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MEMORANDUM

Date: February 11, 2011
To: Mark Anderson, USACE
From: Heidi Clark & Dave Walsh, Woods Hole Group
Re: 2010 OU3 Cap Monitoring

Dear Mr Anderson,

This memo describes the 2010 monitoring at the Operable Unit #3 pilot underwater cap located just south of the New Bedford hurricane barrier. The 2010 sampling included a bathymetric survey (performed by CR Environmental), and sediment sampling (carried out by Woods Hole Group). The resulting data are presented herein. Prior cap monitoring updates have been more thorough, documenting and comparing pre-cap sediment PCBs with more recent sampling, and documenting the extent of cap coverage (Dickerson, 2007). That type of analysis is beyond the scope of this memo. Herein we provide a very brief summary of 2010 cap monitoring data.

Please feel free to contact us with any questions.

Sincerely,

Heidi Clark and Dave Walsh



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2010 Operable Unit #3 Cap Monitoring Update

Introduction

The pilot underwater cap in OU#3 is located just south of the hurricane barrier along the shoreline. The 19-acre cap was completed in 2005, using clean sand and gravel from a Port of New Bedford navigational Confined Aquatic Disposal (CAD) cell. The pilot cap covers polychlorinated biphenyl (PCB)-contaminated sediments just offshore of the Cornell-Dubilier Electronics (CDE) facility.

Post-cap monitoring since 2005 has included bathymetric surveys to determine cap thickness and grab samples to determine PCB levels in surface sediment (top 3 inches). This monitoring has been done annually since the cap was placed, with the exception of 2009 when sediment samples were not collected.

Sampling and Analysis

The bathymetric survey was performed in August 2010 by CR Environmental. Sediment samples were collected by Woods Hole Group in November 2010, at the station locations indicated in Figure 1. Station locations were the same as those used for the last sampling event (2008). Station IDs were labeled in a manner similar to the 2008 sampling, “OU01” through “OU17”. The suffix -10 is included in these station IDs to indicate the year 2010. All samples were collected in a manner similar to prior sampling events, in particular by collecting only the top 3 inches of sediment from each grab for chemical analysis.

As with prior cap monitoring, samples were analyzed for the NOAA 18 PCB congeners. Samples were analyzed with gas chromatography using EPA method 8082 (EPA, 2007). For this round of samples, Total Organic Carbon (TOC) analysis was added because it may be helpful to know the TOC-normalized PCB concentrations in sediment.

Figure 1 shows the station locations superimposed on the bathymetric survey. Figure 2 is a close-up view, illustrating the sediment surface more clearly.

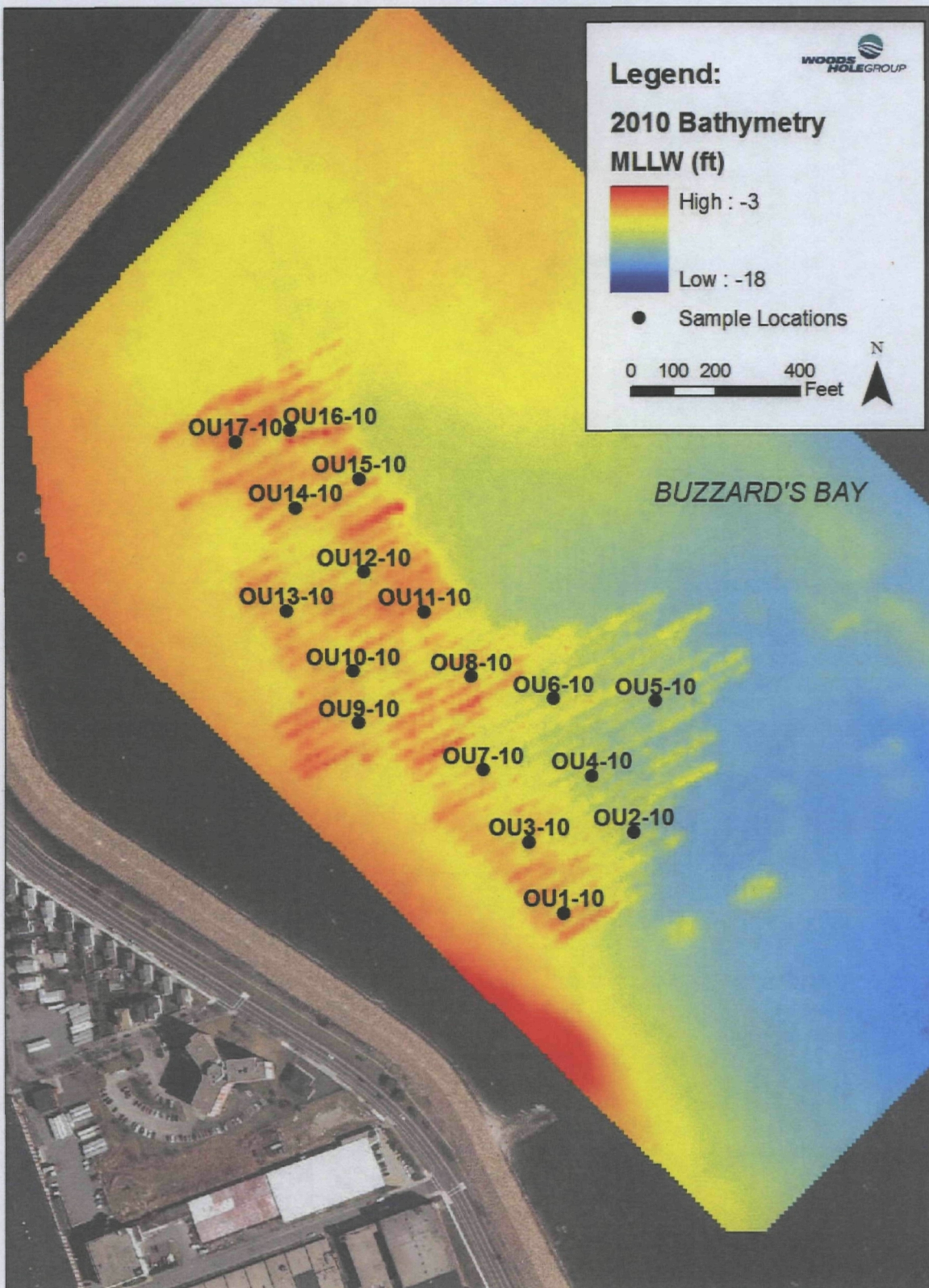


Figure 1. 2010 Cap Monitoring Stations and Bathymetric Survey Contours.

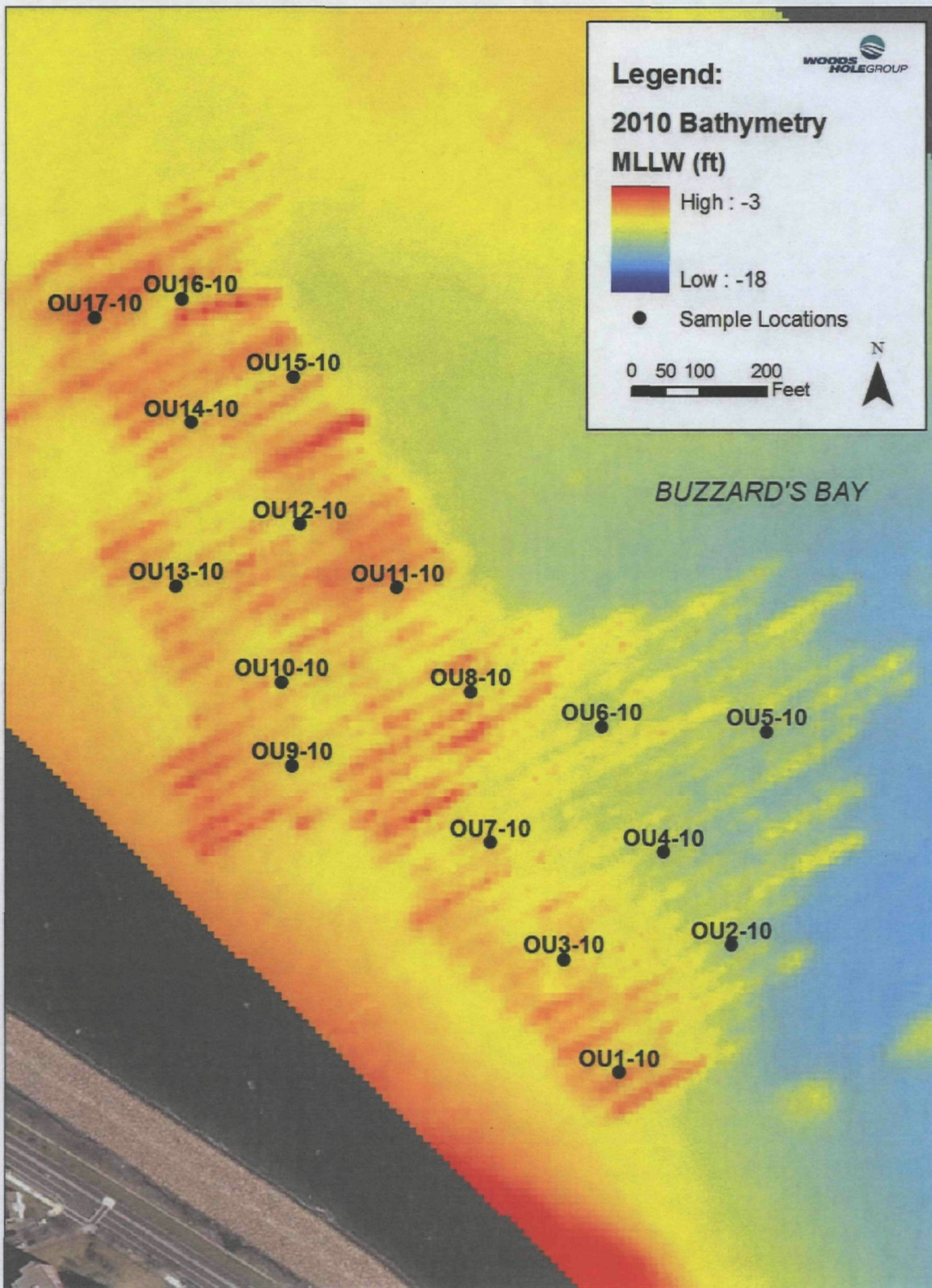


Figure 2. Closeup of 2010 Cap Monitoring Stations and Bathymetric Contours.

Results

Results for total PCBs (sum of 18 congeners * 2.6 multiplier), TOC, and TOC-normalized PCBs are provided in Table 1. Raw data, including the concentration of each congener at each station, can be obtained by querying the New Bedford Harbor database.

PCB concentrations in bulk sediment ranged from 0.24 to 2.20 ppm. The average bulk sediment PCB concentration was 0.95 ppm. TOC-normalized PCB concentrations ranged from approximately 150 to 400 ppm, with an average value of about 285 ppm. PCB concentrations in the 2010 samples are much lower than those found in pre-cap samples, which indicated an average bulk sediment PCB concentration of approximately 32 ppm in the top 1 foot of sediment (Dickerson, 2007).

Table 1. PCBs, TOC, and TOC-Normalized PCBs in Cap Sediment

Station	Total PCBs (ppm)	TOC (%)	TOC-Normalized PCBs (ppm)
OU01	0.78	0.20	397.96
OU02	2.20	0.88	249.57
OU03	1.50	0.48	311.85
OU04	1.40	0.51	272.90
OU05	0.40	0.19	208.33
OU06	1.50	0.64	235.48
OU07	0.59	0.29	205.93
OU08	0.73	0.39	185.51
OU09	0.84	0.23	373.33
OU10	0.71	0.25	288.62
OU11	0.26	0.18	147.31
OU12	0.44	0.17	261.13
OU13	0.94	0.31	304.70
OU14	0.74	0.17	440.48
OU15	1.40	0.41	341.88
OU16	1.50	0.41	369.91
OU17	0.24	0.10	242.42
Average	0.95	0.33	284.55

References

Dickerson, D. 2007. Operable Unit 3 Pilot Underwater Cap: Post-Cap Monitoring Update. Technical Memorandum to Site File. August 24, 2007.

EPA, 2007. 18 NOAA Congeners: *Polychlorinated Biphenyls (PCBs) by Gas Chromatography* in EPA's Test Methods for Evaluating Solid Waste, Physical Chemical Methods, SW-846, Third Edition, Method 8082, Rev. 1, February 2007.