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LETTER CONFIRMING SAMPLING RESULTS AT SURFACE SOIL BACKGROUND
LOCATIONS S009 AND S016 MCCOY ANNEX WITH ATTACHMENT NTC ORLANDO FL
1/16/1997
ABB ENVIRONMENTAL

ABB

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January 16, 1997

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Commanding Officer
SOUTHDIVNAVFACENGCOM
P.O. Box 190010
2155 Eagle Drive
Charleston, SC 24019-9010

Attn: Mr. Wayne Hansel, P.E., Code 18B7

RE: Confirmation Sampling Results at Surface Soil Background Locations S009 and S016
NTC, Orlando - McCoy Annex
Contract; N62467-89-D-0317/CTO 107

Dear Mr. Hansel:

Following discussions during the October Orlando Partnering Team (OPT) meeting, ABB Environmental Services, Inc. (ABB-ES) was tasked with resampling two surface soil locations at the McCoy Annex to confirm that elevated concentrations of polynuclear aromatic hydrocarbons (PAHs) detected during the original background sampling effort exceeded screening criteria. This letter presents the details and results of the resampling effort.

RESULTS OF INITIAL BACKGROUND SAMPLING EFFORT. Sixteen surface soil samples were collected during the original background sampling effort in October 1994. Of the sixteen surface soil locations, six were located at the McCoy Annex shown in the attached figure. Two of these locations (S009 and S016) were collected from the southeast corner of the Annex at the locations also shown in the attached figure. The total PAH concentration during the original sampling effort was 40.6 milligrams per kilogram (mg/kg) at S009 and was 82.7 mg/kg at S016. The soil cleanup goals (SCGs) for each PAH compound are provided along with the analytical results in Table 1.

ADDITIONAL SITE SCREENING ACTIVITIES. Confirmation samples were collected from S009 and S016 in December 1996. As with the original sampling effort, the soil samples were collected and composited from a depth of 0 to 12 inches using hand-augers, in accordance with procedures outlined in the Project Operations Plan (POP; Section 4.5, Sampling Techniques; ABB-Environmental Services, Inc., 1994). The samples were collected from as near the original sample location as possible by using field notes and hand-drawn field maps. Samples were submitted for laboratory analysis of PAHs using EPA Method 8270M (gas chromatography/mass spectroscopy with selective ion monitoring).

RESULTS. The results of the confirmation sampling at S009 and S016 are compared to the original sampling results and to screening criteria in Table 1. The complete set of laboratory data from December 1996 is included as an attachment. Total PAHs encountered in the resampling decreased at S009 (40.6 versus 32.4 mg/kg) and at S016 (82.7 versus 5.8 mg/kg). The range of concentration encountered in both sampling episodes may reflect a natural heterogeneity and sampling variability inherent in soil matrices.

TABLE 1 - SUMMARY OF ANALYTICAL RESULTS
 Resampling of Background Soil Locations, McCoy Annex
 Naval Training Center
 Orlando, Florida

Location				S009		S016	
Lab Identifier				ORS00901	ORS00902	ORS01601	ORS01602
Collect Date				27-Oct-94	6-Dec-96	28-Oct-94	6-Dec-96
	Residential	Residential RBC ²	Industrial RBC ²				
Acenaphthene	2,800,000	47,000,000 n	120,000,000 n	--	46	260 J	12
Acenaphthylene	670,000	2,300,000 n	61,000,000 n	--	70	--	12
Anthracene	20,000,000	23,000,000 n	610,000,000 n	--	1,200	600	180
Benzo(a)anthracene	1,400	880 c	7,800 c	3,000	4,100	7300 D	800
Benzo(a)pyrene	100	88 c	780 c	5,500	8,600	8200 D	1,200
Benzo(b)fluoranthene	1,400	880 c	7,800 c	5,900 J	1,200	8200 D	230
Benzo(g,h,i)perylene	14,000	2,300,000 n	61,000,000 n	4,400 J	1,500	5700 D	220
Benzo(k)fluoranthene	14,000	8,800 c	78,000 c	4,400	1,200	8300 D	230
Carbazole	42,000	32,000 c	290,000 c	--	NA	340 J	NA
Chrysene	140,000	88,000 c	780,000 c	4,700 J	4,000	8300 D	800
Dibenz(a,h)anthracene	100	88 c	780 c	--	410	2400	60
Fluoranthene	2,900,000	3,100,000 n	82,000,000 n	3,500	3,500	14000 D	800
Fluorene	2,400,000	3,100,000 n	82,000,000 n	--	35	190 J	10
1-Methylnaphthalene	930,000	3,100,000 n	82,000,000 n	NA	4.0	NA	--
2-Methylnaphthalene	960,000	3,100,000 n	82,000,000 n	--	8.5	--	3.5
Naphthalene	1,300,000	3,100,000 n	82,000,000 n	--	16	--	5.5
Indeno(1,2,3-cd)pyrene	1,400	880 c	7,800 c	4,400	1,600	5800 D	260
Phenanthrene	1,700,000	2,300,000 n	61,000,000 n	900 J	500	2100	100
Pyrene	2,200,000	2,300,000 n	61,000,000 n	3,900	4,400	11000 D	900
Total PAHs (mg/kg)				40.6	32.4	82.7	5.8

¹SCG = Soil Cleanup Goals for Florida (FDEP memorandum, September 29, 1995, residential scenario).
²RBC = Risk-Based Concentration Table, USEPA Region III, May 1996, R.L. Smith. RBC for benzo(g,h,i)perylene, acenaphthylene, and phenanthrene are not available (value shown based on pyrene). RBC for 1-methylnaphthalene and 2-methylnaphthalene are not available (value shown based on naphthalene).
 All concentrations (except total PAHs) presented in units of micrograms per kilogram ($\mu\text{g}/\text{kg}$).
 n = noncarcinogenic
 c = carcinogenic
 -- = Nondetect.
 NA = Not analyzed.
 J = Estimated Value.
 D = dilution.

Value in bold type indicates an exceedance of regulatory guidance and background concentrations.

RECOMMENDATIONS. Some additional PAH sampling will be required in the vicinity of both S009 and S016 to better define the extent of the PAHs and to confirm that higher concentrations than those detected are not present. Samples S009 and S016 are approximately 1,000 feet apart, northeast of Study Area 26. These background locations were selected based on aerial photographs as being in areas where no Air Force or Navy activity had occurred. No obvious source was evident. No PAHs were detected in surface soil samples collected at Study Area 26. These factors suggest that if the PAHs at S009 and S016 are related, they may be present due to a natural event, such as a fire in the nearby wooded areas. This might be demonstrated by the additional sampling and an evaluation of the distribution of the various PAH compounds.

The additional sampling would be used to support a risk characterization for this area. The results at S009 and S016 suggest that this area may be suitable for industrial use without any remediation, provided appropriate institutional controls are imposed. The risk characterization may also conclude that unrestricted use may be possible, again depending on the results of the additional sampling. This portion of McCoy Annex is slated for industrial use by the Army Reserve. The results of this study will provide a basis for determination of a recommendation for a FOSL/FOST, the need for remediation, or a transfer to operable unit status.

It is our intent to discuss any comments or corrections at the next scheduled OPT meeting. If you have questions or comments regarding this matter, feel free to call me at (407) 895-8845.

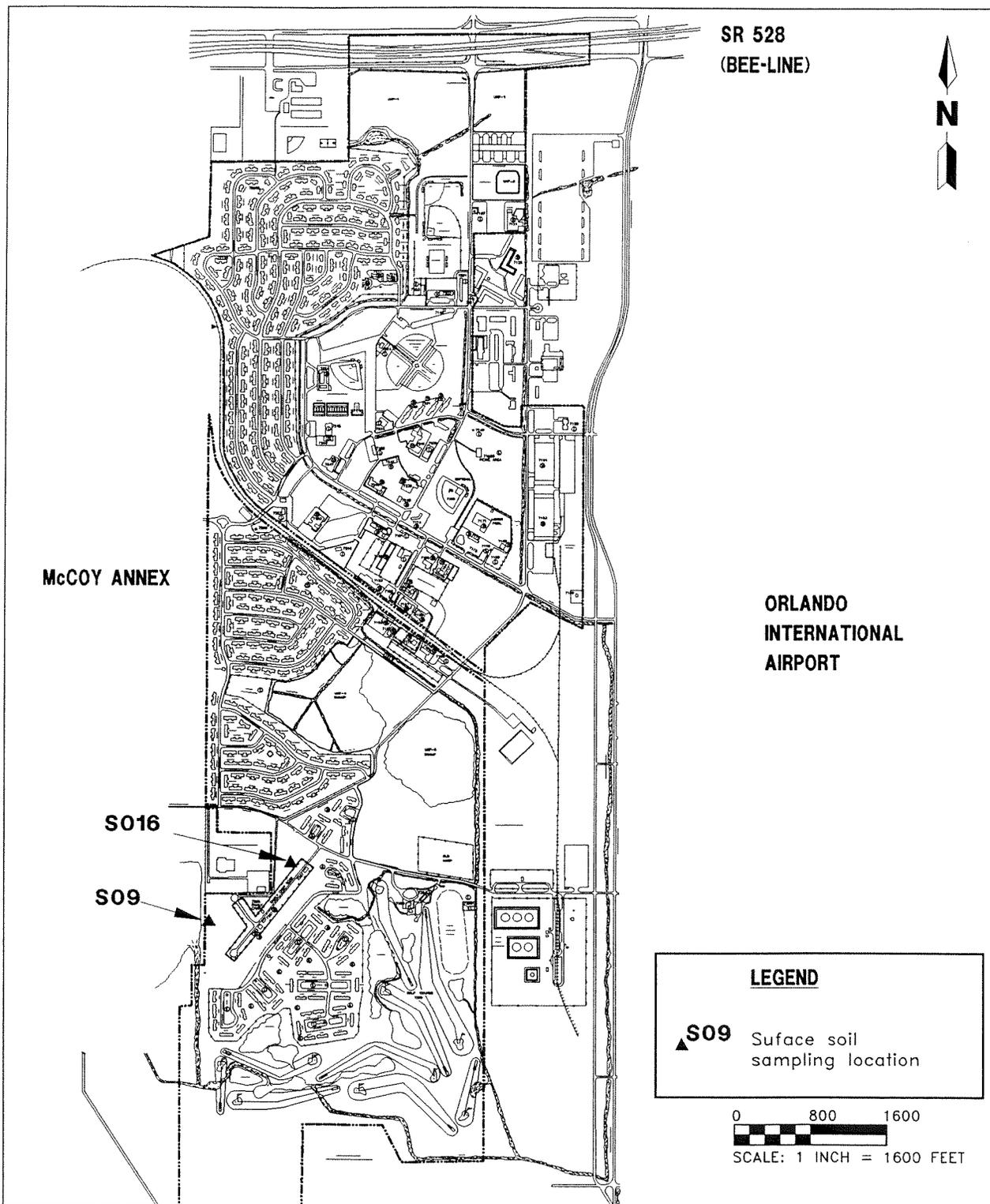
Very Truly Yours,
ABB Environmental Services, Inc.



John P. Kaiser
Installation Manager

cc: Nancy Rodriguez, USEPA Region IV
John Mitchell, FDEP
Barbara Nwokike, Southern Division
Nick Ugolini, Southern Division
Lt. G. Whipple, NTC-Public Works Officer
Mac McNeil, BEI
Steve McCoy, Brown & Root

Attachment - Complete Analytical Results from December 1996 episode.



**FIGURE 1
BACKGROUND SAMPLING LOCATIONS,
MCCOY ANNEX**



**TECHNICAL MEMORANDUM
BACKGROUND SAMPLING**

**NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ABB Environmental Services, Inc.
 Project: NTC-Orlando / 8519.10
 Sample Matrix: Soil

Service Request: J9601880
 Date Collected: 12/6/96
 Date Received: 12/7/96

Polynuclear Aromatic Hydrocarbons by GC/MS SIM
 Semivolatile Organic Compounds by GC/MS

Sample Name: ORS01601
 Lab Code: J9601880-002
 Test Notes:

Units: ug/Kg (ppb)
 Basis: NA

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Naphthalene	EPA 3540	8270	2.5	2.0	1	12/9/96	12/11/96	5.5	
2-Methylnaphthalene	EPA 3540	8270	2.5	1.0	1	12/9/96	12/11/96	3.5	
1-Methylnaphthalene	EPA 3540	8270	2.5	1.5	1	12/9/96	12/11/96	U	
Acenaphthylene	EPA 3540	8270	2.5	1.5	1	12/9/96	12/11/96	12	
Acenaphthene	EPA 3540	8270	2.5	1.0	1	12/9/96	12/11/96	14	
Fluorene	EPA 3540	8270	2.5	1.0	1	12/9/96	12/11/96	10	
Phenanthrene	EPA 3540	8270	2.5	2.5	1	12/9/96	12/11/96	100	
Anthracene	EPA 3540	8270	2.5	2.5	1	12/9/96	12/11/96	180	
Fluoranthene	EPA 3540	8270	25	2.5	10	12/9/96	12/11/96	800	(a)
Pyrene	EPA 3540	8270	25	2.0	10	12/9/96	12/11/96	900	(a)
Benz(a)anthracene	EPA 3540	8270	25	2.0	10	12/9/96	12/11/96	800	(a)
Chrysene	EPA 3540	8270	25	2.0	10	12/9/96	12/11/96	800	(a)
Benzo(b)fluoranthene	EPA 3540	8270	2.5	2.5	1	12/9/96	12/11/96	230	
Benzo(k)fluoranthene	EPA 3540	8270	2.5	2.0	1	12/9/96	12/11/96	230	
Benzo(a)pyrene	EPA 3540	8270	25	1.5	10	12/9/96	12/11/96	1200	(a)
Indeno(1,2,3-cd)pyrene	EPA 3540	8270	2.5	2.0	1	12/9/96	12/11/96	260	
Dibenz(a,h)anthracene	EPA 3540	8270	2.5	2.0	1	12/9/96	12/11/96	60	
Benzo(g,h,i)perylene	EPA 3540	8270	2.5	2.0	1	12/9/96	12/11/96	220	

U Not detected at or above the MRL.
 (a) Result is from the analysis of a diluted sample, performed on 12/12/96. Dilution factor 1:10.

Approved By: Tan D. Kussinger Date: 12/13/96
 1522/052595