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LETTER REGARDING ADDITIONAL SITE SCREENING RESULTS AND  
RECOMMENDATIONS STUDY AREA 3 WITH ATTACHMENT NTC ORLANDO FL  
3/14/1997  
ABB ENVIRONMENTAL SERVICES, INC

**ABB**

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March 14, 1997

Wayne Hansel, Code 187300  
Southern Division  
Naval Facilities Engineering Command  
P.O. Box 190010  
Charleston, SC 24919-9010

Dear Wayne:

Subject: Additional Site Screening Results and Recommendations  
Study Area 3

Due to OPT decisions at some of the study areas (SAs) which have undergone site screening, ABB-ES has been tasked with completing additional site screening activities to resolve certain issues and to fill data gaps. This information will assist the OPT in making technically sound and environmentally responsible decisions regarding the remediation and transfer of various parcels at NTC, Orlando. This letter presents the resampling results for three monitoring wells in SA 3 and ABB-ES's conclusions and recommendations to the OPT after evaluating the new findings. With OPT approval, these findings will be incorporated into the (final) environmental site screening report for SA 3 and issued for signature.

**HISTORY OF SA 3 AND RESULTS OF INITIAL SITE SCREENING.** The initial site screening investigation at SA 3, the hazardous materials storage area and Buildings 2816 and 2817, revealed that monitoring wells OLD-03-01 and OLD-03-04 had concentrations of tetrachloroethylene (PCE) of 9 and 12 µg/l, respectively, which exceeded the Florida Groundwater Guidance Concentration for PCE of 3 µg/l. Passive soil gas surveys mapped zones of BTEX and PCE detections.

Subsequent studies were conducted at SA 44, the former missile training range. SA 44 includes SA 3 and was completed to evaluate the PCE plume at SA 3 and to evaluate potential releases to the environment due to past use, storage, or disposal of oil or hazardous materials at the former missile training range.

Analytical screening results from a field gas chromatograph at SA 44 revealed low concentrations of PCE, TCE and BTEX compounds at several locations. The study concluded that there may be offsite sources of BTEX and chlorinated compounds that have impacted the site. Installation of six piezometers revealed a complex local groundwater flow regime to the north and east of SA 3. Several monitoring wells did not reveal a PCE groundwater plume. In addition, two monitoring wells did not confirm the presence of PCE/TCE at two locations where field GC results had indicated potential groundwater contamination.

ABB-ES resampled the two wells in SA 3 where PCE contamination had been determined during the November 1994 sampling episode. Wells OLD-03-01 and OLD-03-04 were resampled on December 30, 1996 (low flow sampling) and groundwater samples were submitted for low detection limit VOCs analysis (EPA Method 524.2). The purpose of the resampling was to determine if the concentrations of PCE had changed since the initial sampling took place.

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The results indicated that well OLD-03-01 had low detections of several BTEX-related compounds and a number of other fuel-related compounds. Benzene was detected at a concentration of 1 µg/l, equal to the FDEP Groundwater Guidance Concentration (FDEPGGC) of 1 µg/l, but below the Federal MCL of 5 µg/l. Ethylbenzene, toluene and total xylenes were detected at concentrations well below regulatory guidance criteria.

Other fuel-related compounds, including isopropylbenzene, naphthalene, n-propylbenzene, and 1,3,5-trimethylbenzene were also detected, some at concentrations slightly exceeding FDEPGGC organoleptic standards. Isopropylbenzene was detected at 2 µg/l exceeding the FDEPGGC criteria of 0.8 µg/l, and 1,3,5-trimethylbenzene was detected at 14 µg/l exceeding the FDEPGGC criteria of 10 µg/l. Naphthalene was detected at 15 µg/l versus a FDEPGGC of 6.8 µg/l.

There were no detections of VOCs in Well OLD-03-04.

**ADDITIONAL SITE SCREENING ACTIVITIES.** During the February OPT meeting, ABB-ES was asked to resample the two wells in SA 3 and an upgradient UST well (226 MW1). Wells OLD-03-01 and OLD-03-04 were resampled on March 4, 1997 (low flow sampling) and groundwater samples were submitted for low detection limit VOCs analysis (EPA Method 524.2). Attempts to resample well 226 MW1 were unsuccessful because its water level was below the screened interval. The purpose of the resampling was to determine if any additional changes had taken place since the last sampling event on December 30, 1996.

**RESULTS.** The results of the March sampling are presented on Table 1. The most significant result is the detection in well OLD-03-01 of PCE at 5.3 µg/l, which exceeds the Florida MCL of 3 µg/l. There was also a detection of PCE in well OLD-03-04 at a concentration of 0.65 µg/l.

**CONCLUSIONS AND RECOMMENDATIONS.** Detections of PCE at low concentrations during this most recent sampling underscores the variability of accurately sampling and analyzing contaminants at concentrations below the practical quantitation limits, but shows over time, a decline in PCE concentrations. ABB-ES still concludes that natural attenuation processes are taking place and that these contaminants are degrading to levels that are no longer detectable. Based on the three rounds of sampling, which covered two years, ABB-ES recommends that further sampling of wells in the area for PCE or BTEX-related compounds not be conducted and that the study area be available for transfer or lease.

Please call me if you have any questions concerning this letter or the study area results.

Very Truly Yours,

**ABB ENVIRONMENTAL SERVICES, INC.**

  
John P. Kaiser  
Installation Manager

cc: Nancy Rodriguez, USEPA Region IV  
John Mitchell, FDEP LT Gary Whipple, NTC Public Works Officer  
Barbara Nwokike, Nick Ugolini SOUTHDIV  
Mac McNeil, Bechtel

Table 1. Summary of Positive Detections in Groundwater Analytical Results  
Study Area 3

Site Screening Report  
Naval Training Center  
Orlando, FL

Well ID					OLD-03-01			OLD-03-02	OLD-03-03
Sample ID	Background <sup>1</sup>	FDEPG	Primary FEDMCL	RBC <sup>2</sup> for Tap Water	03G00101	03G00102	03G00104	03G00201	03G00301
Sampling Date					10-Nov-94	30-Dec-96	4-Mar-97	11-Nov-94	11-Nov-94
<b>Volatile Organics, ug/L</b>									
Benzene		1 <sup>3</sup>	5	0.36 c		1			
Ethylbenzene		30 <sup>3</sup> / 700 <sup>5</sup>	700	1300 n		6			
Isopropylbenzene		0.8 <sup>6</sup>	ND	ND		2			
Methylene chloride							0.23 J		
Naphthalene		6.8 <sup>6</sup>	ND	1500 n		15			
n-Propylbenzene		ND	ND	ND		4			
Tetrachloroethene		3 <sup>3</sup>	5	1.1 c	9		5.3		
Toluene		40 <sup>3</sup> / 1000 <sup>5</sup>	1000	750 n		4			
1,1,1-Trichloroethane		200 <sup>5</sup>	200	1.6 c	8				
1,3,5-Trimethylbenzene		10 <sup>6</sup>	ND	300 n		14			
Xylene (total)		20 <sup>3</sup> / 10,000 <sup>5</sup>	10000	12,000 n		7			
<b>Semivolatile Organics, ug/L</b>									
bis(2-Ethylhexyl)phthalate		6 <sup>6</sup>	ND	4.8 c	1	NA	NA		
<b>Pesticides/PCBs, ug/L</b>									
Aroclor-1260		0.5 <sup>5</sup>	0.5	4.8 c		NA	NA		0.49 J
<b>Inorganics, ug/L</b>									
Aluminum	4,067	200 <sup>3</sup>	ND	37,000 n	90.1 B	NA	NA	468	117 B
Barium	31.4	2,000 <sup>5</sup>	2,000	2,600 n		NA	NA	2.6 B	11 B
Calcium	36,830	ND	ND	1,000,000	28800	NA	NA	6600	8020
Chromium	7.8	100 <sup>5</sup>	100	180 n		NA	NA		
Copper	5.4	1,000 <sup>3</sup>	ND	1,500 n		NA	NA		
Iron	1,227	300 <sup>3</sup>	ND	11,000 n	8 B	NA	NA	18.9 B	12.6 B
Lead	4	15 <sup>5</sup>	15	15		NA	NA	1.6 B	2.3 B
Magnesium	4,560	ND	ND	118,807	1860 B	NA	NA	467 B	276 B
Manganese	17	50 <sup>3</sup>	ND	840 n	3.2 B	NA	NA	5.7 B	31
Nickel		100 <sup>5</sup>	100	730 n	11.9 B	NA	NA		12.2 B
Potassium	5,400	ND	ND	297,016	1130 B	NA	NA	1450 B	377 B
Sodium	18,222	160,000 <sup>5</sup>	ND	396,022	2200 B	NA	NA	776 B	1390 B
Vanadium	21	49 <sup>4</sup>	ND	260 n	2.8 B	NA	NA	4.2 B	
Zinc	4	5,000 <sup>3</sup>	ND	11,000 n	3.2 B	NA	NA	1.1 B	4.6 B

Table 1. Summary of Positive Detections in Groundwater Analytical Results  
Study Area 3

Site Screening Report  
Naval Training Center  
Orlando, FL

Well ID					OLD-03-04		
Sample ID	Background <sup>1</sup>	FDEPG	Primary FEDMCL	RBC <sup>2</sup> for Tap Water	03G00401	03G00402	03G00404
Sampling Date					10-Nov-94	30-Dec-96	4-Mar-97
<b>Volatile Organics, ug/L</b>							
Benzene		1 <sup>5</sup>	5	0.36 c			
Ethylbenzene		30 <sup>3</sup> / 700 <sup>5</sup>	700	1300 n			
Isopropylbenzene		0.8 <sup>6</sup>	ND	ND			
Methylene chloride							
Naphthalene		6.8 <sup>5</sup>	ND	1500 n			
n-Propylbenzene		ND	ND	ND			
Tetrachloroethene		3 <sup>5</sup>	5	1.1 c	12		0.65
Toluene		40 <sup>3</sup> / 1000 <sup>5</sup>	1000	750 n			
1,1,1-Trichloroethane		200 <sup>5</sup>	200	1.6 c			
1,3,5-Trimethylbenzene		10 <sup>6</sup>	ND	300 n			
Xylene (total)		20 <sup>3</sup> / 10,000 <sup>5</sup>	10000	12,000 n			
<b>Semivolatile Organics, ug/L</b>							
bis(2-Ethylhexyl)phthalate		6 <sup>6</sup>	ND	4.8 c	1	NA	NA
<b>Pesticides/PCBs, ug/L</b>							
Aroclor-1260		0.5 <sup>5</sup>	0.5	4.8 c		NA	NA
<b>Inorganics, ug/L</b>							
Aluminum	4,067	200 <sup>3</sup>	ND	37,000 n	292	NA	NA
Barium	31.4	2,000 <sup>5</sup>	2,000	2,600 n	0.79 B	NA	NA
Calcium	36,830	ND	ND	1,000,000	26100	NA	NA
Chromium	7.8	100 <sup>5</sup>	100	180 n	2.4 B	NA	NA
Copper	5.4	1,000 <sup>3</sup>	ND	1,500 n	15 B	NA	NA
Iron	1,227	300 <sup>3</sup>	ND	11,000 n	69.6 B	NA	NA
Lead	4	15 <sup>5</sup>	15	15		NA	NA
Magnesium	4,560	ND	ND	118,807	2390 B	NA	NA
Manganese	17	50 <sup>3</sup>	ND	840 n	1.6 B	NA	NA
Nickel		100 <sup>5</sup>	100	730 n		NA	NA
Potassium	5,400	ND	ND	297,016	2140 B	NA	NA
Sodium	18,222	160,000 <sup>5</sup>	ND	396,022	3040 B	NA	NA
Vanadium	21	49 <sup>4</sup>	ND	260 n	3.9 B	NA	NA
Zinc	4	5,000 <sup>3</sup>	ND	11,000 n	2.1 B	NA	NA