N60200.AR.002022
NAS CECIL FIELD, FL
5090.3a

ASSESSMENT OF PARKING LOT/FLIGHT LINE AREA BACKGROUND DATA NAS CECIL FIELD FL

8/1/1999

TETRA TECH NUS INC

Assessment of Parking Lot/Flightline Area Background Data

Naval Air Station Cecil Field

Jacksonville, Florida

Southern Division
Naval Facilities Engineering Command

Contract Number N62467-94-D-0888
Contract Task Order 0078

August 1999

089913/P

ASSESSMENT OF PARKING LOT/FLIGHTLINE AREA BACKGROUND DATA

NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA

COMPREHENSIVE LONG-TERM ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29406

Submitted by:
Tetra Tech NUS, Inc.
661 Andersen Drive
Foster Plaza 7
Pittsburgh, Pennsylvania 15220

CONTRACT NUMBER N62467-94-D-0888
CONTRACT TASK ORDER 0078

AUGUST 1999

PREPARED UNDER SUPERVISION OF:

Mark P. Speranza

MARK SPERANZA, P.E.
TASK ORDER MANAGER
TETRA TECH NUS, INC.
PITTSBURGH, PENNSYLVANIA

APPROVED FOR SUBMITTAL BY:

Debbie Wroblewski

DEBBIE WROBLEWSKI
PROGRAM MANAGER
TETRA TECH NUS, INC.
PITTSBURGH, PENNSYLVANIA

04147

ASSESSMENT OF PARKING LOT/FLIGHTLINE AREA BACKGROUND DATA

Eighteen soil samples were collected from Parking Lot Areas 1, 2, 3 and 4 and 24 soil samples were collected from the Flightline Area. These samples were analyzed for polycyclic aromatic hydrocarbons (PAHs). These samples are being used to establish background PAH concentrations.

A statistical summary of the data was performed. Statistical parameters were developed separately for the Parking Lots and the Flightline. Of the PAHs, the carcinogenic PAH (cPAH) concentrations are of primary interest, specifically the concentrations of benzo[a]pyrene (BaP).

Means, standard deviations and the 95% upper confidence limits of the mean (UCL) were derived for BaP, total cPAH and benzo[a]pyrene equivalents (BaPEq). Because cPAHs are toxicologically and structurally similar, BaPEqs are used to represent total cPAHs in terms of their toxicity equivalence to BaP. For example, benzo[a]anthracene is related to BaP by a toxicity equivalence factor of 0.1. This means that a soil concentration of 1 mg/kg of benzo[a]anthracene is equivalent to 0.1 mg/kg of BaP. The BaPEq concentration for each sample can be derived using the toxicity equivalence factors set forth by the EPA. These are defined for each cPAH in Table 1.

TABLE 1

TOXICITY EQUIVALENCE FACTOR OF CPAHs

Parameter	Toxicity Equivalence Factor
Benzo[a]pyrene	1.0
Benzo[a]anthracene	0.1
Benzo[b]fluoranthene	0.1
Benzo[k]fluoranthene	0.01
Chrysene	0.001
Dibenz[ah]anthracene	1.0
Indeno[123cd]pyrene	0.1

If a cPAH concentration in a given sample is nondetect, then the value is treated as zero when summing the BaPEq concentration within that sample. When determining an average concentration among several samples, one-half the detection limit is used to represent the value of nondetects. When determining the average cPAH or BaPEq concentration, there obviously is no specific detection limit for a group of compounds. In samples where no cPAH is detected, the detection limit for BaP in that sample serves as the basis for assigning a value to that sample. As stated above, one-half the detection limit is used to represent the nondetect value when averaging across samples. Duplicate sample concentrations were

averaged to represent the concentration for a specific soil location. The background analytical data are provided in Attachment A. Figures illustrating the positive detections are presented in Attachment B.

For the Parking Lots, the statistical parameters are presented in Table 2. Because the distribution of these values better approximate lognormal distributions, the data were log-transformed and geometric means and upper confidence limits of the geometric means were also developed. These values are also presented in Table 2. Similarly, the statistical parameters for the Flightline Area are presented in Table 3

If a PAH concentration at a given site exceeds its Florida Soil Cleanup Target Level (SCTL), as defined in Chapter 62-777 of the Florida Administrative Code, a comparison to the background data is made. Based on the nature of the site being assessed, a determination is made as to whether the Parking Lot Background data or the Flightline Area Background data is used for the comparison.

TABLE 2

PARKING LOTS BACKGROUND STATISTICS

	BaP	cPAH	BaPEq
NORMAL PARAMETERS (ug/kg)			
Mean	172	1283	248
Standard Deviation	290	2702	438
UCL	306	2531	450
LOGNORMAL PARAMETERS (ug/kg)			
Mean	36	97	45
Standard Deviation	6.0	16.4	7.4
UCL	84	353	114

TABLE 3

FLIGHTLINE AREA BACKGROUND STATISTICS

	BaP	cPAH	BaPEq
NORMAL PARAMETERS (ug/kg)			
Mean	134	790	183
Standard Deviation	300	1659	391
UCL	254	1454	340
LOGNORMAL PARAMETERS (ug/kg)			
Mean	41	180	31
Standard Deviation	4.5	7.5	13.4
UCL	74	403	87

If BaP is the only cPAH that exceeds its respective SCTL, then the BaP concentrations are compared to the background BaP concentrations. If other cPAHs exceed their respective SCTLs, then the BaPEq concentrations are compared to the background BaPEq concentrations.

In accordance with EPA's *Supplemental Guidance to RAGS: Region 4 Bulletins—Addition #1* (Interim Draft, November 1998), the Gehan Test can be used to determine if concentrations at a site are significantly different than the background concentrations. The Gehan Test is a generalization of the Wilcoxon Rank Sum test. It is a nonparametric test that uses the ranks of the data in the combined data sets to determine if the two data sets are different. It does not use means or standard deviations to make this determination.

This test is conducted at a confidence level of 80%. This means that there is a 20% chance of saying that the PAH concentrations are greater than background concentrations when in reality they are not greater. This tends to be more conservative and ensures that remediation is conducted, even when it may not be necessary. If the result of the statistical analysis indicates that the PAH concentration is not statistically greater than background, then a power test is conducted. The power of a statistical test is the ability of the test to detect a difference with a given level of confidence. If the estimate of power is less than 0.65, then it cannot be concluded that the PAH concentration is not greater than background.

ATTACHMENT A

ANALYTICAL DATA

ATTACHMENT A

FLIGHT LINE AND PARKING LOG BACKGROUND DATA
NAS CECIL FIELD
JACKSONVILLE, FLORIDA

order	001	002	003	004	005	006	007	008	009
location	CEF-FBG/SS-001	CEF-FBG/SS-002	CEF-FBG/SS-003	CEF-FBG/SS-004	CEF-FBG/SS-004	CEF-FBG/SS-005	CEF-FBG/SS-006	CEF-FBG/SS-007	CEF-FBG/SS-008
nsample	CEF-FBG-SS-001-01	CEF-FBG-SS-002-01	CEF-FBG-SS-003-01	CEF-FBG-SS-004-01	CEF-FBG-SS-004-01-D	CEF-FBG-SS-005-01	CEF-FBG-SS-006-01	CEF-FBG-SS-007-01	CEF-FBG-SS-008-01
sample	CEF-FBG-SS-001-01	CEF-FBG-SS-002-01	CEF-FBG-SS-003-01	CEF-FBG-SS-004-01	CEF-FBG-SS-DU-01	CEF-FBG-SS-005-01	CEF-FBG-SS-006-01	CEF-FBG-SS-007-01	CEF-FBG-SS-008-01
sdg	F4092	F4092	F4092	F4092	F4092	F4092	F4092	F4092	F4092
sample_dat	01-May-99	01-May-99	01-May-99	01-May-99	01-May-99	01-May-99	01-May-99	01-May-99	01-May-99
sort	c_001	c_002	c_003	c_004	c_005	c_006	c_007	c_008	c_009
Semivolatile Organics (ug/kg)									
1-METHYLNAPHTHALENE	102 U	105 U	103 U	104 U	104 U	102 U	106 U	104 U	103 U
2-METHYLNAPHTHALENE	102 U	105 U	103 U	104 U	104 U	102 U	817	155	103 U
ACENAPHTHENE	102 U	105 U	103 U	104 U	104 U	102 U	1430	1400	103 U
ACENAPHTHYLENE	102 U	105 U	103 U	104 U	104 U	102 U	106 U	104 U	103 U
ANTHRACENE	102 U	105 U	103 U	104 U	104 U	102 U	77.4	104 U	103 U
BENZO(A)ANTHRACENE	15 U	16 U	43.2	16 U	30.5	31.8	1200	201	40
BENZO(A)PYRENE	15 U	16 U	25.7	51.7	31.7	19.8	1470	337	28.7
BENZO(B)FLUORANTHENE	15 U	16 U	31.8	72.6	52	32.4	1690	253	51.1
BENZO(G,H,I)PERYLENE	15 U	16 U	24.3	61.5	16 U	22.4	1200	187	32.1
BENZO(K)FLUORANTHENE	15 U	16 U	19 J	41.6	20.6 J	15 U	595	112	21.5
CHRYSENE	15 U	16 U	62.8	16 U	86.2	36	1850	284	69.4
DIBENZO(A,H)ANTHRACENE	15 U	16 U	15 U	40.4	16 U	15 U	16 U	84.8	15 U
FLUORANTHENE	15 U	16 U	128	43.8	33.2	80.1	2290	452	79.9
FLUORENE	102 U	105 U	103 U	104 U	104 U	102 U	225	104 U	103 U
INDENO(1,2,3-CD)PYRENE	15 U	16 U	15 U	16 U	48.2	15 U	1330	308	37.4
NAPHTHALENE	102 U	105 U	103 U	104 U	104 U	102 U	106 U	104 U	103 U
PHENANTHRENE	102 U	105 U	103 U	104 U	104 U	102 U	521	185	37.6
PYRENE	15 U	16 U	73.5	74	46.2	43.7	2170	452	81.4

from pbfg_sam.dbf
from pbfg_res.dbf
from pbfg_res.xls

ATTACHMENT A

FLIGHT LINE AND PARKING LOG BACKGROUND DATA
NAS CECIL FIELD
JACKSONVILLE, FLORIDA

order	010	011	012	013	014	015	016	017	018
location	CEF-FBG/SS-009	CEF-FBG/SS-010	CEF-FBG/SS-011	CEF-FBG/SS-012	CEF-FBG/SS-013	CEF-FBG/SS-014	CEF-FBG/SS-015	CEF-FBG/SS-015	CEF-FBG/SS-016
nsample	CEF-FBG-SS-009-01	CEF-FBG-SS-010-01	CEF-FBG-SS-011-01	CEF-FBG-SS-012-01	CEF-FBG-SS-013-01	CEF-FBG-SS-014-01	CEF-FBG-SS-015-01	CEF-FBG-SS-015-01-D	CEF-FBG-SS-016-01
sample	CEF-FBG-SS-009-01	CEF-FBG-SS-010-01	CEF-FBG-SS-011-01	CEF-FBG-SS-012-01	CEF-FBG-SS-013-01	CEF-FBG-SS-014-01	CEF-FBG-SS-015-01	CEF-FBG-SS-DU-02	CEF-FBG-SS-016-01
sdg	F4092	F4092	F4092	F4092	F4092	F4092	F4092	F4092	F4092
sample_dat	01-May-99	01-May-99	01-May-99	01-May-99	01-May-99	01-May-99	01-May-99	01-May-99	01-May-99
sort	c_010	c_011	c_012	c_013	c_014	c_015	c_016	c_017	c_018
Semivolatile Organics (ug/kg)									
1-METHYLNAPHTHALENE	102 U	103 U	104 U	106 U	103 U	104 U	105 U	104 U	112 U
2-METHYLNAPHTHALENE	102 U	103 U	104 U	106 U	103 U	104 U	105 U	104 U	112 U
ACENAPHTHENE	102 U	103 U	104 U	106 U	103 U	104 U	105 U	104 U	112 U
ACENAPHTHYLENE	102 U	103 U	104 U	106 U	103 U	104 U	105 U	104 U	112 U
ANTHRACENE	102 U	103 U	104 U	106 U	103 U	104 U	105 U	104 U	112 U
BENZO(A)ANTHRACENE	33.1	55.7	67.9	56.3	79.8	16 U	16 U	16 U	17 U
BENZO(A)PYRENE	36	66.6	65.8	79.3	98	16 U	16 U	16 U	17 U
BENZO(B)FLUORANTHENE	53.4	92.7	109	99.3	133	16 U	16.5	16 U	17 U
BENZO(G,H,I)PERYLENE	42.4	65.2	70.8	85.4	119	16 U	25	16 U	17 U
BENZO(K)FLUORANTHENE	25.7	38.5	41.2	45.5	62.5	19.7	16 U	16 U	17 U
CHRYSENE	73	82.9	101	95.4	132	16 U	24.2	16 U	17 U
DIBENZO(A,H)ANTHRACENE	15 U	15 U	16 U	16 U	15 U	16 U	16 U	16 U	17 U
FLUORANTHENE	75.4	108	159	187	167	16 U	20.7	16 U	17 U
FLUORENE	102 U	103 U	104 U	106 U	103 U	104 U	105 U	104 U	112 U
INDENO(1,2,3-CD)PYRENE	15 U	71.6	82	94.2	158	16 U	16 U	16 U	17 U
NAPHTHALENE	102 U	103 U	104 U	106 U	103 U	104 U	105 U	104 U	112 U
PHENANTHRENE	102 U	103 U	104 U	109	103 U	104 U	105 U	104 U	112 U
PYRENE	79.8	123	156	136	211	16 U	20.5	16 U	17 U

from pbfg_sam.dbf
from pbfg_res.dbf
from pbfg_res.xls

ATTACHMENT A

FLIGHT LINE AND PARKING LOG BACKGROUND DATA
NAS CECIL FIELD
JACKSONVILLE, FLORIDA

order	019	020	021	022	023	024	025	026	027
location	CEF-FBG/SS-017	CEF-FBG/SS-018	CEF-FBG/SS-019	CEF-FBG/SS-020	CEF-FBG/SS-021	CEF-FBG/SS-022	CEF-FBG/SS-023	CEF-FBG/SS-023	CEF-FBG/SS-024
nsample	CEF-FBG-SS-017-01	CEF-FBG-SS-018-01	CEF-FBG-SS-019-01	CEF-FBG-SS-020-01	CEF-FBG-SS-021-01	CEF-FBG-SS-022-01	CEF-FBG-SS-023-01	CEF-FBG-SS-023-01-D	CEF-FBG-SS-024-01
sample	CEF-FBG-SS-017-01	CEF-FBG-SS-018-01	CEF-FBG-SS-019-01	CEF-FBG-SS-020-01	CEF-FBG-SS-021-01	CEF-FBG-SS-022-01	CEF-FBG-SS-023-01	CEF-FBG-SS-DU-03	CEF-FBG-SS-024-01
sdg	F4092	F4092	F4092	F4092	F4092	F4092	F4092	F4092	F4092
sample_dat	01-May-99	01-May-99	01-May-99	01-May-99	01-May-99	01-May-99	01-May-99	01-May-99	01-May-99
sort	c_019	c_020	c_021	c_022	c_023	c_024	c_025	c_026	c_027
Semivolatile Organics (ug/kg)									
1-METHYLNAPHTHALENE	107 U	105 U	108 U	105 U	107 U	104 U	104 U	104 U	104 U
2-METHYLNAPHTHALENE	107 U	105 U	138	204	107 U	104 U	194	150	104 U
ACENAPHTHENE	107 U	105 U	116	165	107 U	104 U	215	151	104 U
ACENAPHTHYLENE	107 U	105 U	108 U	150	107 U	104 U	104 U	157	104 U
ANTHRACENE	107 U	105 U	108 U	105 U	107 U	104 U	104 U	104 U	104 U
BENZO(A)ANTHRACENE	36.3	16 U	172	123	16 U	16 U	127	84.8	84.4
BENZO(A)PYRENE	68.9	16 U	216	257	16 U	16 U	249	168	130
BENZO(B)FLUORANTHENE	99.3	24.7	362	343	16 U	16 U	470	320	240
BENZO(G,H,I)PERYLENE	90.6	16 U	212	371	16 U	16 U	511	460	237
BENZO(K)FLUORANTHENE	41.6	16 U	132	146	16 U	16 U	178	136	114
CHRYSENE	58.1	28.4	311	207	19.5	16 U	192	109	122
DIBENZO(A,H)ANTHRACENE	16 U	16 U	16 U	16 U	16 U	16 U	44.7	46.2	16 U
FLUORANTHENE	58.2	25	244	216	17.8	16 U	171	122	71.8
FLUORENE	107 U	105 U	28	105 U	107 U	104 U	104 U	104 U	104 U
INDENO(1,2,3-CD)PYRENE	90.9	16 U	242	387	16 U	16 U	523	445	223
NAPHTHALENE	107 U	105 U	108 U	105 U	107 U	104 U	104 U	104 U	104 U
PHENANTHRENE	107 U	105 U	108 U	105 U	107 U	104 U	104 U	104 U	104 U
PYRENE	86	29.4	267	207	16 U	16 U	216	168	91.4

from pbfg_sam.dbf
from pbfg_res.dbf
from pbfg_res.xls

ATTACHMENT A

FLIGHT LINE AND PARKING LOG BACKGROUND DATA
NAS CECIL FIELD
JACKSONVILLE, FLORIDA

order	028	029	030	031	032	033	034	035	036
location	CEF-PBG-SS-001	CEF-PBG-SS-002	CEF-PBG-SS-003	CEF-PBG-SS-004	CEF-PBG-SS-004	CEF-PBG-SS-005	CEF-PBG-SS-006	CEF-PBG-SS-007	CEF-PBG-SS-008
nsample	CEF-PBG-SS-001-01	CEF-PBG-SS-002-01	CEF-PBG-SS-003-01	CEF-PBG-SS-004-01	CEF-PBG-SS-004-01-D	CEF-PBG-SS-005-01	CEF-PBG-SS-006-01	CEF-PBG-SS-007-01	CEF-PBG-SS-008-01
sample	CEF-PBG-SS-001-01	CEF-PBG-SS-002-01	CEF-PBG-SS-003-01	CEF-PBG-SS-004-01	CEF-PBG-SS-004-01-D	CEF-PBG-SS-005-01	CEF-PBG-SS-006-01	CEF-PBG-SS-007-01	CEF-PBG-SS-008-01
sdg	F4089	F4089	F4089	F4089	F4089	F4089	F4089	F4089	F4089
sample_dat	02-May-99	02-May-99	02-May-99	02-May-99	02-May-99	02-May-99	02-May-99	02-May-99	02-May-99
sort	c_028	c_029	c_030	c_031	c_032	c_033	c_034	c_035	c_036
Semivolatile Organics (ug/kg)									
1-METHYLNAPHTHALENE	120 U	120 U	110 U	110 U	100 U	110 U	110 U	100 U	120 U
2-METHYLNAPHTHALENE	120 U	120 U	110 U	110 U	100 U	110 U	110 U	100 U	120 U
ACENAPHTHENE	120 U	120 U	110 U	110 U	100 U	110 U	110 U	100 U	120 U
ACENAPHTHYLENE	120 U	120 U	110 U	110 U	100 U	110 U	110 U	100 U	120 U
ANTHRACENE	120 U	120 U	110 U	110 U	100 U	110 U	110 U	100 U	120 U
BENZO(A)ANTHRACENE	18 U	19 U	16 U	17 U	15 U	17 U	16 U	16 U	18 U
BENZO(A)PYRENE	18 U	19 U	16 U	17 U	15 U	17 U	16 U	16 U	45.2
BENZO(B)FLUORANTHENE	18 U	19 U	16 U	17 U	15 U	17 U	16 U	16 U	116
BENZO(G,H,I)PERYLENE	18 U	19 U	84	17 U	15 U	17 U	16 U	16 U	326
BENZO(K)FLUORANTHENE	18 U	19 U	16 U	17 U	15 U	17 U	16 U	16 U	23.1
CHRYSENE	18 U	19 U	16 U	17 U	15 U	17 U	16 U	16 U	485
DIBENZO(A,H)ANTHRACENE	18 U	19 U	16 U	17 U	15 U	17 U	16 U	16 U	18 U
FLUORANTHENE	18 U	19 U	16 U	17 U	15 U	17 U	16 U	16 U	778
FLUORENE	120 U	120 U	110 U	110 U	100 U	110 U	110 U	100 U	120 U
INDENO(1,2,3-CD)PYRENE	18 U	19 U	16 U	17 U	15 U	17 U	16 U	16 U	430
NAPHTHALENE	120 U	120 U	110 U	110 U	100 U	110 U	110 U	100 U	120 U
PHENANTHRENE	120 U	120 U	110 U	110 U	100 U	110 U	110 U	100 U	120 U
PYRENE	18 U	19 U	16 U	50.6 J	15 UJ	17 U	16 U	16 U	836

from pbfg_sam.dbf
from pbfg_res.dbf
from pbfg_res.xls

ATTACHMENT A

FLIGHT LINE AND PARKING LOG BACKGROUND DATA
NAS CECIL FIELD
JACKSONVILLE, FLORIDA

order	037	038	039	040	041	042	043	044	045
location	CEF-PBG-SS-009	CEF-PBG-SS-010	CEF-PBG-SS-011	CEF-PBG-SS-012	CEF-PBG-SS-013	CEF-PBG-SS-013	CEF-PBG-SS-014	CEF-PBG-SS-015	CEF-PBG-SS-016
nsample	CEF-PBG-SS-009-01	CEF-PBG-SS-010-01	CEF-PBG-SS-011-01	CEF-PBG-SS-012-01	CEF-PBG-SS-013-01	CEF-PBG-SS-013-01-D	CEF-PBG-SS-014-01	CEF-PBG-SS-015-01	CEF-PBG-SS-016-01
sample	CEF-PBG-SS-009-01	CEF-PBG-SS-010-01	CEF-PBG-SS-011-01	CEF-PBG-SS-012-01	CEF-PBG-SS-013-01	CEF-PBG-SS-013-01-D	CEF-PBG-SS-014-01	CEF-PBG-SS-015-01	CEF-PBG-SS-016-01
sdg	F4089	F4089	F4089	F4089	F4089	F4089	F4089	F4089	F4089
sample_dat	02-May-99	02-May-99	02-May-99	02-May-99	02-May-99	02-May-99	02-May-99	02-May-99	02-May-99
sort	c_037	c_038	c_039	c_040	c_041	c_042	c_043	c_044	c_045
Semivolatile Organics (ug/kg)									
1-METHYLNAPHTHALENE	120 U	110 U	120 U	110 U	110 U	110 U	110 U	100 U	100 U
2-METHYLNAPHTHALENE	120 U	110 U	120 U	110 U	110 U	110 U	110 U	100 U	100 U
ACENAPHTHENE	120 U	110 U	120 U	110 U	110 U	110 U	110 U	100 U	100 U
ACENAPHTHYLENE	120 U	110 U	120 U	110 U	110 U	110 U	110 U	100 U	100 U
ANTHRACENE	120 U	110 U	120 U	110 U	110 U	110 U	110 U	100 U	100 U
BENZO(A)ANTHRACENE	228	516	154	17 U	124 J	312 J	126	16 U	118
BENZO(A)PYRENE	574	827	451	19	39.4 J	207 J	94	16 U	35.4
BENZO(B)FLUORANTHENE	137	397	280	17 U	256 J	867 J	452	16 U	123
BENZO(G,H,I)PERYLENE	233	301	263	17 U	266 J	734 J	407	16 U	134
BENZO(K)FLUORANTHENE	17.5	126	175	17 U	27 J	184 J	124	16 U	29.7
CHRYSENE	415	620	391	17 U	361 J	856 J	432	16 U	16 U
DIBENZO(A,H)ANTHRACENE	17 U	16 U	17 U	17 U	16 U	16 U	17 U	16 U	16 U
FLUORANTHENE	880	1540	675	17 U	559 J	1970 J	682	162	648
FLUORENE	120 U	110 U	120 U	110 U	110 U	110 U	110 U	100 U	100 U
INDENO(1,2,3-CD)PYRENE	243	372	322	17 U	222 J	801 J	385	16 U	142
NAPHTHALENE	120 U	110 U	120 U	110 U	110 U	110 U	110 U	100 U	100 U
PHENANTHRENE	120 U	110 U	120 U	110 U	110 U	110 U	110 U	100 U	168
PYRENE	994	952	476	44.6	308 J	992 J	477	16 U	364

from pbfg_sam.dbf
from pbfg_res.dbf
from pbfg_res.xls

ATTACHMENT A

FLIGHT LINE AND PARKING LOG BACKGROUND DATA
NAS CECIL FIELD
JACKSONVILLE, FLORIDA

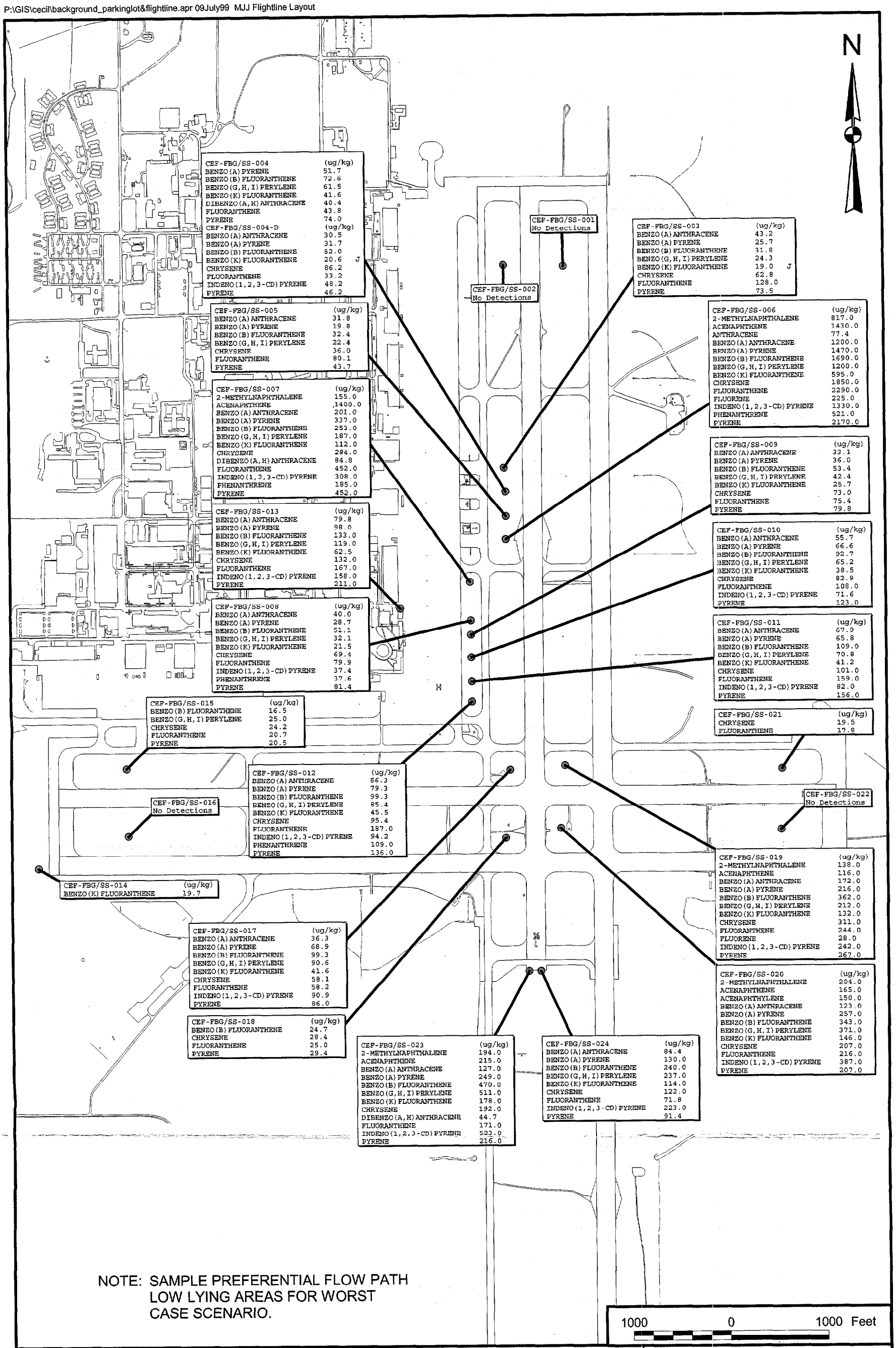
order	**046**	**047**
location	CEF-PBG-SS-017	CEF-PBG-SS-018
nsample	CEF-PBG-SS-017-01	CEF-PBG-SS-018-01
sample	CEF-PBG-SS-017-01	CEF-PBG-SS-018-01
sdg	F4089	F4089
sample_dat	02-May-99	02-May-99
sort	**c_046**	**c_047**
Semivolatile Organics (ug/kg)		
1-METHYLNAPHTHALENE	100 U	1230
2-METHYLNAPHTHALENE	100 U	907
ACENAPHTHENE	100 U	1800
ACENAPHTHYLENE	100 U	100 U
ANTHRACENE	100 U	107
BENZO(A)ANTHRACENE	15 U	1100
BENZO(A)PYRENE	15 U	846
BENZO(B)FLUORANTHENE	15 U	3500
BENZO(G,H,I)PERYLENE	15 U	2600
BENZO(K)FLUORANTHENE	15 U	1130
CHRYSENE	15 U	1780
DIBENZO(A,H)ANTHRACENE	15 U	16 U
FLUORANTHENE	15 U	3620
FLUORENE	100 U	100 U
INDENO(1,2,3-CD)PYRENE	15 U	3100
NAPHTHALENE	100 U	391
PHENANTHRENE	100 U	100 U
PYRENE	15 U	2630

from pbfg_sam.dbf
from pbfg_res.dbf
from pbfg_res.xls

ATTACHMENT B

FIGURES SHOWING LOCATIONS OF POSITIVE DETECTIONS

P:\GIS\cecil\background_parkinglot&flightline.apr 09July99 MJJ Flightline Layout

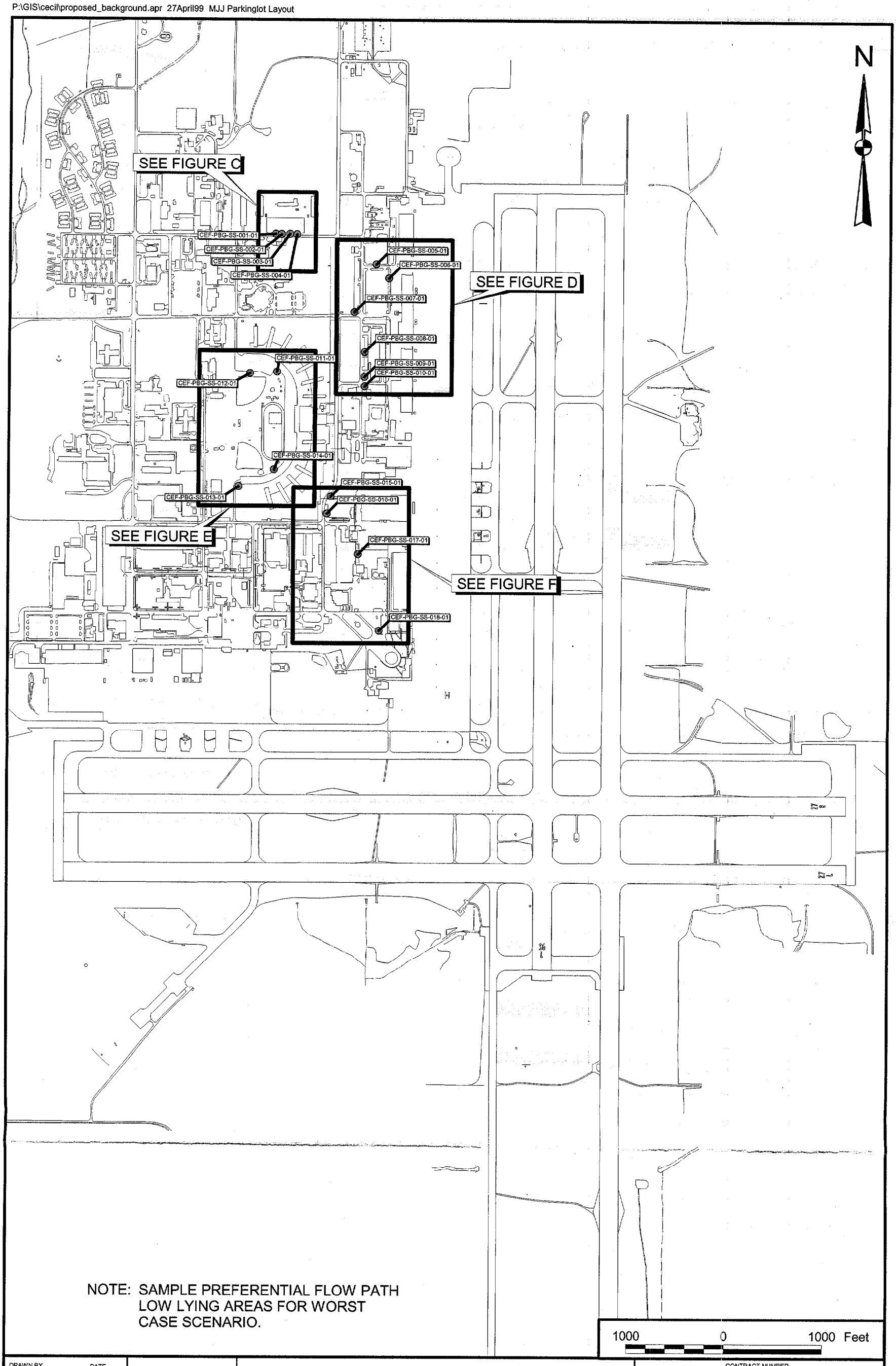


NOTE: SAMPLE PREFERENTIAL FLOW PATH
LOW LYING AREAS FOR WORST
CASE SCENARIO.

DRAWN BY MJJ	DATE 26April99	POSITIVE HITS FOR BACKGROUND SAMPLE LOCATIONS FOR FLIGHTLINE AREA NAS CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER —
CHECKED BY —	DATE —		APPROVED BY — DATE —
COST/SCHEDULE-AREA			APPROVED BY — DATE —
SCALE AS NOTED			DRAWING NO. FIGURE A / REV 0

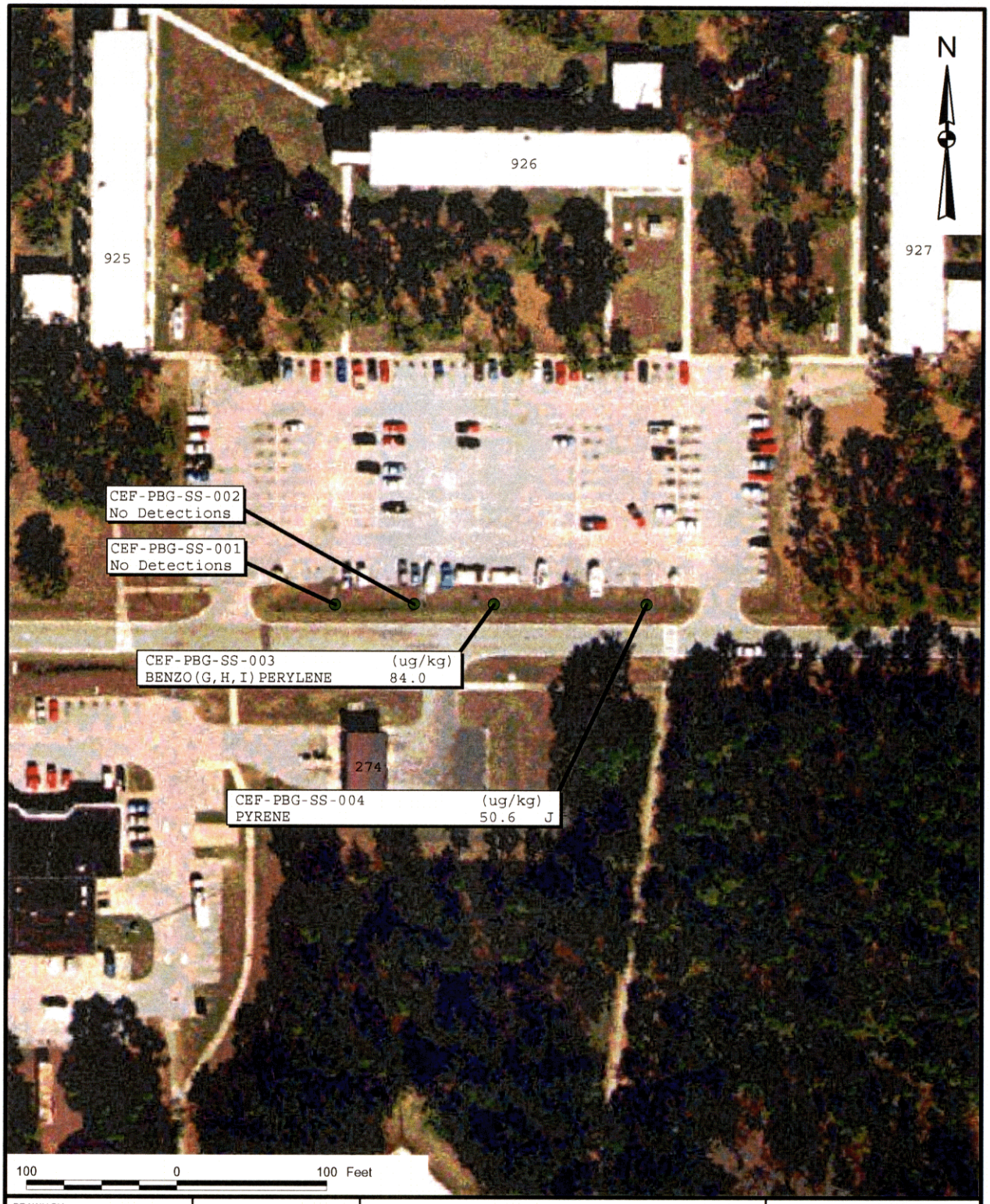
04147FB12

P:\GIS\cecil\proposed_background.apr 27April99 MJJ Parkinglot Layout



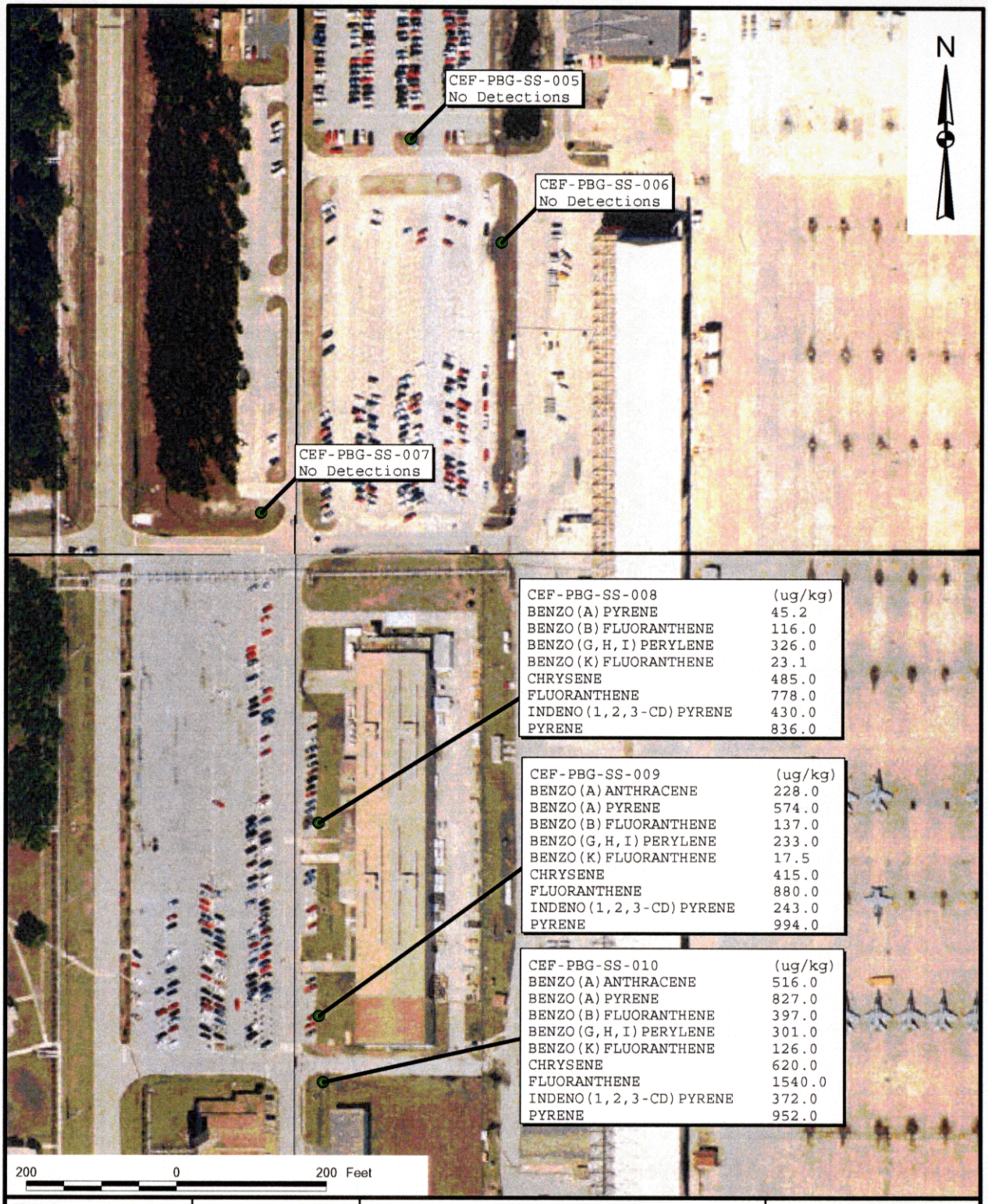
NOTE: SAMPLE PREFERENTIAL FLOW PATH LOW LYING AREAS FOR WORST CASE SCENARIO.

DRAWN BY MJJ	DATE 26April99	PROPOSED BACKGROUND SAMPLE LOCATIONS FOR PARKING LOT AREA NAS CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER —
CHECKED BY —	DATE —		APPROVED BY — DATE —
COST/SCHEDULE-AREA			APPROVED BY — DATE —
SCALE AS NOTED			DRAWING NO. FIGURE B / REV 0



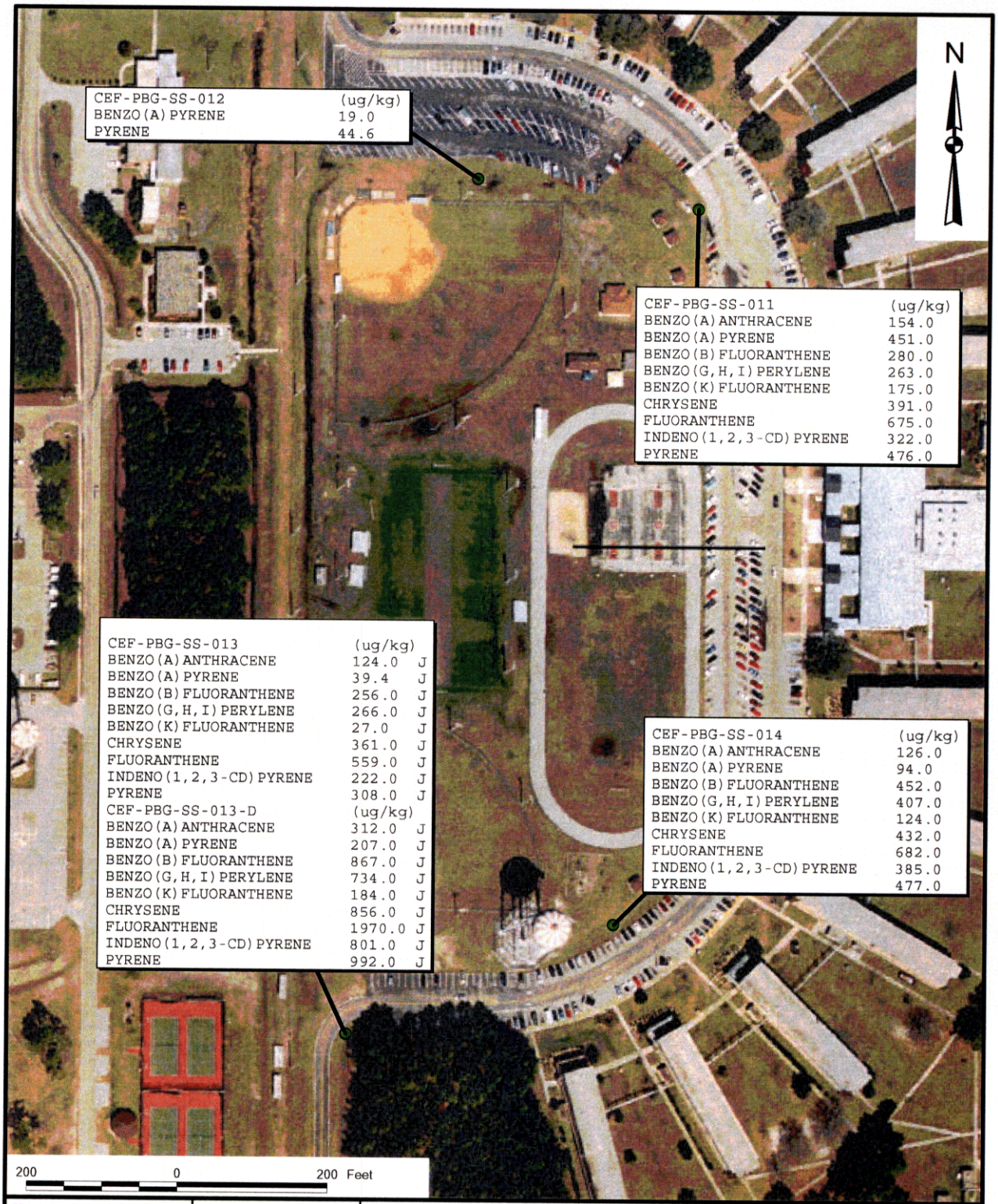
DRAWN BY / DATE		ENLARGEMENT OF PARKINGLOT AREA 1 POSITIVE HITS FOR BACKGROUND SAMPLE LOCATIONS FOR PARKINGLOT AREA NAS CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER --
CHECKED BY / DATE			APPROVED BY -- DATE --
COST/SCHEDULE-AREA			APPROVED BY -- DATE --
SCALE AS NOTED			DRAWING NO. FIGURE C / REV 0

P:\GIS\cecil\background_parkinglot&flightline.apr 09July99 MJJ Parkinglot Area 1 Layout



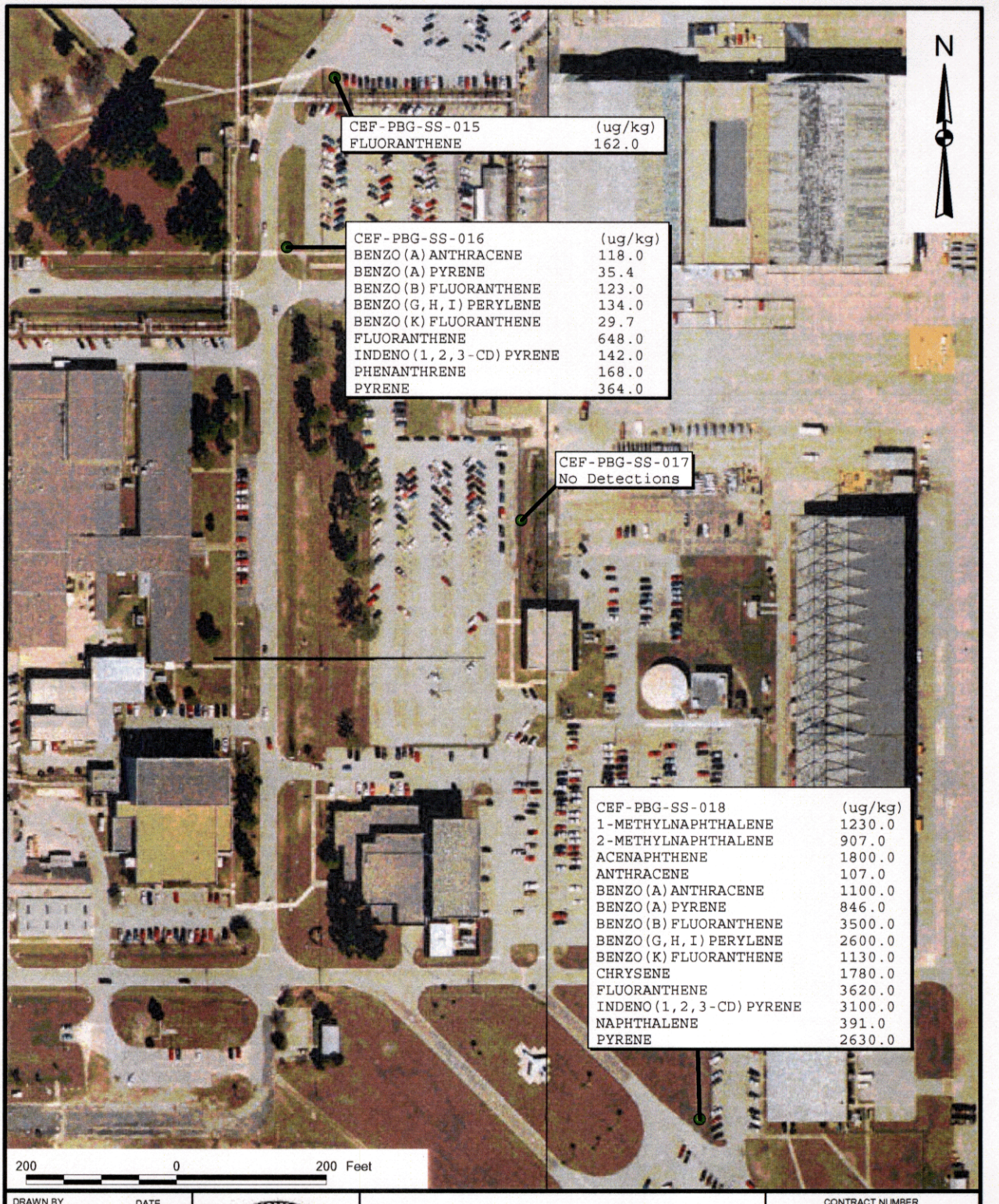
DRAWN BY / DATE		ENLARGEMENT OF PARKINGLOT AREA 2 POSITIVE HITS FOR BACKGROUND SAMPLE LOCATIONS FOR PARKINGLOT AREA NAS CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER —
CHECKED BY / DATE			APPROVED BY — DATE —
COST/SCHEDULE-AREA			APPROVED BY — DATE —
SCALE AS NOTED			DRAWING NO. FIGURE D / REV 0

P:\GIS\cecil\background_parkinglot&flightline.apr 09July99 MJJ Parkinglot Area 2 Layout



DRAWN BY DATE		ENLARGEMENT OF PARKINGLOT AREA 3 POSITIVE HITS FOR BACKGROUND SAMPLE LOCATIONS FOR PARKINGLOT AREA NAS CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER --
CHECKED BY DATE			APPROVED BY -- DATE --
COST/SCHEDULE-AREA			APPROVED BY -- DATE --
SCALE AS NOTED			DRAWING NO. FIGURE E / REV 0

P:\GIS\cecil\background_parkinglot&flightline.apr 09July99 MJJ Parkinglot Area 3 Layout



DRAWN BY DATE		ENLARGEMENT OF PARKINGLOT AREA 4 POSITIVE HITS FOR BACKGROUND SAMPLE LOCATIONS FOR PARKINGLOT AREA NAS CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER --
CHECKED BY DATE			APPROVED BY -- DATE --
COST/SCHEDULE-AREA			APPROVED BY -- DATE --
SCALE AS NOTED			DRAWING NO. FIGURE F / REV 0

P:\GIS\cecil\background_parkinglot&flightline.apr 09July99 MJJ Parkinglot Area 4 Layout

ATTACHMENT B

NAS CECIL FIELD
JACKSONVILLE, FLORIDA

BaP DATA

		BaP	cPAH	BaPEq			
P	1	9	9	9	2.197225	2.197225	2.197225
P	2	9.5	9.5	9.5	2.251292	2.251292	2.251292
P	3	8	8	8	2.079442	2.079442	2.079442
P	4	8.5	8.5	8.5	2.140066	2.140066	2.140066
P	5	8.5	8.5	8.5	2.140066	2.140066	2.140066
P	6	8	8	8	2.079442	2.079442	2.079442
P	7	8	8	8	2.079442	2.079442	2.079442
P	8	45.2	1099.3	100.5	3.811097	7.002429	4.610158
P	9	574	1614.5	635.4	6.352629	7.386781	6.454255
P	10	827	2858	957.4	6.717805	7.957877	6.864221
P	11	451	1773	528.7	6.111467	7.480428	6.270421
P	12	19	19	19	2.944439	2.944439	2.944439
P	13	123	2130	254	4.812184	7.663877	5.537334
P	14	94	1613	192	4.543295	7.385851	5.257495
P	15	8	8	8	2.079442	2.079442	2.079442
P	16	35.4	448.1	74	3.566712	6.105016	4.304065
P	17	7.5	7.5	7.5	2.014903	2.014903	2.014903
P	18	846	11456	1629	6.740519	9.346269	7.395722
F	1	7.5	7.5	7.5	2.014903	2.014903	2.014903
F	2	8	8	8	2.079442	2.079442	2.079442
F	3	25.7	182.5	33	3.246491	5.20675	3.496508
F	4	41.7	340.4	97	3.730501	5.830121	4.574711
F	5	19.8	120	26	2.985682	4.787492	3.258097
F	6	1470	8135	1900	7.293018	9.003931	7.549609
F	7	337	1579.8	499	5.820083	7.365054	6.212606
F	8	28.7	248.1	42	3.356897	5.513832	3.73767
F	9	36	221.2	45	3.583519	5.399067	3.806662
F	10	66.6	408	89	4.198705	6.011267	4.488636
F	11	35.8	436.9	62	3.577948	6.079704	4.127134
F	12	79.3	470	105	4.373238	6.152733	4.65396
F	13	98	663.3	136	4.584967	6.497227	4.912655
F	14	8	19.7	0.2	2.079442	2.980619	-1.609438
F	15	8	40.7	1.7	2.079442	3.706228	0.530628
F	16	8	8	8	2.079442	2.079442	2.079442
F	17	68.9	395.1	92	4.232656	5.979139	4.521789
F	18	8	53.1	2.5	2.079442	3.972177	0.916291
F	19	216	1435	295	5.375278	7.26892	5.686975
F	20	257	1463	344	5.549076	7.288244	5.840642
F	21	8	19.5	0.02	2.079442	2.970414	-3.912023
F	22	8	8	8	2.079442	2.079442	2.079442
F	23	249	1783.7	408	5.517453	7.486445	6.011267
F	24	130	913.4	186	4.867534	6.817174	5.225747
		150.3	1001.09	210.9505	3.655369	4.926287	3.594828
		292.5846	2152.474	408.2337	1.625922	2.374366	2.339408
		238.7859	1652.06	334.412	4.147095	5.644363	4.302332
					63.24996	282.6935	73.87187
		116.75	1351.075	190.5			
		8	8.625	8			
	Hi-Cut	279.875	3364.75	464.25			
					36.31764	96.94337	45.451
PARKING		171.6444	1282.55	248.0556	3.592304	4.574127	3.816635
		290.077	2701.833	438.1706	1.816786	2.799866	1.996361
		305.6505	2530.708	450.476	4.431599	5.867573	4.738888
					84.06576	353.3903	114.3071
					40.55538	179.5416	30.82953
FLIGHTLINE		134.2917	789.9958	183.1217	3.702668	5.190407	3.428473
		299.6393	1659.821	391.5181	1.505803	2.021283	2.596683
		254.17	1454.049	339.7584	4.305103	5.999073	4.467342
					74.07684	403.0549	87.12485