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LETTER REPORT REGARDING GROUP 4 SOIL DELINEATION SAMPLING EFFORT NS
MAYPORT FL
5/13/2002
TETRA TECH NUS



TETRA TECH NUS, INC.

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May 13, 2002

Project Number N0123

Commander, Southern Division
Naval Facilities Engineering Command
ATTN: Ms. Adrienne Wilson (Code ES31)
2155 Eagle Drive
North Charleston, South Carolina 29406

Reference: CLEAN Contract Number N62467-94-D-0888
Contract Task Order Number 0091

Subject: Group IV Soil Delineation Sampling Effort
Group IV, Naval Station Mayport
Mayport, Florida

Dear Ms. Wilson:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this letter report for the referenced Contract Task Order (CTO). This report was prepared for the U.S. Navy Southern Division Naval Facilities Engineering Command, for the Comprehensive Long-term Environmental Action Navy (CLEAN) Contract Number N62467-94-D-0888. The contents of this report document the results of the additional sampling as recommended in the Area of Concern (AOC) C Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) report, and as agreed upon by the Naval Station (NAVSTA) Mayport Partnering Team.

On January 24, 2002, TtNUS personnel collected three surface and one subsurface soil samples in an effort to delineate contamination previously detected in surface soil sample MPT-55-SS06-00. Sample MPT-55-SS06-00 was originally collected as a part of the Group IV RFI, but was included in the AOC C RFI due to its applicability to the AOC C RFI. It was collected at the confluence of two unlined earthen storm sewer conveyances, one draining the Building 191 area and the other paralleling Massey Avenue. The samples collected for this effort were also within the storm sewer conveyance. Figure 1 presents the sampling area relative to NAVSTA Mayport.

The samples were collected in accordance with applicable SOPs and were shipped under chain-of-custody protocol to a fixed-based laboratory. The samples were analyzed for volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method SW-846 8260B, semivolatile organic compounds (SVOCs) by USEPA Method SW-846 8260C, metals by USEPA Method SW-846 6010B, organochlorine pesticides by USEPA Method SW-846 8081A, and polychlorinated biphenyls (PCBs) by USEPA Method SW-846 8082.

SVOCs and PCBs were detected above Florida Department of Environmental Protection (FDEP) Soil Cleanup Target Levels (SCTLs) in the samples collected during this sampling effort. Six SVOCs were detected above SCTLs; five of which were detected above industrial criteria. Each sample had at least one SVOC detected above SCTL industrial criteria. In addition, PCBs were detected in two surface soil samples above SCTL residential criteria. The analytical results are presented in Table 1. Figure 2

Ms. Adrienne Wilson
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presents the analytical results detected above FDEP SCTLs. The results for sample MPT-55-SS06-00 are also provided as a reference.

The horizontal and vertical extents of contamination were not defined during this sampling effort. TtNUS recommends additional sampling along the storm sewer conveyance north of Building 191 and possibly an Interim Measure to remove the soil contamination present in the storm sewer conveyance.

If you have any questions about this submittal, please contact me at (904) 281-0400 or Terry Hansen at (850) 385-9899.

Regards,



Thomas N. Thompson

- pc: J. Cason, FDEP – 2 hardcopies, 1 CD
C. Mitchell, NAVSTA Mayport – 1 hardcopy, 1 CD
J. Beason, NS Jacksonville – 1 hardcopy, 1 CD
M. Halil, JA Jones – 1 CD
M. Perry, TtNUS – 1 hardcopy (unbound)
D. Wroblewski, TtNUS – cover letter only
File Copy

Tables

Table 1
AOC C Soil Delineation Analytical Results

Building 191 Soil Delineation
Naval Station Mayport
Mayport, Florida

Detected Constituents	FDEP SCTLs Residential	FDEP SCTLs Industrial	FDEP SCTLs Leaching	Sample Locations				
				MPT-55-				
				SS06-01 Aug-00	SS06-02 Jan-01	SS10-01 Jan-01	SS11-01 Jan-01	SS12-01 Jan-01
Pesticides µg/kg (USEPA Method 8081A)								
4,4'-DDD	4,600	18,000	4,000	< 18	30	40	7.3 J	--
4,4'-DDE	3,300	13,000	18,000	14 J	--	--	11	--
4,4'-DDT	3,300	13,000	11,000	--	--	170	--	--
Endosulfan sulfate	--	--	--	< 18	--	--	60	36
Endrin aldehyde	--	--	--	< 18	< 20	--	<9.4	<20
Endrin ketone	--	--	--	< 18	72	360J	66 J	120 J
Polychlorinated Biphenyls µg/kg (USEPA Method 8082)								
Aroclor 1260	500	2,100	17,000	800	400 J	800	620	120 J
Volatile Organics µg/L (USEPA Method 8260B)								
2-Butanone	3,100,000	21,000,000	17,000	< 25	< 25	< 26	< 26	3.8 J
Semivolatile Organics µg/kg (USEPA Method 8270C)								
Anthracene	18,000,000	260,000,000	2,500,000	160 J	130 J	1,800 J	66 J	440 J
Benzo(a)anthracene	1,400	5,000	3,200	2,600	2,500	32,000	1,000	8,000
Benzo(b)fluoranthene	1,400	4,800	10,000	5,700	6,200	69,000	3,000	18,000
Benzo(k)fluoranthene	15,000	52,000	25,000	2,200	2,200	31,000	1,200	10,000
Benzo(ghi)perylene	2,300,000	41,000,000	32,000,000	2,700	2,200	24,000	1,200	6,700
Benzo(a)pyrene	100	500	8,000	3,500	3,500	42,000	1,600	11,000
bis(2-Ethylhexyl)phthalate	76,000	280,000	3,600,000	< 720	290 J	< 9,400	69 J	< 1,900
Carbazole	53,000	190,000	600	290 J	260 J	2,900 J	97 J	780 J
Chrysene	140,000	450,000	77,000	3,900	4,300	51,000	1,900	13,000
Dibenz(a,h)anthracene	100	500	30,000	730	640 J	7,300 J	310 J	2,000
Di-n-octyl phthalate	1,500,000	27,000,000	480,000,000	< 720	150 J	< 9,400	< 370	< 1,900
Fluoranthene	2,900,000	48,000,000	1,200,000	5,600	5,300	72,000	1800	17,000
Indeno(1,2,3-cd)pyrene	1,500	5,300	28,000	2,600	2,100	23,000	1,100	6,400
Phenanthrene	2,000,000	30,000,000	250,000	1,400	1,000	16,000	440	3,300
Pyrene	1,800,000	32,000,000	700,000	4,000	5,300	63,000	2,200	16,000

See notes at end of table.

Table 1
AOC C Soil Delineation Analytical Results

Building 191 Soil Delineation
Naval Station Mayport
Mayport, Florida

Detected Constituents	FDEP SCTLs Residential	FDEP SCTLs Industrial	FDEP SCTLs Leaching	Sample Locations				
				MPT-55-				
				SS06-01 Aug-00	SS06-02 Jan-01	SS10-01 Jan-01	SS11-01 Jan-01	SS12-01 Jan-01
Metals mg/kg (USEPA Method 6010B Mercury Method 7471A)								
Aluminum	72,000,000	--	--	436 J	670	775	794	1,040
Antimony	26,000	240,000	5,000	< 0.34	0.63 J	1.3	1.4	0.92 J
Arsenic	800	240,000	5,000	1.10	0.85	6.7	0.850	1.1
Barium	110,000	87,000,000	1,600,000	10.1	11.4	17.9	11.6	14
Calcium	--	--	--	25,300	19,100	109,000	22,600	30,500
Cadmium	75,000	1,300,000	8,000	0.58	0.65	0.97	0.66	0.84
Cobalt	4,700,000	110,000,000	--	0.54	0.52	2.1 J	0.43	0.69 J
Chromium	210,000	420,000	38,000	5.3	7.8	9.7	5.2	8.5
Copper	110,000	76,000,000	--	30.3	19.0	29.4	16.4	31.3
Iron	23,000,000	480,000,000	--	4,510	1,950	11,200	1,940	2,040
Lead	400,000	920,000	--	89.6	55	56	74.5	59
Potassium	--	--	--	36.3	30.9	50.7	30.3	38.1
Magnesium	--	--	--	485.0	321	1,420	306	439
Manganese	1,600,000	22,000,000	--	25.7	17.7	83.3	18.6	30.2
Nickel	110,000	28,000,000	130,000	< 3.1	17	10.1 J	2.9	5.1
Sodium	--	--	--	< 78.9	64.3	157	120	61.9
Vanadium	15000	7,400,000	980,000	9.6	7.9	13.6	4.8	10.9
Zinc	23,000,000	560,000,000	6,000,000	139 J	159 J	288 J	181 J	236 J

Notes:

Constituents with no value were rejected during the validation process

J - Estimated result. Result is less than RL

SCTLs= Soil Cleanup Target Levels

USEPA = U.S. Environmental Protection Agency

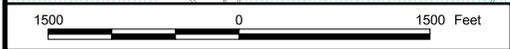
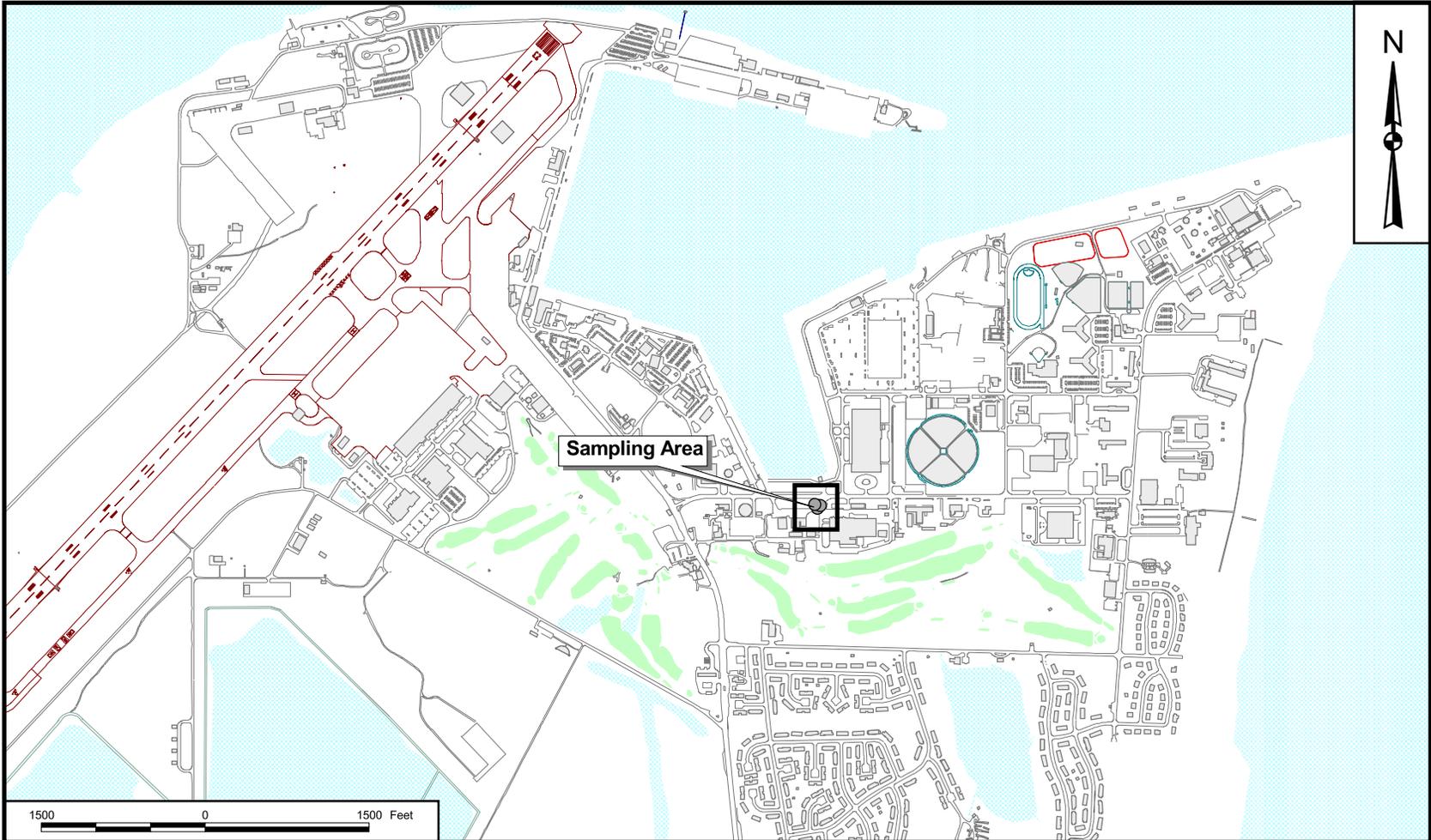
µg/kg = Micrograms per kilogram

µg/L - Micrograms per liter

Highlighted value are above FDEP SCTLs for an residential exposure scenario, Table II, FDEP Chapter 62-777 FAC.

Bold values are above FDEP SCTLs for an industrial exposure scenario, Table II, FDEP Chapter 62-777 FAC.

Figures

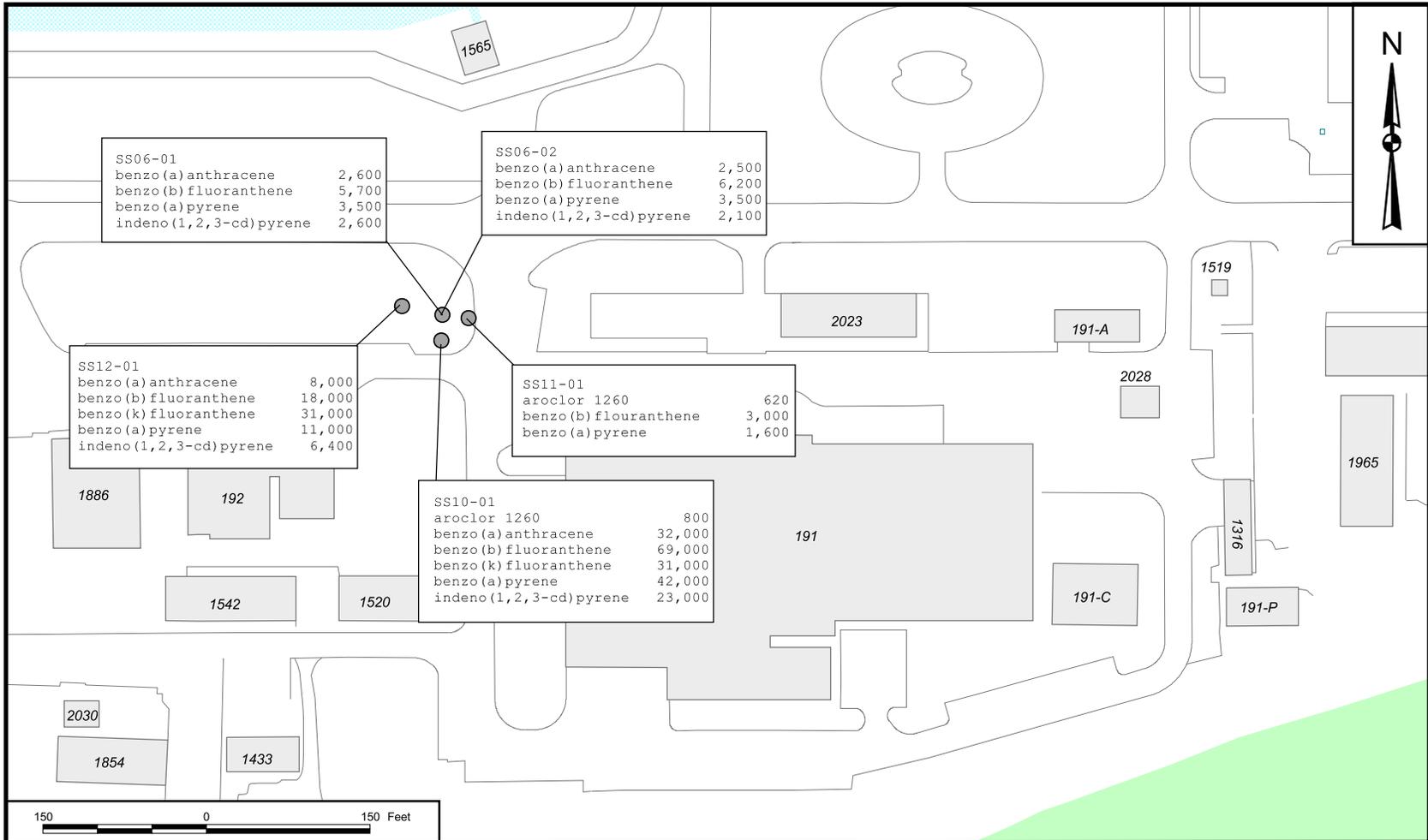


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A. JANOCHA	05/01/02
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T. THOMPSON	05/03/02
COST/SCHEDULE-AREA	
SCALE AS NOTED	



SAMPLING AREA LOCATION MAP
 GROUP IV
 U.S. NAVAL STATION
 MAYPORT, FLORIDA

CONTRACT NUMBER 0091	
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FIGURE 1	0



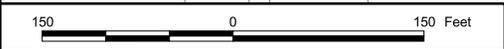
SS06-01	
benzo (a) anthracene	2,600
benzo (b) fluoranthene	5,700
benzo (a) pyrene	3,500
indeno (1,2,3-cd) pyrene	2,600

SS06-02	
benzo (a) anthracene	2,500
benzo (b) fluoranthene	6,200
benzo (a) pyrene	3,500
indeno (1,2,3-cd) pyrene	2,100

SS12-01	
benzo (a) anthracene	8,000
benzo (b) fluoranthene	18,000
benzo (k) fluoranthene	31,000
benzo (a) pyrene	11,000
indeno (1,2,3-cd) pyrene	6,400

SS11-01	
aroclor 1260	620
benzo (b) fluoranthene	3,000
benzo (a) pyrene	1,600

SS10-01	
aroclor 1260	800
benzo (a) anthracene	32,000
benzo (b) fluoranthene	69,000
benzo (k) fluoranthene	31,000
benzo (a) pyrene	42,000
indeno (1,2,3-cd) pyrene	23,000



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SCALE AS NOTED	



SOIL SAMPLING LOCATIONS □
 GROUP IV □
 U.S. NAVAL STATION □
 MAYPORT, FLORIDA

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FIGURE 2	0