RETURN TO 1998 ROD AR INDEX

Superfund Records Center
SITE: New Bedford
BREAK: 04.02
OTHER: 46290

SDMS DocID 46290

9-10 OCTOBER 1990
Well Sampling

CENED-ED-GL-E

Saner/11/928-4711

MEMORANDUM FOR Director of Planning, ATTN: Mark Otis

SUBJECT: Chemical Analysis Data for New Bedford Wells

1. 16 water matrix samples were collected at the above subject project on 9-10 October 1990. Standard USEPA methods were employed for sampling and sample preservation. Copies of the sampler's field notes and/or chain-of-custody records are enclosed for your reference, along with a list of the samples collected.

2. The following analyses were performed in house:

Analysis	EPA Method
PCBs (water)	3510/8080
Lead	7421
Cadmium	6010
Chromium	6010
Copper	6010

3. The tabulated analytical results are enclosed. A quality assurance review is also enclosed for your reference.

4. If you have any questions, please feel free to call Mr. Saner at 508-928-4711.

Enclosures

RICHARD D. REARDON
Director of Engineering

CF:
NED Lab - w/o encls
GED - w/o encls
Engr Dir Files - 112S - w/o encls
Env. Lab - w/o encls

Quality Assurance Review

Project: New Bedford Wells

Date: 2-26-91

Sample Handling:

Samples were collected using standardized USEPA procedures. Appropriate sample containers and preservation techniques were utilized. "Unfiltered" samples were preserved in the field; "filtered" samples were collected and were brought back to the laboratory, where they were filtered and then preserved. All samples were refrigerated from the time of collection. Proper chain-of-custody protocols were followed.

Laboratory Analysis:

The method blanks for all parameters were free from contamination. The field rinsate blank and the trip blank for copper both revealed some minor contamination (approximately 0.010 mg/L), versus a method detection limit of 0.006 mg/L. This could indicate some contribution of this analyte from either the sample container or the nitric acid preservative which would result in a slight positive bias.

The maximum holding times were met for all of the trace metals. The seven day maximum holding time before extraction for PCBs was exceeded by four weeks. This could have caused a negative bias to the data (i.e., low results), but there is no way to determine this. Given the persistent nature of PCBs in the environment, this effect, if present at all, is likely to be small.

All TCMX surrogate spikes were within acceptable laboratory control limits, indicating good extraction efficiencies.

A comparison of matrix spikes and matrix spike duplicate analyses showed that all of the test parameters exhibited precision that was within acceptable limits. Replicate analyses for lead, cadmium, chromium, and PCBs all indicated good precision for these parameters as well. One of the two copper replicates did not duplicate very well, but both values were below the practical quantitation limit (PQL) and are subject to more variability than values above that limit.

All matrix spikes yielded recoveries which were within laboratory control limits, indicating good precision for all parameters.

All of the lead and chromium values appear to be reasonable and internally consistent. One of the cadmium values and one of the copper values were greater in the filtered samples than in the corresponding unfiltered samples. However, in both of these instances the results were lower than the PQLs, near the detection limits, and subject to some small natural variability. This would account for the apparent inconsistencies in these numbers and is not significant. The same situation occurred with the PCBs in Well No. 3.

Brian J. Condike

BRIAN J. CONDIKE
Quality Assurance Officer

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DIVISION, ENVIRONMENTAL LABORATORY

PRODUCED ON 02/07/91
07:56

NEW BEDFORD WELLS '90

SAMPLE LISTING

ENV NO	FIELD DESCRIPTION
11281	Rinsate Blank
11282	Trip Blank
11283	Well #1 - unfiltered
11284	Well #2 - unfiltered
11285	Well #3 - unfiltered
11286	Well #3 - unfiltered repeat
11287	Well #5 - unfiltered
11288	Well #6 - unfiltered
11289	Well #7 - unfiltered
11290	Well #1 - filtered
11291	Well #2 - filtered
11292	Well #3 - filtered
11293	Well #3 - filtered repeat
11294	Well #5 - filtered
11295	Well #6 - filtered
11296	Well #7 - filtered

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DIVISION, ENVIRONMENTAL LABORATORY

PRODUCED ON 02/07/91
07:56

NEW BEDFORD WELLS

TRACE METALS

PARAMETER	11281 Rinsate blank unfiltered	11282 Trip Blank unfiltered	11283 Well # 1 unfiltered	11284 Well # 2 unfiltered	11285 Well # 3 unfiltered
Lead	< 0.0030	< 0.0030	0.028	0.0086	0.0031
Cadmium	< 0.0050	< 0.0050	J 0.0095	J 0.028	J 0.019
Chromium	< 0.015	< 0.015	< 0.015	J 0.057	J 0.032
Copper	J 0.010	J 0.010	J 0.020	J 0.041	J 0.035
Sample Date:	10/5/90	10/5/90	10/9/90	10/9/90	10/10/90
Date Analyzed:	1/9/91	1/9/91	1/9/91	1/9/91	1/9/91

All results are reported in ppm unless otherwise indicated.

J - Estimated value. Analyte detected at < the Practical Quantitation Limit but > the Method Detection Limit.

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DIVISION, ENVIRONMENTAL LABORATORY

PRODUCED ON 02/07/91
07:56

NEW BEDFORD WELLS

TRACE METALS

PARAMETER	11286 Well # 3 unfilt. - repeat	11287 Well # 5 unfiltered	11288 Well # 6 unfiltered	11289 Well # 7 unfiltered	11290 Well # 1 filtered
Lead	0.0055	< 0.003	< 0.0030	0.0068	< 0.0030
Cadmium	J 0.016	J 0.009	J 0.0054	J 0.014	J 0.012
Chromium	J 0.033	J 0.018	< 0.015	J 0.015	< 0.015
Copper	J 0.063	J 0.0068	J 0.011	J 0.028	J 0.017
Sample Date:	10/10/90	10/10/90	10/9/90	10/9/90	10/9/90
Date Analyzed:	1/9/91	1/9/91	1/9/91	1/9/91	1/9/91

All results are reported in ppm unless otherwise indicated.

J - Estimated value. Analyte detected at < the Practical Quantitation Limit but > the Method Detection Limit.

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DIVISION, ENVIRONMENTAL LABORATORY

PRODUCED ON 02/07/91
07:56

NEW BEDFORD WELLS

TRACE METALS

PARAMETER	11291 Well # 2 filtered	11292 Well # 3 filtered	11293 Well # 3 filtered - repeat	11294 Well # 5 filtered	11295 Well # 6 filtered
Lead	< 0.0030	< 0.0030	< 0.0030	< 0.0030	< 0.0030
Cadmium	J 0.028	J 0.018	J 0.016	J 0.0087	< 0.0050
Chromium	J 0.040	J 0.024	J 0.027	< 0.015	< 0.015
Copper	J 0.007	J 0.007	J 0.0089	< 0.006	J 0.012
Sample Date:	10/9/90	10/10/90	10/10/90	10/10/90	10/9/90
Date Analyzed:	1/9/91	1/9/91	1/9/91	1/9/91	1/9/91

All results are reported in ppm unless otherwise indicated.

J - Estimated value. Analyte detected at < the Practical Quantitation Limit but > the Method Detection Limit.

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DIVISION, ENVIRONMENTAL LABORATORY

PRODUCED ON 02/07/91
07:56

NEW BEDFORD WELLS

TRACE METALS

PARAMETER	11296 Well # 7 filtered	METHOD BLANK
Lead	< 0.0030	< 0.0030
Cadmium	J 0.0073	< 0.0050
Chromium	< 0.015	< 0.015
Copper	< 0.0060	< 0.0060

Sample Date:	10/9/90	
Date Analyzed:	1/9/91	1/9/91

All results are reported in ppm unless otherwise indicated.

J - Estimated value. Analyte detected at < the Practical Quantitation Limit but > the Method Detection Limit.

TRACE METAL DUPLICATES

NEW BEDFORD WELLS

PRECISION

PARAMETER	SPIKED SAMPLE RESULT (SSR)	SPIKE DUPLICATE RESULT (SDR)	RELATIVE PERCENT DEVIATION (RPD)	RPD MAXIMUM	PASS / FAIL
Cadmium	0.056	0.055	2	30	PASS
Chromium	0.095	0.09	5	30	PASS
Copper	0.22	0.20	10	30	PASS
Lead	0.044	0.044	0	30	PASS

TRACE METAL SPIKE RECOVERY

NEW BEDFORD WELLS

ACCURACY

PARAMETER	SPIKED SAMPLE RESULT (SSR)	SAMPLE RESULT (SR)	SPIKE ADDED	SPIKE RECOVERY %	CONTROL LIMITS REC	PASS / FAIL
Cadmium	0.056	< 0.005	0.050	112.0	75 - 125	PASS
Chromium	0.095	< 0.015	0.10	95.0	75 - 125	PASS
Copper	0.22	< 0.006	0.25	88.0	75 - 125	PASS
Lead	0.044	< 0.003	0.050	88.0	75 - 125	PASS

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DIVISION, ENVIRONMENTAL LABORATORY

PRODUCED ON 12/18/90
13:49

NEW BEDFORD WELLS

PCBs (ppb)

PARAMETER	11282 TRIP BLANK UNFILTERED WATER	11283 WELL #1 UNFILTERED WATER	11284 WELL #2 UNFILTERED WATER	11285 WELL #3 UNFILTERED WATER	METHOD BLANK WATER
Total PCBs	< 0.38	< 0.39	J 0.29	J 0.14	< 0.80
Surrogate Recovery (%)					
DBC	70.0	40.0	38.0	44.0	36.0
TCMX	124.0	97.0	99.0	97.0	98.0

SAMPLE DATE:	10/5/90	10/9/90	10/9/90	10/10/90	
DATE RECEIVED:	10/10/90	10/10/90	10/10/90	10/10/90	
DATE EXTRACTED:	11/13/90	11/13/90	11/13/90	11/13/90	11/13/90
DATE ANALYZED:	11/20/90	11/20/90	11/20/90	11/20/90	11/20/90

J = Estimated value; Detected at less than Practical Quantitation Limited.

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DIVISION, ENVIRONMENTAL LABORATORY

PRODUCED ON 12/18/90
13:49

NEW BEDFORD WELLS

PCBs (ppb)

PARAMETER	11281 RINSATE BLANK UNFILTERED WATER	11286 WELL #3REP UNFILT. REPEAT WATER	11287 WELL #5 UNFILTERED WATER	11290 WELL #1 FILTERED WATER	11292 WELL #3 FILTERED WATER	11293 WELL #3REP FILT. REPEAT WATER
Total PCBs	< 0.38	0.42	< 0.38	< 0.39	0.43	< 0.39
Surrogate Recovery (%)						
DBC	47.0	63.0	43.0	46.0	59.0	52.0
TCMX	104.0	102.0	86.0	94.0	106.0	108.0
SAMPLE DATE:	10/5/90	10/10/90	10/10/90	10/9/90	10/10/90	10/10/90
DATE RECEIVED:	10/10/90	10/10/90	10/10/90	10/10/90	10/10/90	10/10/90
DATE EXTRACTED:	11/14/90	11/14/90	11/14/90	11/14/90	11/14/90	11/14/90
DATE ANALYZED:	11/20/90	11/20/90	11/21/90	11/20/90	11/20/90	11/20/90

J = Estimated value; Detected at less than Practical Quantitation Limited.

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DIVISION, ENVIRONMENTAL LABORATORY

PRODUCED ON 12/18/90
13:49

NEW BEDFORD WELLS

PCBs (ppb)

PARAMETER	11294 WELL #5 FILTERED WATER	11295 WELL #6 FILTERED WATER	11296 WELL #7 FILTERED WATER	METHOD BLANK WATER
Total PCBs	< 0.41	< 0.38	< 0.41	< 0.40
Surrogate Recovery (%)				
DBC	37.0	47.0	52.0	50.0
TCMX	81.0	101.0	95.0	97.0

SAMPLE DATE:	10/10/90	10/9/90	10/9/90	
DATE RECEIVED:	10/10/90	10/10/90	10/10/90	
DATE EXTRACTED:	11/14/90	11/14/90	11/14/90	11/14/90
DATE ANALYZED:	11/20/90	11/20/90	11/20/90	11/20/90

J = Estimated value; Detected at less than Practical Quantitation Limited.

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DIVISION, ENVIRONMENTAL LABORATORY

PRODUCED ON 12/18/90
13:49

NEW BEDFORD WELLS

PCBs (ppb)

PARAMETER	11288 WELL #6 UNFILTERED WATER	11289 WELL #7 UNFILTERED WATER	11291 WELL #2 FILTERED WATER	METHOD BLANK WATER
Total PCBs	< 0.39	< 0.42	< 0.39	< 0.40
Surrogate Recovery (%)				
DBC	45.0	50.0	62.0	70.0
TCMX	82.0	97.0	100.0	108.0

SAMPLE DATE:	10/9/90	10/9/90	10/9/90	
DATE RECEIVED:	10/10/90	10/10/90	10/10/90	
DATE EXTRACTED:	11/15/90	11/15/90	11/15/90	11/15/90
DATE ANALYZED:	11/21/90	11/21/90	11/21/90	11/21/90

J = Estimated value; Detected at less than Practical Quantitation Limited.

PCB MATRIX SPIKE-MATRIX SPIKE DUPLICATE
WATER

PRECISION

COMPOUND	MATRIX SPIKE RECOVERY (%)	MATRIX SPIKE DUPLICATE RECOVERY (%)	RELATIVE PERCENT DEVIATION (RPD)	QC LIMITS RPD	QC LIMITS REC	PASS / FAIL
Total PCBs METHOD BLANK	140	122	14	14	61 - 145	PASS

ACCURACY

SPIKING COMPOUND	MATRIX SPIKE RECOVERY (%)	ACCEPTABLE RANGE	PASS / FAIL
Total PCBs METHOD BLANK	140	61 - 145	PASS

U.S. ARMY CORPS OF ENGINEERS

CHAIN OF CUSTODY RECORD

PROJ. NO.

PROJECT NAME: New Bedford - Wells

SAMPLERS: (Signature) Nancy L. Amidon

ENV STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PCB - unfiltered	PCB - filtered	TM - unfiltered	TM - filtered			REMARKS
11281	10/5/90	1500		✓	Rinseate Blank	2	✓		✓				H_2O
11282	10/5/90	1500		✓	Trip Blank	2	✓		✓				
11283	10/9/90	1330		✓	Well #1	~~4~~ 2	✓	✓	✓	✓			
11284	10/9/90	1500		✓	Well #2	~~4~~ 2	✓	✓	✓	✓			
11285	10/10/90	0730		✓	Well #3	~~4~~ 2	✓	✓	✓	✓			
11286	10/10/90	0730		✓	Repeated #3	~~4~~ 2	✓	✓	✓	✓			
11287	10/10/90	0815		✓	Well #5	~~4~~ 2	✓	✓	✓	✓			
11288	10/9/90	1300		✓	Well #6	~~4~~ 2	✓	✓	✓	✓			
11289	10/9/90	1115		✓	Well #7	~~4~~ 2	✓	✓	✓	✓			
11290	10/11/90	1330		✓	WELL #1 FILTERED	2		✓		✓			
11291	10/11/90	1500		✓	WELL #2 FILTERED	2		✓		✓			
11292	10/10/90	0730		✓	WELL #3 FILTERED	2		✓		✓			
11293	10/10/90	0730		✓	WELL #3 REPEAT FILTERED	2		✓		✓			
11294	10/10/90	0815		✓	WELL #5 FILTERED	2		✓		✓			
11295	10/11/90	1300		✓	WELL #6 FILTERED	2		✓		✓			

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Nancy L. Amidon	10/10/90 1300	Rebecca Armacle			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy 1 to Sample Custodian; Copy 2 to Coordinator Field Files

U.S. ARMY CORPS OF ENGINEERS

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME: NEWBEDFORD WELLS
SAMPLERS: (Signature) Nancy A. Amidon	

LAB STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	KB filtered	TM filtered					REMARKS
11296	10/1/10	1115		✓	WELL #7 FILTERED	2	✓						

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Nancy A. Amidon	10/10/10 1300	Patricia Spinoche			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy 1 to Sample Custodian; Copy 2 to Coordinator Field Files

PROJECT: New Bedford Wells - 90

DATE: 10/9 - 10/10/90

COLLECTOR(S): N. Amidon, F. Knowles

SAMPLE #	FIELD DESCRIPTION/ STATION	TIME	PCB *	TM *		
	1 well #1	1330 10/9/90	2L	200 ml		
	2 well #2	1500 10/9/90	2L	200ml		
	3 well #3	0730 10/10/90	2L	200mL		
—	4 well #4	No Sample- well not recharging				
	5 well #5	0815	2L	200mL		
	6 well #6	1300 10/9/90	2L	200mL		
	7 well #7	1115 10/9/90	2L	200 mL		
	3R well #3 repeat	0730 10/10/90	2L	200mL		
	RB rinseate blnk	1500 10/5/90	1L	100 ml		
	TB trip blank	1500 10/5/90	1L	100 ml		

REMARKS: * iced samples after collection. 1 TM is preserved with HNO_3 to pH <2.

WOL TEST FORM 12/11/86

Sampling Effort on:

Date 10/9/90 - 10/10/90

By Collectors N. Amidon, Forrest Knowles

Sample Date	10/9/90	10/9/90	10/9/90	10/9/90	10/10/90	10/10/90	10/10
Sample Time	1115	1300	1330	1500	0730	0800	08
Well # 7	7	6	1	2	3	4	5
2L PCB	✓	✓	✓	✓	✓	No sample	✓
2x500 TM	✓	✓	✓	✓	✓	—	✓

PCB - cool to 4°C; 1 sample to be filtered at lab. 1 TM for fil
1 TM to be preserved immediately to pH of 2 with conc. HNO_3.

TM Preserv. Time/Date	10/9 1140	10/9 1320	1345/10/9	1520	0740	—	08
pH	<2	<2	<2	<2	<2	—	<2

Evac. Date	10/9/90	10/9/90	10/9/90	10/9/90	10/9/90	10/9/90	10/9/
Evac. Time	1105	1145	1150	1230	1304	1345	140
Well # 7	7	4	5	6	1	3	2
fluid depth	~~17.35~~ 6.36'	14'	9.2'	6.5	7.6	4.7	8.7
well depth*	17.35	22.3'	19.1'	17.6	19.4	14.4	18.6
evac. volume	4+ gallons	dry @ 2 1/2 gal.	dry @ 2 3/4 gallons	5 gallons	5 gallons	4 gallons	6 gal

* Top of outer casing to bottom of well

Remarks: TM's to be analyzed for lead, copper, chromium & cadmium. One set of samples, including PCB, is to be run filtered, the other set is to analyzed unfiltered, per Mark J. Otis' request received 20 Sept 90.

Evacuation notes:

well ~~no~~ #7 had brownish sediment in it, at onset of evacuation, which dissipated as evacuation proceded. slight constricture to casing 8.6' from top.

well #4 - constriction 5' from top of casing prevents Isco & baler entry. Not evacuated with isco. Hand baled.

well #5 recharging slowly - evacuated 2 3/4 gallons after which well was dry. grey sediment was obvious in water but dissipated as pumping commenced.

#6 initial well contents are reddish-tan from very fine sediment which cleared as purging continued.

well #1 flowed clean from the outset

well #3 extremely turbid - nearly black with sediment at out set. still greyish on completion of purge.

well #2 very turbid - dark grey in color at onset of evacuation. still slightly grey tinge after 6 gallons removed.

wells #4 & 3 have no covers and were open to environment on arrival

well #4 had only 3 inches of water in it 18 hours after evacuation - unable to sample.

'ed.

well #3 used for QA replicates.