11/25/2003	0.5	1.	0.01				STL		
NLD	C007-011-02-1.0-1.5	C007-011	2697680	814265	11/25/2003	1.	1.5	0.01	U			STL		
NLD	C008-001-0.0-0.5	C008-001	2697554	814163	10/17/2003	0.	0.5	48.00				STL		
NLD	C008-001-0.5-1.0	C008-001	2697554	814163	10/17/2003	0.5	1.	0.11				STL		
NLD	C008-001-1.0-1.5	C008-001	2697554	814163	10/17/2003	1.	1.5	0.01	U			STL		
NLD	C008-001-A-1.5-2.0	C008-001-A	2697571	814163	10/07/2003	1.5	2.	270.00				STL		
NLD	C008-002-0.0-0.5	C008-002	2697559	814212	10/17/2003	0.	0.5	5.40				STL		
NLD	C008-002-0.5-1.0	C008-002	2697559	814212	10/17/2003	0.5	1.	0.13				STL		
NLD	C008-002-1.0-1.5	C008-002	2697559	814212	10/17/2003	1.	1.5	0.01	U			STL		
NLD	C008-002-1.5-2.0	C008-002	2697559	814212	10/17/2003	1.5	2.	0.005				STL		

NEW BEDFORD HARBOR
 NORTH LOBE DREDGING CONFIRMATORY SAMPLES
 TOTAL PCB RESULTS (MG/KG)

Study ID	Sample ID	Station	Northing	Easting	Start Date	Depth Top	Depth Bot	Total PCB	Qual	Soil Type	Soil Color	Source	Remed*	Comments
NLD	C008-003-0.0-0.5	C008-003	2697560	814260	10/17/2003	0.	0.5	69.00				STL		
NLD	C008-003-0.5-1.0	C008-003	2697560	814260	10/17/2003	0.5	1.	60.00				STL		
NLD	C008-003-1.0-1.5	C008-003	2697560	814260	10/17/2003	1.	1.5	20.00				STL		
NLD	C008-003-1.5-2.0	C008-003	2697560	814260	10/17/2003	1.5	2.	17.00				STL		
NLD	C008-004-0.0-0.5	C008-004	2697561	814310	10/17/2003	0.	0.5	34.00				STL		
NLD	C008-004-0.0-0.5REP	C008-004	2697561	814310	10/17/2003	0.	0.5	36.00				STL		
NLD	C008-004-0.5-1.0	C008-004	2697561	814310	10/17/2003	0.5	1.	32.00				STL		
NLD	C008-004-1.0-1.5	C008-004	2697561	814310	10/17/2003	1.	1.5	2.30				STL		
NLD	C008-004-1.5-2.0	C008-004	2697561	814310	10/17/2003	1.5	2.	0.31				STL		
NLD	C008-004-A-1.0-1.5	C008-004-A	2697560	814317	10/07/2003	1.	1.5	78.00				STL		
NLD	C008-005-1.0-1.5	C008-005	2697514	814142	10/17/2003	1.	1.5	9.50				STL		
NLD	C008-005-1.5-2.0	C008-005	2697514	814142	10/17/2003	1.5	2.	3.0				STL		
NLD	C008-005-A-0.0-0.5	C008-005-A	2697521	814149	10/07/2003	0.	0.5	1.50				STL		
NLD	C008-006-0.0-0.5	C008-006	2697522	814192	10/17/2003	0.	0.5	11.00				STL		
NLD	C008-006-A-0.5-1.0	C008-006-A	2697522	814194	10/07/2003	0.5	1.	28.00				STL		
NLD	C008-007-0.0-0.5	C008-007	2697510	814240	10/17/2003	0.	0.5	56.00				STL		
NLD	C008-007-0.5-1.0	C008-007	2697510	814240	10/17/2003	0.5	1.	1.70				STL		
NLD	C008-007-A-1.0-1.5	C008-007-A	2697516	814235	10/07/2003	1.	1.5	0.01	U			STL		
NLD	C008-008-0.0-0.5	C008-008	2697515	814289	10/17/2003	0.	0.5	54.00				STL		
NLD	C008-008-0.5-1.0	C008-008	2697515	814289	10/17/2003	0.5	1.	18.00				STL		
NLD	C008-008-1.0-1.5	C008-008	2697515	814289	10/17/2003	1.	1.5	0.01	U			STL		
NLD	C008-008-1.5-2.0	C008-008	2697515	814289	10/17/2003	1.5	2.	0.01	U			STL		
NLD	C008-008-1.5-2.0REP	C008-008	2697515	814289	10/17/2003	1.5	2.	0.01	U			STL		
NLD	C008-009-0.0-0.5	C008-009	2697466	814167	10/17/2003	0.	0.5	24.00				STL		
NLD	C008-009-A-0.5-1.0	C008-009-A	2697477	814171	10/07/2003	0.5	1.	0.15				STL		
NLD	C009-001A-0.0-0.5	C009-001A	2697341	814181	10/21/2003	0.	0.5	0.05				STL		
NLD	C009-001A-0.5-1.0	C009-001A	2697341	814181	10/21/2003	0.5	1.	0.01	U			STL		
NLD	C009-001A-1.0-1.5	C009-001A	2697341	814181	10/21/2003	1.	1.5	0.04				STL		
NLD	C009-001A-1.5-2.0	C009-001A	2697341	814181	10/21/2003	1.5	2.	0.02	U			STL		
NLD	C009-001B-0.0-0.5	C009-001B	2697343	814203	10/21/2003	0.	0.5	4.50				STL		
NLD	C009-001B-0.5-1.0	C009-001B	2697343	814203	10/21/2003	0.5	1.	0.02				STL		
NLD	C009-001B-1.0-1.5	C009-001B	2697343	814203	10/21/2003	1.	1.5	0.17				STL		
NLD	C009-001C-0.0-0.5	C009-001C	2697326	814193	10/21/2003	0.	0.5	0.54				STL		
NLD	C009-001D-0.0-0.5	C009-001D	2697304	814178	10/20/2003	0.	0.5	0.01	U			STL		
NLD	C009-001D-0.5-1.0	C009-001D	2697304	814178	10/20/2003	0.5	1.	0.26				STL		
NLD	C009-001D-1.0-1.5	C009-001D	2697304	814178	10/20/2003	1.	1.5	0.01	U			STL		
NLD	C009-001E-0.0-0.5	C009-001E	2697315	814198	10/21/2003	0.	0.5	11.00				STL		
NLD	C009-001E-0.5-1.0	C009-001E	2697315	814198	10/21/2003	0.5	1.	0.45				STL		
NLD	C010-001-01-.5-1.0	C010-001	2697308	814362	09/18/2003	0.5	1.	9.70				STL		**

NEW BEDFORD HARBOR
 NORTH LOBE DREDGING CONFIRMATORY SAMPLES
 TOTAL PCB RESULTS (MG/KG)

Study ID	Sample ID	Station	Northing	Easting	Start Date	Depth Top	Depth Bot	Total PCB	Qual	Soil Type	Soil Color	Source	Remed*	Comments
NLD	C010-001-01-.5-1.0REP	C010-001	2697308	814362	09/18/2003	0.5	1.	12.00				STL		**
NLD	C010-001A-0.0-0.5	C010-001A	2697328	814359	09/18/2003	0.	0.5	37.00				STL		
NLD	C010-001B-0.0-0.5	C010-001B	2697330	814374	09/18/2003	0.	0.5	32.00				STL		
NLD	C010-001C-0.0-0.5	C010-001C	2697307	814358	09/18/2003	0.	0.5	24.00				STL		
NLD	C010-001D-0.0-0.5	C010-001D	2697289	814349	09/18/2003	0.	0.5	5.20				STL		
NLD	C010-001E-0.0-0.5	C010-001E	2697286	814370	09/18/2003	0.	0.5	0.05				STL		
NLD	C010-001E-0.0-0.5REP	C010-001E	2697286	814370	09/18/2003	0.	0.5	0.06				STL		

Notes:

U = Result is non-detect

STL = Severn Trent Laboratories

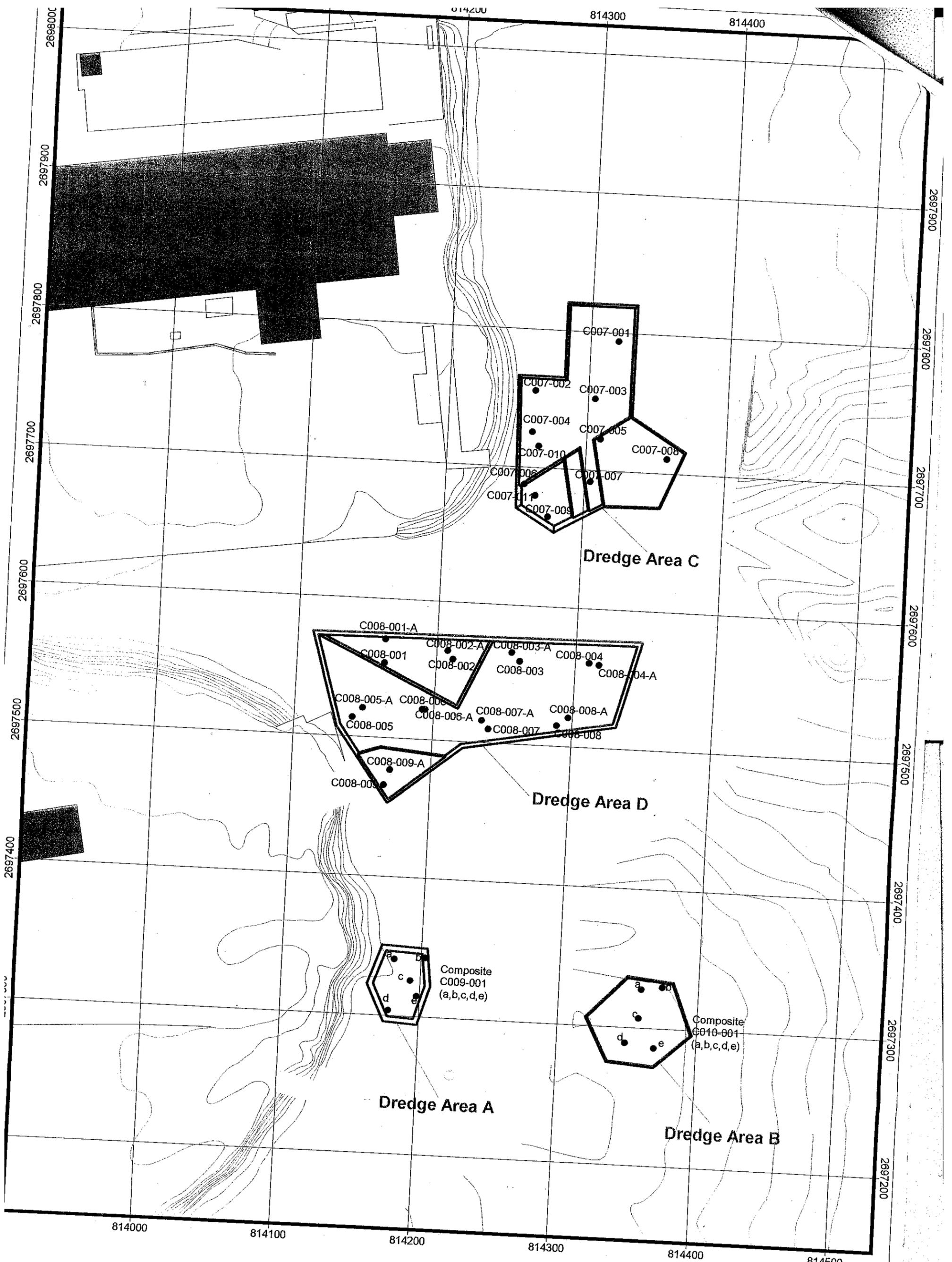
** This sample is a composite of samples C010-001A-0.5-1.0, C010-001B-0.5-1.0, C010-001C-0.5-1.0, C010-001D-0.5-1.0, and C010-001E-0.5-1.0. The sample was composited according to the procedures described in the project Field Sampling Plan (FSP). The means of the Northings and Eastings for stations C010-001A, C010-001B, C010-001C, C010-001D, and C010-001E are used as the Northing and Easting for this sample.

The 0.0-0.5 feet samples of the five locations (C010-001A-0.0-0.5, C010-001B-0.0-0.5, C010-001C-0.0-0.5, C010-001D-0.0-0.5, and C010-001E-0.0-0.5) were later sent to the laboratory for analysis for individual sample results as shown in this table.

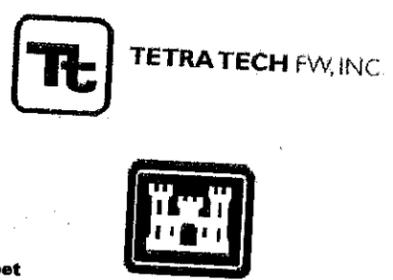
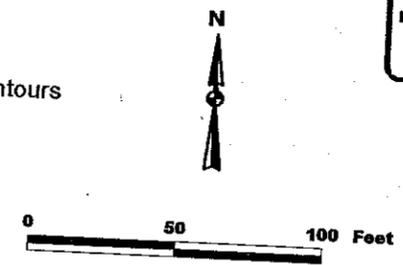
Appendix B
Figure B-1 North Lobe Dredging Proposed Dredge Areas and
Actual Confirmatory Sampling Locations

Individual PCB Results

Station Id	C010-001						C010-001A		C010-001B		C010-001C		C010-001D	
Samp Id	C009-001E-0.5-1.0		C010-001-01-5-1.0		C010-001-01-5-1.0REP		C010-001A-0.0-0.5		C010-001B-0.0-0.5		C010-001C-0.0-0.5		C010-001D-0.0-0.5	
Start Date	10/21/03		09/18/03		09/18/03		09/18/03		09/18/03		09/18/03		09/18/03	
Northing	2,697,315		2,697,308		2,697,308		2,697,328		2,697,330		2,697,307		2,697,289	
Easting	814,198		814,362		814,362		814,359		814,374		814,358		814,349	
Cleanup Level														
Description	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual
2,4'-DiCB (BZ-8)	0.002	U	0.053		0.064		0.21		0.15		0.12		0.028	
2,2',5'-TriCB (BZ-18)	0.002	U	0.18		0.22		0.7		0.51		0.4		0.095	
2,4,4'-TriCB (BZ-28)	0.003	P	0.6		0.76		2.6	D	2.1		1.5		0.29	
2,2',3,5'-TetraCB (BZ-44)	0.013		0.21		0.26		0.8		0.65		0.5		0.12	
2,2',5,5'-TetraCB (BZ-54)	0.025		0.34		0.43		1.2		1.2		0.85		0.19	
2,3',4,4'-TetraCB (BZ-66)	0.024		0.48		0.6		1.8		1.5		1.1		0.27	
2,2',4,5,5'-PentaCB (BZ-101)	0.029		0.48	P	0.62	P	1.8	P	1.6		1.2		0.27	P
2,3,3',4,4'-PentaCB (BZ-105)	0.011	ZZ	0.15	ZZ	0.18	ZZ	0.53	P	0.44	P	0.33	P	0.076	ZZ
2,3',4,4',5'-PentaCB (BZ-118)	0.026		0.46		0.58		1.6		1.5		1.1		0.25	
2,2',3,3',4,4'-HexaCB (BZ-128)	0.005		0.072		0.088		0.26		0.2		0.16		0.035	
2,2',3,4,4',5'-HexaCB (BZ-138)	0.021		0.3		0.38		1.1		0.93		0.71		0.16	
2,2',4,4',5,5'-HexaCB (BZ-153)	0.015	P	0.3	P	0.38	P	1.1	P	1.1	P	0.78	P	0.16	P
2,2',3,3',4,4',5'-HeptaCB (BZ-170)	0.002	U	0.036		0.046		0.13		0.12		0.088		0.018	
2,2',3,4,4',5,5'-HeptaCB (BZ-180)	0.003		0.051		0.064		0.18		0.17		0.13		0.026	
2,2',3,4',5,5',6'-HeptaCB (BZ-187)	0.002	U	0.027	P	0.032	U	0.1	P	0.096	P	0.074	P	0.012	P
2,2',3,3',4,4',5,6'-OctaCB (BZ-195)	0.002	U	0.016	U	0.032	U	0.052	U	0.053	U	0.043	U	0.012	U
2,2',3,3',4,4',5,5',6'-NonaCB (BZ-206)	0.002	U	0.016	U	0.032	U	0.052	U	0.053	U	0.043	U	0.012	U
DecaCB - Congener (BZ-209)	0.002	U	0.016	U	0.032	U	0.052	U	0.053	U	0.043	U	0.012	U
Total CONG	0.17		3.7		4.7		14		12		9		2	
Sum of NOAA Congeners x 2.6 + 0	0.45		9.7		12		37		32		24		5.2	
Total MonoCB														
Total DiCB														
Total TriCB														
Total TetraCB														
Total PentaCB														
Total HexaCB														
Total HeptaCB														
Total OctaCB														
Total NonaCB														
Total DecaCB														
Total PCB Homs														
Total PCB	0.45		9.7		12		37		32		24		5.2	



- Confirmatory Sample Locations
- Topographic and Bathymetric Contours
- ▭ North Lobe Dredge Areas
- Buildings



**NEW BEDFORD HARBOR SUPERFUND SITE
BRISTOL COUNTY, MASSACHUSETTS**

**Figure B-1
North Lobe Dredging
Proposed Dredge Areas and
Actual Confirmatory Sampling Locations**

DRAFT: DECEMBER 31, 2003

MA STATE PLANE
NAD 83 FEET
NGVD 29
1 FOOT CONTOUR INTERVAL

P:\Terc-5197\N\N\GIS\WORKDIR\03-01220407-001.apr
North Lobe Sampling Layout

Appendix C
Table of North Lobe Dredging Confirmatory Sampling Congener
and Homologue Group Results

Individual PCB Results

Station Id	C007-001				C007-002									
Samp Id	C007-001-0.0-0.5		C007-001-0.5-1.0		C007-002-0.0-0.5		C007-002-0.5-1.0		C007-002-1.0-1.5		C007-002-1.5-2.0		C007-002-2.0-2.5	
Start Date	10/20/03		10/20/03		10/20/03		10/20/03		10/20/03		10/20/03		10/20/03	
Northing	2,697,794		2,697,794		2,697,756		2,697,756		2,697,756		2,697,756		2,697,756	
Easting	814,320		814,320		814,262		814,262		814,262		814,262		814,262	
Cleanup Level														
Description	Result	Final Qual												
2,4'-DiCB (BZ-8)	0.016	P	0.005		0.72		0.052		0.003	P	0.002	U	0.002	U
2,2',5'-TriCB (BZ-18)	0.058	P	0.015		2.2		0.13		0.007	P	0.002	U	0.002	U
2,4,4'-TriCB (BZ-28)	0.22		0.054		6.4		0.34		0.013		0.003		0.003	
2,2',3,5'-TetraCB (BZ-44)	0.06		0.015		2		0.11		0.003	P	0.002	U	0.002	U
2,2',5,5'-TetraCB (BZ-54)	0.12		0.032		2.8		0.17		0.007	P	0.002	U	0.002	U
2,3',4,4'-TetraCB (BZ-66)	0.14		0.036		3.5		0.19		0.005		0.002	U	0.002	U
2,2',4,5,5'-PentaCB (BZ-101)	0.12	P	0.033	P	2.4	P	0.16	P	0.003	P	0.002	U	0.002	U
2,3,3',4,4'-PentaCB (BZ-105)	0.037	ZZ	0.009	ZZ	0.69	ZZ	0.054	ZZ	0.003	U	0.002	U	0.002	U
2,3',4,4',5'-PentaCB (BZ-118)	0.11		0.03		2		0.14		0.004	P	0.002	U	0.002	U
2,2',3,3',4,4'-HexaCB (BZ-128)	0.017		0.005		0.26		0.025		0.003	U	0.002	U	0.002	U
2,2',3,4,4',5'-HexaCB (BZ-138)	0.067		0.018		1.2		0.11		0.003	U	0.002	U	0.002	U
2,2',4,4',5,5'-HexaCB (BZ-153)	0.08	P	0.022	P	1.3	P	0.094	P	0.003	U	0.002	U	0.002	U
2,2',3,3',4,4',5'-HeptaCB (BZ-170)	0.011	U	0.003		0.18	U	0.013		0.003	U	0.002	U	0.002	U
2,2',3,4,4',5,5'-HeptaCB (BZ-180)	0.013		0.004		0.2		0.017		0.003	U	0.002	U	0.002	U
2,2',3,4',5,5',6-HeptaCB (BZ-187)	0.011	U	0.003	U	0.18	U	0.009	U	0.003	U	0.002	U	0.002	U
2,2',3,3',4,4',5,6-OctaCB (BZ-195)	0.011	U	0.003	U	0.18	U	0.009	U	0.003	U	0.002	U	0.002	U
2,2',3,3',4,4',5,5',6-NonaCB (BZ-206)	0.011	U	0.003	U	0.18	U	0.009	U	0.003	U	0.002	U	0.002	U
DecaCB - Congener (BZ-209)	0.011	U	0.003	U	0.18	U	0.009	U	0.003	U	0.002	U	0.002	U
Total CONG	1.1		0.28		26		1.6		0.045		0.003		0.003	
Sum of NOAA Congeners x 2.6 + 0	2.8		0.73		67		4.2		0.12		0.008		0.007	
Total MonoCB											0	U		
Total DiCB											0.001	U		
Total TriCB											0.004			
Total TetraCB											0.005			
Total PentaCB											0.005			
Total HexaCB											0.002			
Total HeptaCB											0	U		
Total OctaCB											0	U		
Total NonaCB											0	U		
Total DecaCB											0	U		
Total PCB Homs											0.015			
Total PCB	2.8		0.73		67		4.2		0.12		0.008		0.007	

Individual PCB Results

Station Id	C007-003		C007-004						C007-005					
Samp Id	C007-003-0.0-0.5		C007-004-0.0-0.5		C007-004-0.5-1.0		C007-004-1.0-1.5		C007-004-1.5-2.0		C007-004-1.5-2.0REP		C007-005-0.0-0.5	
Start Date	10/20/03		10/20/03		10/20/03		10/20/03		10/20/03		10/20/03		10/20/03	
Northing	2,697,752		2,697,726		2,697,726		2,697,726		2,697,726		2,697,726		2,697,723	
Easting	814,305		814,261		814,261		814,261		814,261		814,261		814,310	
Cleanup Level														
Description	Result	Final Qual	Result	Final Qual	Result	Final Qual								
2,4'-DiCB (BZ-8)	0.017		0.19		0.26		0.56		5.8	D	4.6		0.003	U
2,2',5'-TriCB (BZ-18)	0.054		0.61		0.87		1.6		12	D	12	D	0.007	P
2,4,4'-TriCB (BZ-28)	0.2		2.2		2.9	D	4.8		22	D	21	D	0.022	
2,2',3,5'-TetraCB (BZ-44)	0.06		0.66		0.91		1.4		3.5		3.2		0.006	
2,2',5,5'-TetraCB (BZ-54)	0.11		1.1		1.6		2		11	D	11	D	0.013	
2,3',4,4'-TetraCB (BZ-66)	0.14		1.4		1.8		2.7		3.3		3.1		0.013	
2,2',4,5,5'-PentaCB (BZ-101)	0.13	P	1.4	P	1.7	P	2	P	2.1	P	2		0.011	P
2,3,3',4,4'-PentaCB (BZ-105)	0.036	ZZ	0.34	ZZ	0.44	ZZ	0.53	ZZ	0.49	ZZ	0.46	ZZ	0.004	ZZ
2,3',4,4',5-PentaCB (BZ-118)	0.12		1.2		1.5		1.7		1.6		1.5		0.011	
2,2',3,3',4,4'-HexaCB (BZ-128)	0.018		0.18		0.22		0.21		0.33		0.29		0.003	U
2,2',3,4,4',5'-HexaCB (BZ-138)	0.073		0.79		1		0.98		1.5		1.3		0.006	
2,2',4,4',5,5'-HexaCB (BZ-153)	0.084	P	0.91	P	1.1	P	1.1	P	1.6	P	1.5	P	0.008	P
2,2',3,3',4,4',5-HeptaCB (BZ-170)	0.011		0.1		0.12		0.13	U	0.24		0.21		0.003	U
2,2',3,4,4',5,5'-HeptaCB (BZ-180)	0.015		0.14		0.18		0.18		0.36		0.33		0.003	U
2,2',3,4',5,5',6-HeptaCB (BZ-187)	0.009	P	0.085	P	0.096	P	0.13	U	0.22	P	0.19	P	0.003	U
2,2',3,3',4,4',5,6-OctaCB (BZ-195)	0.005	U	0.063	U	0.063	U	0.13	U	0.12	U	0.13	U	0.003	U
2,2',3,3',4,4',5,5',6-NonaCB (BZ-206)	0.005	U	0.063	U	0.063	U	0.13	U	0.12	U	0.13	U	0.003	U
DecaCB - Congener (BZ-209)	0.005	U	0.063	U	0.063	U	0.13	U	0.12	U	0.13	U	0.003	U
Total CONG	1.1		11		15		20		66		63		0.1	
Sum of NOAA Congeners x 2.6 + 0	2.8		29		38		51		170		160		0.26	
Total MonoCB														
Total DiCB														
Total TriCB														
Total TetraCB														
Total PentaCB														
Total HexaCB														
Total HeptaCB														
Total OctaCB														
Total NonaCB														
Total DecaCB														
Total PCB Homs														
Total PCB	2.8		29		38		51		170		160		0.26	

Individual PCB Results

Station Id	C007-006										C007-007			
Samp Id	C007-006-0.0-0.5		C007-006-0.5-1.0		C007-006-1.0-1.5		C007-006-1.5-2.0		C007-006-2.0-2.5		C007-007-0.0-0.5		C007-007-0.5-1.0	
Start Date	10/20/03		10/20/03		10/20/03		10/20/03		10/20/03		10/20/03		10/20/03	
Northing	2,697,688		2,697,688		2,697,688		2,697,688		2,697,688		2,697,692		2,697,692	
Easting	814,257		814,257		814,257		814,257		814,257		814,304		814,304	
Cleanup Level														
Description	Result	Final Qual												
2,4'-DiCB (BZ-8)	0.87		8.6	D	4.6		1.7		0.086	U	0.008	U	0.007	U
2,2',5'-TriCB (BZ-18)	2.5	D	17	D	19	D	4.5		0.086	U	0.008	U	0.007	U
2,4,4'-TriCB (BZ-28)	6.5	D	30	D	31	D	9.1	D	0.086	U	0.008	U	0.007	U
2,2',3,5'-TetraCB (BZ-44)	1.4		4.3		5.6	P	3.8		0.53		0.008	U	0.007	U
2,2',5,5'-TetraCB (BZ-54)	2.7	D	15	D	43	D	16	D	0.88		0.008	U	0.007	U
2,3',4,4'-TetraCB (BZ-66)	2.9	D	5.4		12	D	6.8	D	1.1		0.008	U	0.007	U
2,2',4,5,5'-PentaCB (BZ-101)	1.6	P	2.8	P	2.6		7.1	D	1.6		0.008	U	0.007	U
2,3,3',4,4'-PentaCB (BZ-105)	0.56	P	0.73	P	0.58	P	1.9	ZZ	0.64	P	0.008	U	0.007	U
2,3',4,4',5'-PentaCB (BZ-118)	1.4		2.1		1.1	P	5.2		1.4		0.008	U	0.007	U
2,2',3,3',4,4'-HexaCB (BZ-128)	0.22		0.42		0.43		1.3		0.3		0.008	U	0.007	U
2,2',3,4,4',5'-HexaCB (BZ-138)	0.89		1.9		2.2	P	5.4		1.3		0.008	U	0.007	U
2,2',4,4',5,5'-HexaCB (BZ-153)	0.9	P	1.8	P	2.2	P	4.6	P	0.97	P	0.008	U	0.007	U
2,2',3,3',4,4',5'-HeptaCB (BZ-170)	0.13		0.29		0.62		0.83		0.14		0.008	U	0.007	U
2,2',3,4,4',5,5'-HeptaCB (BZ-180)	0.18		0.43		0.86		1.1		0.21		0.008	U	0.007	U
2,2',3,4',5,5',6'-HeptaCB (BZ-187)	0.12	P	0.27	P	0.91	P	0.71	P	0.11	P	0.008	U	0.007	U
2,2',3,3',4,4',5,6'-OctaCB (BZ-195)	0.049	U	0.15	U	0.16	U	0.14	U	0.086	U	0.008	U	0.007	U
2,2',3,3',4,4',5,5',6'-NonaCB (BZ-206)	0.049	U	0.15	U	0.16	U	0.14	U	0.086	U	0.008	U	0.007	U
DecaCB - Congener (BZ-209)	0.049	U	0.15	U	0.16	U	0.14	U	0.086	U	0.008	U	0.007	U
Total CONG	23		91		130		70		9.2		0		0	
Sum of NOAA Congeners x 2.6 + 0	60		240		330		180		24			U		U
Total MonoCB							0.036	U						
Total DiCB							10.3							
Total TriCB							58							
Total TetraCB							87.4							
Total PentaCB							69.6							
Total HexaCB							39.8							
Total HeptaCB							6.47							
Total OctaCB							1.07							
Total NonaCB							0.222							
Total DecaCB							0.088							
Total PCB Homs							270							
Total PCB	60		240		330		180		24			U		U

Individual PCB Results

Station Id	C007-008				C007-009				C007-010					
Samp Id	C007-008-0.0-0.5		C007-008-0.5-1.0		C007-009-0.0-0.5		C007-009-0.0-0.5REP		C007-009-0.5-1.0		C007-009-1.0-1.5		C007-010-02-0.0-0.5	
Start Date	10/20/03		10/20/03		10/20/03		10/20/03		10/20/03		10/20/03		11/25/03	
Northing	2,697,711		2,697,711		2,697,665		2,697,665		2,697,665		2,697,665		2,697,716	
Easting	814,358		814,358		814,275		814,275		814,275		814,275		814,266	
Cleanup Level														
Description	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual
2,4'-DiCB (BZ-8)	0.003		0.006	U	0.092		0.097		0.014	P	0.009	P	0.003	U
2,2',5'-TriCB (BZ-18)	0.003	P	0.006	U	0.35		0.35		0.051		0.033		0.003	U
2,4,4'-TriCB (BZ-28)	0.006		0.006	U	1.2		1.2		0.17		0.11		0.007	
2,2',3,5'-TetraCB (BZ-44)	0.002	U	0.006	U	0.36		0.36		0.05		0.031		0.003	U
2,2',5,5'-TetraCB (BZ-54)	0.004		0.006	U	0.72		0.72		0.097		0.063		0.003	U
2,3',4,4'-TetraCB (BZ-66)	0.004		0.006	U	0.8		0.81		0.11		0.069		0.006	
2,2',4,5,5'-PentaCB (BZ-101)	0.002	U	0.006	U	0.75	P	0.76	P	0.1	P	0.064	P	0.004	
2,3,3',4,4'-PentaCB (BZ-105)	0.002	U	0.006	U	0.16	ZZ	0.16	ZZ	0.028	P	0.018	P	0.003	U
2,3',4,4',5'-PentaCB (BZ-118)	0.003		0.006	U	0.65		0.65		0.093		0.058		0.005	
2,2',3,3',4,4'-HexaCB (BZ-128)	0.002	U	0.006	U	0.079		0.077		0.013		0.008		0.003	U
2,2',3,4,4',5'-HexaCB (BZ-138)	0.002	U	0.006	U	0.37		0.37		0.06		0.036		0.003	U
2,2',4,4',5,5'-HexaCB (BZ-153)	0.002	U	0.006	U	0.48	P	0.48	P	0.068	P	0.043	P	0.003	U
2,2',3,3',4,4',5-HeptaCB (BZ-170)	0.002	U	0.006	U	0.058	U	0.059	U	0.011	P	0.008	U	0.003	U
2,2',3,4,4',5,5'-HeptaCB (BZ-180)	0.002	U	0.006	U	0.073		0.073		0.012		0.008	U	0.003	U
2,2',3,4',5,5',6-HeptaCB (BZ-187)	0.002	U	0.006	U	0.058	U	0.059	U	0.008	U	0.008	U	0.003	U
2,2',3,3',4,4',5,6-OctaCB (BZ-195)	0.002	U	0.006	U	0.058	U	0.059	U	0.008	U	0.008	U	0.003	U
2,2',3,3',4,4',5,5',6-NonaCB (BZ-206)	0.002	U	0.006	U	0.058	U	0.059	U	0.033		0.008	U	0.003	U
DecaCB - Congener (BZ-209)	0.002	U	0.006	U	0.058	U	0.059	U	0.018		0.008	U	0.003	U
Total CONG	0.021		0		6.1		6.1		0.93		0.54		0.021	
Sum of NOAA Congeners x 2.6 + 0	0.056			U	16		16		2.4		1.4		0.054	
Total MonoCB														
Total DiCB														
Total TriCB														
Total TetraCB														
Total PentaCB														
Total HexaCB														
Total HeptaCB														
Total OctaCB														
Total NonaCB														
Total DecaCB														
Total PCB Homs														
Total PCB	0.056			U	16		16		2.4		1.4		0.054	

Individual PCB Results

Station Id		C007-011				C008-001								
Samp Id	C007-010-02-0.5-1.0	C007-011-02-0.0-0.5		C007-011-02-0.5-1.0		C007-011-02-1.0-1.5		C008-001-0.0-0.5		C008-001-0.5-1.0		C008-001-1.0-1.5		
Start Date	11/25/03	11/25/03		11/25/03		11/25/03		10/17/03		10/17/03		10/17/03		
Northing	2,697,716	2,697,680		2,697,680		2,697,680		2,697,554		2,697,554		2,697,554		
Easting	814,266	814,265		814,265		814,265		814,163		814,163		814,163		
Cleanup Level														
Description	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual
2,4'-DiCB (BZ-8)	0.002	U	0.003	P	0.003	U	0.002	U	0.46		0.005	P	0.002	U
2,2',5'-TriCB (BZ-18)	0.002	U	0.011		0.003	U	0.002	U	1.2		0.002	U	0.002	U
2,4,4'-TriCB (BZ-28)	0.002	U	0.037		0.004	ZZ	0.002	U	4	D	0.007		0.002	U
2,2',3,5'-TetraCB (BZ-44)	0.002	U	0.012		0.003	U	0.002	U	1		0.004	P	0.002	U
2,2',5,5'-TetraCB (BZ-54)	0.002	U	0.025		0.003	U	0.002	U	3.1	D	0.006		0.002	U
2,3',4,4'-TetraCB (BZ-66)	0.002	U	0.024		0.003	U	0.002	U	2	D	0.005		0.002	U
2,2',4,5,5'-PentaCB (BZ-101)	0.002	U	0.024	P	0.003	U	0.002	U	2	D	0.004		0.002	U
2,3,3',4,4'-PentaCB (BZ-105)	0.002	U	0.006	P	0.003	U	0.002	U	0.37	ZZ	0.002	ZZ	0.002	U
2,3',4,4',5'-PentaCB (BZ-118)	0.002	U	0.021		0.003	U	0.002	U	1.4	D	0.004		0.002	U
2,2',3,3',4,4'-HexaCB (BZ-128)	0.002	U	0.003		0.003	U	0.002	U	0.22		0.002	U	0.002	U
2,2',3,4,4',5'-HexaCB (BZ-138)	0.002	U	0.011		0.003	U	0.002	U	0.93		0.003		0.002	U
2,2',4,4',5,5'-HexaCB (BZ-153)	0.002	U	0.014	P	0.003	U	0.002	U	1.1	P	0.003	P	0.002	U
2,2',3,3',4,4',5'-HeptaCB (BZ-170)	0.002	U	0.002	U	0.003	U	0.002	U	0.15		0.002	U	0.002	U
2,2',3,4,4',5,5'-HeptaCB (BZ-180)	0.002	U	0.002	J	0.003	U	0.002	U	0.26		0.002	U	0.002	U
2,2',3,4',5,5',6'-HeptaCB (BZ-187)	0.002	U	0.002	U	0.003	U	0.002	U	0.18	P	0.002	U	0.002	U
2,2',3,3',4,4',5,6'-OctaCB (BZ-195)	0.002	U	0.002	U	0.003	U	0.002	U	0.035	U	0.002	U	0.002	U
2,2',3,3',4,4',5,5',6'-NonaCB (BZ-206)	0.002	U	0.002	U	0.003	U	0.002	U	0.046		0.002	U	0.002	U
DecaCB - Congener (BZ-209)	0.002	U	0.002	U	0.003	U	0.002	U	0.035	U	0.002	U	0.002	U
Total CONG	0		0.19		0.004		0		18		0.043		0	
Sum of NOAA Congeners x 2.6 + 0		U	0.5		0.01		U		48		0.11		U	
Total MonoCB														
Total DiCB														
Total TriCB														
Total TetraCB														
Total PentaCB														
Total HexaCB														
Total HeptaCB														
Total OctaCB														
Total NonaCB														
Total DecaCB														
Total PCB Homs														
Total PCB		U	0.5		0.01		U		48		0.11		U	

Individual PCB Results

Station Id	C008-001-A		C008-002						C008-003					
Samp Id	C008-001-A-1.5-2.0		C008-002-0.0-0.5		C008-002-0.5-1.0		C008-002-1.0-1.5		C008-002-1.5-2.0		C008-003-0.0-0.5		C008-003-0.5-1.0	
Start Date	10/07/03		10/17/03		10/17/03		10/17/03		10/17/03		10/17/03		10/17/03	
Northing	2,697,571		2,697,559		2,697,559		2,697,559		2,697,559		2,697,560		2,697,560	
Easting	814,163		814,212		814,212		814,212		814,212		814,260		814,260	
Cleanup Level														
Description	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual
2,4'-DICB (BZ-8)	7.8	D	0.06		0.006	P	0.002	U	0.002	U	0.7		0.56	
2,2',5'-TriCB (BZ-18)	16	D	0.16		0.002	U	0.002	U	0.002	U	1.8		1.6	
2,4,4'-TriCB (BZ-28)	32	D	0.36		0.009	P	0.002	U	0.002	P	5.6	D	4.7	D
2,2',3,5'-TetraCB (BZ-44)	9.2	D	0.13		0.005		0.002	U	0.002	U	1.5		1.3	
2,2',5,5'-TetraCB (BZ-54)	15	D	0.37		0.008		0.002	U	0.002	U	4.2	D	3.2	D
2,3',4,4'-TetraCB (BZ-66)	7.8	D	0.21		0.005		0.002	U	0.002	U	3	D	2.6	D
2,2',4,5,5'-PentaCB (BZ-101)	4.7	DP	0.21		0.005		0.002	U	0.002	U	3	D	2.6	D
2,3,3',4,4'-PentaCB (BZ-105)	1	P	0.043	ZZ	0.002	U	0.002	U	0.002	U	0.54	ZZ	0.54	ZZ
2,3',4,4',5'-PentaCB (BZ-118)	3.6	D	0.17		0.004		0.002	U	0.002	U	2.1		2.2	D
2,2',3,3',4,4'-HexaCB (BZ-128)	0.51		0.027		0.002	U	0.002	U	0.002	U	0.32		0.3	
2,2',3,4,4',5'-HexaCB (BZ-138)	2.5	D	0.12		0.003		0.002	U	0.002	U	1.4		1.3	
2,2',4,4',5,5'-HexaCB (BZ-153)	1.9	P	0.15	P	0.004	P	0.002	U	0.002	U	1.6	P	1.6	P
2,2',3,3',4,4',5'-HeptaCB (BZ-170)	0.31		0.02		0.002	U	0.002	U	0.002	U	0.2		0.2	
2,2',3,4,4',5,5'-HeptaCB (BZ-180)	0.45		0.027		0.002	U	0.002	U	0.002	U	0.31		0.31	
2,2',3,4',5,5',6'-HeptaCB (BZ-187)	0.29	P	0.018	U	0.002	U	0.002	U	0.002	U	0.21	P	0.21	P
2,2',3,3',4,4',5,6'-OctaCB (BZ-195)	0.03	U	0.018	U	0.002	U	0.002	U	0.002	U	0.059	U	0.05	U
2,2',3,3',4,4',5,5',6'-NonaCB (BZ-206)	0.042		0.018	U	0.002	U	0.002	U	0.002	U	0.059	U	0.05	U
DecaCB - Congener (BZ-209)	0.03	U	0.018	U	0.002	U	0.002	U	0.002	U	0.059	U	0.05	U
Total CONG	100		2.1		0.048		0		0.002		27		23	
Sum of NOAA Congeners x 2.6 + 0	270		5.4		0.13			U	0.005		69		60	
Total MonoCB							0	U					0.009	U
Total DiCB							0	U					2.37	
Total TriCB							0.003						12.6	
Total TetraCB							0.004						19.2	
Total PentaCB							0.003						14.2	
Total HexaCB							0.001						7.09	
Total HeptaCB							0	U					1.04	
Total OctaCB							0	U					0.229	
Total NonaCB							0	U					0.029	
Total DecaCB							0	U					0.016	
Total PCB Homs							0.011						57	
Total PCB	270		5.4		0.13			U	0.005		69		60	

Individual PCB Results

Station Id		C008-004													
Samp Id	C008-003-1.0-1.5		C008-003-1.5-2.0		C008-004-0.0-0.5		C008-004-0.0-0.5REP		C008-004-0.5-1.0		C008-004-1.0-1.5		C008-004-1.5-2.0		
Start Date	10/17/03		10/17/03		10/17/03		10/17/03		10/17/03		10/17/03		10/17/03		
Northing	2,697,560		2,697,560		2,697,561		2,697,561		2,697,561		2,697,561		2,697,561		
Easting	814,260		814,260		814,310		814,310		814,310		814,310		814,310		
Cleanup Level															
Description	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	
2,4'-DiCB (BZ-8)	0.15		0.16		0.17		0.19		0.34		0.037		0.004		
2,2',5'-TriCB (BZ-18)	0.47		0.46		0.69		0.72		0.91		0.083		0.01		
2,4,4'-TriCB (BZ-28)	1.4		1.3		2.7	D	2.8	D	2.7	D	0.17		0.024		
2,2',3,5'-TetraCB (BZ-44)	0.44		0.41		0.83		0.87		0.74		0.051		0.007	P	
2,2',5,5'-TetraCB (BZ-54)	0.98		0.91		2.1	D	2.2	D	2.3	D	0.12		0.018		
2,3',4,4'-TetraCB (BZ-66)	0.87		0.73		1.3		1.4		1.1		0.074		0.013		
2,2',4,5,5'-PentaCB (BZ-101)	0.86		0.72		1.3	P	1.4		1		0.061		0.011	P	
2,3,3',4,4'-PentaCB (BZ-105)	0.19	ZZ	0.16	ZZ	0.37	ZZ	0.4	P	0.27	P	0.016	P	0.003	P	
2,3',4,4',5'-PentaCB (BZ-118)	0.77		0.63		1.2		1.3		0.91		0.046		0.008		
2,2',3,3',4,4'-HexaCB (BZ-128)	0.1		0.093		0.21		0.23		0.17		0.009		0.002	U	
2,2',3,4,4',5'-HexaCB (BZ-138)	0.45		0.41		0.89		0.94		0.72		0.041		0.007		
2,2',4,4',5,5'-HexaCB (BZ-153)	0.6	P	0.51	P	0.95	P	1	P	0.76	P	0.047	P	0.008	P	
2,2',3,3',4,4',5'-HeptaCB (BZ-170)	0.064		0.059		0.11		0.12		0.099		0.007	P	0.002	U	
2,2',3,4,4',5,5'-HeptaCB (BZ-180)	0.096		0.087		0.16		0.17		0.14		0.01		0.002	U	
2,2',3,4',5,5',6-HeptaCB (BZ-187)	0.064	P	0.053	P	0.1	P	0.1	P	0.088	P	0.009	P	0.002	U	
2,2',3,3',4,4',5,6-OctaCB (BZ-195)	0.043	U	0.036	U	0.04	U	0.036	U	0.035	U	0.006	U	0.002	U	
2,2',3,3',4,4',5,5',6-NonaCB (BZ-206)	0.043	U	0.036	U	0.04	U	0.036	U	0.035	U	0.058		0.003	P	
DecaCB - Congener (BZ-209)	0.043	U	0.036	U	0.04	U	0.036	U	0.035	U	0.037		0.003		
Total CONG	7.5		6.7		13		14		12		0.88		0.12		
Sum of NOAA Congeners x 2.6 + 0	20		17		34		36		32		2.3		0.31		
Total MonoCB									0.015	U					
Total DiCB									1.52						
Total TriCB									7.89						
Total TetraCB									10.8						
Total PentaCB									7.8						
Total HexaCB									4.13						
Total HeptaCB									0.592						
Total OctaCB									0.096						
Total NonaCB									0.013	U					
Total DecaCB									0.018	U					
Total PCB Homs									33						
Total PCB	20		17		34		36		32		2.3		0.31		

Individual PCB Results

Station Id	C008-004-A		C008-005		C008-005-A		C008-006		C008-006-A		C008-007				
Samp Id	C008-004-A-1.0-1.5		C008-005-1.0-1.5		C008-005-1.5-2.0		C008-005-A-0.0-0.5		C008-006-0.0-0.5		C008-006-A-0.5-1.0		C008-007-0.0-0.5		
Start Date	10/07/03		10/17/03		10/17/03		10/07/03		10/17/03		10/07/03		10/17/03		
Northing	2,697,560		2,697,514		2,697,514		2,697,521		2,697,522		2,697,522		2,697,510		
Easting	814,317		814,142		814,142		814,149		814,192		814,194		814,240		
Cleanup Level															
Description	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	
2,4'-DICB (BZ-8)	0.73		0.085		0.024		0.012		0.079		0.16		0.73		
2,2',5'-TriCB (BZ-18)	2.5	D	0.26		0.074		0.034		0.24		0.47		2		
2,4,4'-TriCB (BZ-28)	6.3	D	0.74		0.21		0.094		0.71		2	D	4.7		
2,2',3,5'-TetraCB (BZ-44)	2.1	D	0.24		0.072		0.034		0.24		0.5		1.4		
2,2',5,5'-TetraCB (BZ-54)	4.7	D	0.44		0.14		0.063		0.43		1.2	D	3.1		
2,3',4,4'-TetraCB (BZ-66)	3.1	D	0.43		0.13		0.067		0.49		1.4	D	2.2		
2,2',4,5,5'-PentaCB (BZ-101)	3.1	D	0.41	P	0.13		0.067	P	0.52		1.5	D	2.1		
2,3,3',4,4'-PentaCB (BZ-105)	0.59	ZZ	0.11	P	0.035	ZZ	0.021	P	0.12	ZZ	0.3	P	0.45	P	
2,3',4,4',5'-PentaCB (BZ-118)	2.5	D	0.36		0.12		0.062		0.46		1.3	D	1.7		
2,2',3,3',4,4'-HexaCB (BZ-128)	0.35		0.053		0.019		0.01		0.068		0.16		0.25		
2,2',3,4,4',5'-HexaCB (BZ-138)	1.6	D	0.24		0.082		0.048		0.3		0.76	D	1.2		
2,2',4,4',5,5'-HexaCB (BZ-153)	1.5	P	0.25	P	0.086	P	0.046	P	0.33	P	0.68	P	1.4	P	
2,2',3,3',4,4',5'-HeptaCB (BZ-170)	0.23		0.036	U	0.011		0.008		0.04		0.088		0.2	U	
2,2',3,4,4',5,5'-HeptaCB (BZ-180)	0.33		0.043		0.015		0.012		0.056		0.12		0.26		
2,2',3,4',5,5',6'-HeptaCB (BZ-187)	0.22	P	0.036	U	0.008	P	0.008	P	0.032	P	0.074	P	0.2	U	
2,2',3,3',4,4',5,6'-OctaCB (BZ-195)	0.022		0.036	U	0.007	U	0.003	U	0.018	U	0.014	U	0.2	U	
2,2',3,3',4,4',5,5',6'-NonaCB (BZ-206)	0.042		0.036	U	0.007	U	0.003	U	0.018	U	0.014	U	0.2	U	
DecaCB - Congener (BZ-209)	0.021	U	0.036	U	0.007	U	0.003	U	0.018	U	0.014	U	0.2	U	
Total CONG	30		3.7		1.2		0.59		4.1		11		22		
Sum of NOAA Congeners x 2.6 + 0	78		9.5		3		1.5		11		28		56		
Total MonoCB														0.013	U
Total DiCB														3.37	
Total TriCB														17.4	
Total TetraCB														24.5	
Total PentaCB														16.2	
Total HexaCB														7.84	
Total HeptaCB														1.31	
Total OctaCB														0.309	
Total NonaCB														0.045	
Total DecaCB														0.019	
Total PCB Homs														71	
Total PCB	78		9.5		3		1.5		11		28		56		

Individual PCB Results

Station Id		C008-007-A		C008-008		C008-008		C008-008		C008-008		C008-008		C008-008	
Samp Id		C008-007-0.5-1.0		C008-007-A-1.0-1.5		C008-008-0.0-0.5		C008-008-0.5-1.0		C008-008-1.0-1.5		C008-008-1.5-2.0		C008-008-1.5-2.0REP	
Start Date		10/17/03		10/07/03		10/17/03		10/17/03		10/17/03		10/17/03		10/17/03	
Northing		2,697,510		2,697,518		2,697,515		2,697,515		2,697,515		2,697,515		2,697,515	
Easting		814,240		814,235		814,289		814,289		814,289		814,289		814,289	
Cleanup Level															
Description	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	
2,4'-DiCB (BZ-8)	0.019		0.002	U	0.6		0.15		0.002	U	0.002	U	0.002	U	
2,2',5'-TriCB (BZ-18)	0.052		0.002	U	1.6		0.45		0.002	U	0.002	U	0.002	U	
2,4,4'-TriCB (BZ-28)	0.13		0.002	U	4.4	D	1.2		0.002	U	0.002	U	0.002	U	
2,2',3,5'-TetraCB (BZ-44)	0.039		0.002	U	1.3		0.41		0.002	U	0.002	U	0.002	U	
2,2',5,5'-TetraCB (BZ-54)	0.084		0.002	U	2.9		0.93		0.002	U	0.002	U	0.002	U	
2,3',4,4'-TetraCB (BZ-66)	0.067		0.002	U	2.2		0.75		0.002	U	0.002	U	0.002	U	
2,2',4,5,5'-PentaCB (BZ-101)	0.069		0.002	U	2.1		0.81		0.002	U	0.002	U	0.002	U	
2,3,3',4,4'-PentaCB (BZ-105)	0.014	ZZ	0.002	U	0.46	P	0.16	ZZ	0.002	U	0.002	U	0.002	U	
2,3',4,4',5'-PentaCB (BZ-118)	0.057		0.002	U	1.8		0.68		0.002	U	0.002	U	0.002	U	
2,2',3,3',4,4'-HexaCB (BZ-128)	0.008		0.002	U	0.26		0.097		0.002	U	0.002	U	0.002	U	
2,2',3,4,4',5'-HexaCB (BZ-138)	0.036		0.002	U	1.2		0.44		0.002	U	0.002	U	0.002	U	
2,2',4,4',5,5'-HexaCB (BZ-153)	0.045	P	0.002	U	1.5	P	0.56	P	0.002	U	0.002	U	0.002	U	
2,2',3,3',4,4',5'-HeptaCB (BZ-170)	0.006		0.002	U	0.18		0.064		0.002	U	0.002	U	0.002	U	
2,2',3,4,4',5,5'-HeptaCB (BZ-180)	0.008		0.002	U	0.27		0.093		0.002	U	0.002	U	0.002	U	
2,2',3,4',5,5',6'-HeptaCB (BZ-187)	0.005	U	0.002	U	0.17	P	0.06	P	0.002	U	0.002	U	0.002	U	
2,2',3,3',4,4',5,6'-OctaCB (BZ-195)	0.005	U	0.002	U	0.079	U	0.04	U	0.002	U	0.002	U	0.002	U	
2,2',3,3',4,4',5,5',6'-NonaCB (BZ-206)	0.005	U	0.002	U	0.079	U	0.04	U	0.002	U	0.002	U	0.002	U	
DecaCB - Congener (BZ-209)	0.005	U	0.002	U	0.079	U	0.04	U	0.002	U	0.002	U	0.002	U	
Total CONG	0.63		0		21		6.9		0		0		0		
Sum of NOAA Congeners x 2.6 + 0	1.7			U	54		18			U		U		U	
Total MonoCB															
Total DiCB															
Total TriCB															
Total TetraCB															
Total PentaCB															
Total HexaCB															
Total HeptaCB															
Total OctaCB															
Total NonaCB															
Total DecaCB															
Total PCB Homs															
Total PCB	1.7			U	54		18			U		U		U	

Individual PCB Results

Station Id	C008-009		C008-009-A		C009-001A						C009-001B			
Samp Id	C008-009-0.0-0.5		C008-009-A-0.5-1.0		C009-001A-0.0-0.5		C009-001A-0.5-1.0		C009-001A-1.0-1.5		C009-001A-1.5-2.0		C009-001B-0.0-0.5	
Start Date	10/17/03		10/07/03		10/21/03		10/21/03		10/21/03		10/21/03		10/21/03	
Northing	2,697,466		2,697,477		2,697,341		2,697,341		2,697,341		2,697,341		2,697,343	
Easting	814,167		814,171		814,181		814,181		814,181		814,181		814,203	
Cleanup Level														
Description	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual
2,4'-DiCB (BZ-8)	0.23		0.002	U	0.002	U	0.002	U	0.002	U	0.006	U	0.038	
2,2',5'-TriCB (BZ-18)	0.73		0.006	P	0.002	U	0.002	U	0.002	U	0.006	U	0.11	
2,4,4'-TriCB (BZ-28)	1.9		0.015		0.006		0.002	U	0.005		0.006	U	0.32	
2,2',3,5'-TetraCB (BZ-44)	0.74		0.005		0.002	U	0.002	U	0.002	U	0.006	U	0.12	
2,2',5,5'-TetraCB (BZ-54)	1.2		0.009		0.003		0.002	U	0.002		0.006	U	0.2	
2,3',4,4'-TetraCB (BZ-66)	1		0.007		0.004		0.002	U	0.003		0.006	U	0.19	
2,2',4,5,5'-PentaCB (BZ-101)	0.92	P	0.005	P	0.003	P	0.002	U	0.002	P	0.006	U	0.19	P
2,3,3',4,4'-PentaCB (BZ-105)	0.28	ZZ	0.002	P	0.002	U	0.002	U	0.002	U	0.006	U	0.062	ZZ
2,3',4,4',5'-PentaCB (BZ-118)	0.79		0.004		0.003		0.002	U	0.002		0.006	U	0.18	
2,2',3,3',4,4'-HexaCB (BZ-128)	0.14		0.002	U	0.002	U	0.002	U	0.002	U	0.006	U	0.03	
2,2',3,4,4',5'-HexaCB (BZ-138)	0.63		0.003		0.002	U	0.002	U	0.002	U	0.006	U	0.12	
2,2',4,4',5,5'-HexaCB (BZ-153)	0.56	P	0.003	P	0.002	U	0.002	U	0.002	U	0.006	U	0.12	P
2,2',3,3',4,4',5'-HeptaCB (BZ-170)	0.079		0.002	U	0.002	U	0.002	U	0.002	U	0.006	U	0.019	
2,2',3,4,4',5,5'-HeptaCB (BZ-180)	0.11		0.002	U	0.002	U	0.002	U	0.002	U	0.006	U	0.026	
2,2',3,4',5,5',6'-HeptaCB (BZ-187)	0.072	U	0.002	U	0.002	U	0.002	U	0.002	U	0.006	U	0.015	U
2,2',3,3',4,4',5,6'-OctaCB (BZ-195)	0.072	U	0.002	U	0.002	U	0.002	U	0.002	U	0.006	U	0.015	U
2,2',3,3',4,4',5,5',6'-NonaCB (BZ-206)	0.072	U	0.002	U	0.002	U	0.002	U	0.002	U	0.006	U	0.015	U
DecaCB - Congener (BZ-209)	0.072	U	0.002	U	0.002	U	0.002	U	0.002	U	0.006	U	0.015	U
Total CONG	9.3		0.058		0.019		0		0.014		0		1.7	
Sum of NOAA Congeners x 2.6 + 0	24		0.15		0.049			U	0.037		U		4.5	
Total MonoCB														
Total DiCB														
Total TriCB														
Total TetraCB														
Total PentaCB														
Total HexaCB														
Total HeptaCB														
Total OctaCB														
Total NonaCB														
Total DecaCB														
Total PCB Horns														
Total PCB	24		0.15		0.049			U	0.037		U		4.5	

Individual PCB Results

Station Id		C009-001C				C009-001D				C009-001E				
Samp Id	C009-001B-0.5-1.0	C009-001B-1.0-1.5		C009-001C-0.0-0.5		C009-001D-0.0-0.5		C009-001D-0.5-1.0		C009-001D-1.0-1.5		C009-001E-0.0-0.5		
Start Date	10/21/03	10/21/03		10/21/03		10/20/03		10/20/03		10/20/03		10/21/03		
Northing	2,697,343	2,697,343		2,697,326		2,697,304		2,697,304		2,697,304		2,697,315		
Easting	814,203	814,203		814,193		814,178		814,178		814,178		814,198		
Cleanup Level														
Description	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual	Result	Final Qual
2,4'-DiCB (BZ-8)	0.002	U	0.002	U	0.008		0.002	U	0.003	U	0.002	U	0.095	
2,2',5'-TriCB (BZ-18)	0.002	U	0.004	P	0.016	P	0.002	U	0.007	P	0.002	U	0.27	P
2,4,4'-TriCB (BZ-28)	0.003		0.012		0.033		0.002	U	0.019		0.002	U	0.79	
2,2',3,5'-TetraCB (BZ-44)	0.002	U	0.004	P	0.016		0.002	U	0.007		0.002	U	0.3	
2,2',5,5'-TetraCB (BZ-54)	0.002	U	0.008		0.019		0.002	U	0.012		0.002	U	0.54	
2,3',4,4'-TetraCB (BZ-66)	0.002		0.008		0.024		0.002	U	0.013		0.002	U	0.44	
2,2',4,5,5'-PentaCB (BZ-101)	0.002	U	0.008		0.022	P	0.002	U	0.012		0.002	U	0.43	P
2,3,3',4,4'-PentaCB (BZ-105)	0.002	U	0.003	ZZ	0.009	ZZ	0.002	U	0.005	ZZ	0.002	U	0.14	ZZ
2,3',4,4',5'-PentaCB (BZ-118)	0.002		0.007		0.021		0.002	U	0.01		0.002	U	0.4	
2,2',3,3',4,4'-HexaCB (BZ-128)	0.002	U	0.002	U	0.004		0.002	U	0.003	U	0.002	U	0.073	
2,2',3,4,4',5'-HexaCB (BZ-138)	0.002	U	0.005		0.017		0.002	U	0.008		0.002	U	0.3	
2,2',4,4',5,5'-HexaCB (BZ-153)	0.002	U	0.005	P	0.013	P	0.002	U	0.007	P	0.002	U	0.28	P
2,2',3,3',4,4',5'-HeptaCB (BZ-170)	0.002	U	0.002	U	0.003	U	0.002	U	0.003	U	0.002	U	0.041	
2,2',3,4,4',5,5'-HeptaCB (BZ-180)	0.002	U	0.002	U	0.003		0.002	U	0.003	U	0.002	U	0.057	
2,2',3,4',5,5',6'-HeptaCB (BZ-187)	0.002	U	0.002	U	0.003	U	0.002	U	0.003	U	0.002	U	0.028	U
2,2',3,3',4,4',5,6'-OctaCB (BZ-195)	0.002	U	0.002	U	0.003	U	0.002	U	0.003	U	0.002	U	0.028	U
2,2',3,3',4,4',5,5',6'-NonaCB (BZ-206)	0.002	U	0.002	U	0.003	P	0.002	U	0.003	U	0.002	U	0.028	U
DecaCB - Congener (BZ-209)	0.002	U	0.002	U	0.003	U	0.002	U	0.003	U	0.002	U	0.028	U
Total CONG	0.008		0.064		0.21		0		0.099		0		4.2	
Sum of NOAA Congeners x 2.6 + 0	0.02		0.17		0.54			U	0.26		U		11	
Total MonoCB														
Total DiCB														
Total TriCB														
Total TetraCB														
Total PentaCB														
Total HexaCB														
Total HeptaCB														
Total OctaCB														
Total NonaCB														
Total DecaCB														
Total PCB Homs														
Total PCB	0.02		0.17		0.54			U	0.26		U		11	

Individual PCB Results

Station Id	C010-001E			
Samp Id	C010-001E-0.0-0.5		C010-001E-0.0-0.5REP	
Start Date	09/18/03		09/18/03	
Northing	2,697,286		2,697,286	
Easting	814,370		814,370	
Cleanup Level				
Description	Result	Final Qual	Result	Final Qual
2,4'-DiCB (BZ-8)	0.002	U	0.002	U
2,2',5'-TriCB (BZ-18)	0.002	U	0.002	U
2,4,4'-TriCB (BZ-28)	0.005		0.004	
2,2',3,5'-TetraCB (BZ-44)	0.002	U	0.002	U
2,2',5,5'-TetraCB (BZ-54)	0.002		0.002	
2,3',4,4'-TetraCB (BZ-66)	0.004		0.004	
2,2',4,5,5'-PentaCB (BZ-101)	0.003	P	0.003	P
2,3,3',4,4'-PentaCB (BZ-105)	0.002	U	0.002	U
2,3',4,4',5'-PentaCB (BZ-118)	0.002	P	0.003	
2,2',3,3',4,4'-HexaCB (BZ-128)	0.002	U	0.002	U
2,2',3,4,4',5'-HexaCB (BZ-138)	0.002	P	0.002	
2,2',4,4',5,5'-HexaCB (BZ-153)	0.002	P	0.002	P
2,2',3,3',4,4',5'-HeptaCB (BZ-170)	0.002	U	0.002	U
2,2',3,4,4',5,5'-HeptaCB (BZ-180)	0.002	U	0.002	U
2,2',3,4',5,5',6'-HeptaCB (BZ-187)	0.002	U	0.002	U
2,2',3,3',4,4',5,6'-OctaCB (BZ-195)	0.002	U	0.002	U
2,2',3,3',4,4',5,5',6'-NonaCB (BZ-206)	0.002	U	0.002	U
DecaCB - Congener (BZ-209)	0.002	U	0.002	U
Total CONG	0.021		0.021	
Sum of NOAA Congeners x 2.6 + 0	0.054		0.055	
Total MonoCB				
Total DiCB				
Total TriCB				
Total TetraCB				
Total PentaCB				
Total HexaCB				
Total HeptaCB				
Total OctaCB				
Total NonaCB				
Total DecaCB				
Total PCB Homs				
Total PCB	0.054		0.055	

Appendix L.2

Graphical Depiction of Confirmatory Sampling Results

NOTE THAT ALL ZERO'S ARE PRESENTED BY THE LAB AS NON-DETECT

A **C009**

Sample Depths		1a	1b	1c	1d	1e
0.0	0.5	0.049	4.5	0.54	0	11
0.5	1.0	0	0.02		0.26	0.45
1.0	1.5	0.037	0.17		0	
1.5	2.0	0				

	10-Oct Fri
	17-Oct Fri
	20-Oct Mon.
	21-Oct Tues.

B **C010**

Sample Depths		1a	1b	1c	1d	1e
0.0	0.5	37	32	24	5.2	0.054
0.5	1.0	10.85	10.85	10.85	10.85	10.85

Composite sample

C **C007**

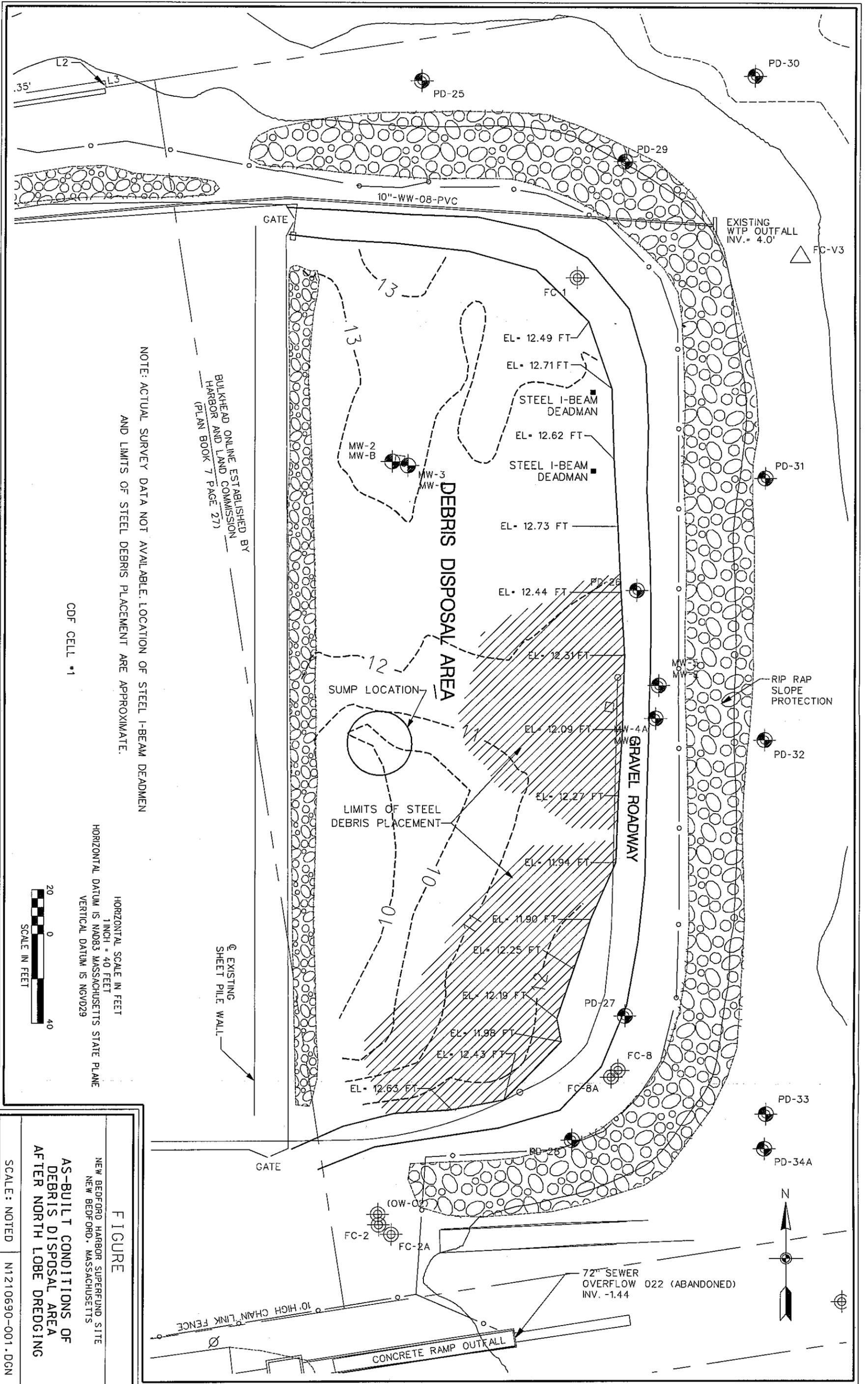
Sample Depths		1	2	3	4	5	6	7	8	9
0.0	0.5	2.8	4.2	2.8	29	0.26	59	0	0.056	16
0.5	1.0	0.73	67		38		240	0	0	2.4
1.0	1.5		0.12		51		330			1.4
1.5	2.0		0.0078		165		180			
2.0	2.5		0.0065				24			

D **C008**

Sample Depths		1	2	3	4	5	6	7	8	9
0.0	0.5	48	5.3	69	35	1.5	11	56	54	24
0.5	1.0	0.11	0.13	60	32		28	1.6	18	0.15
1.0	1.5	0	0	20	2.3	9.5		0.0025	0	
1.5	2.0	270	0.0047	17	0.31	3			0	

Appendix M

Debris Disposal Area As-Built Drawing



NOTE: ACTUAL SURVEY DATA NOT AVAILABLE. LOCATION OF STEEL I-BEAM DEADMEN AND LIMITS OF STEEL DEBRIS PLACEMENT ARE APPROXIMATE.

BULKHEAD ONLINE ESTABLISHED BY HARBOR AND LAND COMMISSION (PLAN BOOK 7 PAGE 27)

CDF CELL #1



HORIZONTAL SCALE IN FEET
1 INCH = 40 FEET
HORIZONTAL DATUM IS NAD83 MASSACHUSETTS STATE PLANE
VERTICAL DATUM IS NGVD29

FIGURE
AS-BUILT CONDITIONS OF DEBRIS DISPOSAL AREA AFTER NORTH LOBE DREDGING
 NEW BEDFORD HARBOR SUPERFUND SITE
 NEW BEDFORD, MASSACHUSETTS
 SCALE: NOTED N1210690-001.DGN