DEPARTMENT OF THE ARMY
BASE REALIGNMENT AND CLOSURE
ATLANTA FIELD OFFICE
BRAC ENVIRONMENTAL COORDINATOR
HAMILTON ARMY AIRFIELD
1 BURMA ROAD
NOVATO, CALIFORNIA 94949

April 5, 2004

DAIM-BO-A-HA

Subject: Forwarding the *Source Investigation Report for the Archives Search Report Sites 4, 18, and 19* Hamilton Army Airfield; Novato, CA.

Ms. Naomi Feger
S.F. Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Dear Ms. Feger,

The Army is pleased to provide the *Source Investigation Report for the Archives Search Report Sites 4, 18, and 19* Hamilton Army Airfield; Novato, CA for your review.

This submittal satisfies Task 3b of Board Order No. R2-2003-0076 Site Cleanup Requirements (SCR) – Hamilton Army Airfield pertaining to the Archives Search Report (ASR) sites. The ASR sites documented in this report are: the Skeet Range, Firing-In Butt, and Testing Range. These sites were included in the *Miscellaneous Sites Investigation Workplan,* which satisfied Task 3a of the SCRs.

Based on the data, the Army recommends further investigation at the Testing Range and Skeet Range sites. The Army recommends no further investigation at the Firing-In Butt because metal concentrations were below action goals at this site.

This document is being submitted to the RWQCB in accordance with SCR provision C8. It is also being distributed in accordance with SCR provision C9 for information.

I request your response by May 7, 2004. If you have any questions, please contact me at (415) 883-6386.

Sincerely,

Edward Keller, P.E.
BRAC Environmental Coordinator
Hamilton Army Airfield

Enclosure

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Hamilton Army Airfield, Novato, CA
April 2004

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Hamilton Army Airfield, Novato, CA
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SOURCE IDENTIFICATION REPORT FOR THE ARCHIVES SEARCH REPORT SITES 4, 18, AND 19

HAMILTON ARMY AIRFIELD

NOVATO, CALIFORNIA

TESTING RANGE

Prepared by:

US Army Corps of Engineers ®

Sacramento District
Environmental Design Section

Prepared for:

Department of the Army
Base Realignment and Closure

APRIL 2004

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Appendix A: Analytical Data Tables

Appendix B: Analytical Report Forms (on Compact Disc)

ACRONYMS

ASR	Archives Search Report
bgs	below ground surface
BRAC	Base Realignment and Closure
DoD	Department of Defense
DTSC	California State Department of Toxic Substances Control
FITB	Firing-in Target Butt
HAAF	Hamilton Army Airfield
mg/kg	milligrams per kilogram
PAHs	Polynuclear Aromatic Hydrocarbons
ROD/RAP	Record of Decision/Remedial Action Plan
RWQCB	California Regional Water Quality Control Board
USACE	U.S. Army Corps of Engineers

SOURCE IDENTIFICATION REPORT
ARCHIVES SEARCH REPORT SITES 4, 18, AND 19
HAMILTON ARMY AIRFIELD

1.0 INTRODUCTION

The former Hamilton Army Airfield (HAAF) has been owned and operated by various branches of the Department of Defense (DoD) from 1932 to September 30, 2003. The Army is responsible for environmental remediation at HAAF as the Department of Defense owner of the property at the time of closure under the Base Realignment and Closure Act (BRAC) of 1988. The Army prepared an Archive Search Report (ASR) that identified three former firing range areas that may have been contaminated. The Army is responsible for investigating these sites to identify the probability of contamination that would pose a risk to future receptors in the reuse of the property as a wetland restoration site. The results of this initial investigation are compiled in this report.

A field sampling investigation was performed in January 2004 at three ASR sites within HAAF in Novato, California (see Figure 1-1). The three sites are identified in the ASR as Site 4 (Testing Range), Site 18 (Skeet Range), and Site 19 (Firing-In-Butt [referred to in this document as the Firing-In Target Butt {FITB}]) (USACE 2001) and samples had not been collected at these sites previously. The site locations within HAAF are illustrated in Figure 1-2. The investigation was conducted in accordance with the *Work Plan, Miscellaneous Site Investigations, Hamilton Army Airfield* (USACE 2004), with the exceptions noted in this report. The source identification investigation was designed to collect the data necessary to determine if the soil at each of the sites is contaminated from past DoD activities and if further action is required. The decisions are based upon the agreements and action goals in the *Record of Decision/ Remedial Action Plan (ROD/RAP)* (Army, DTSC, RWQCB 2003).

This report presents a summary of the fieldwork, the results of the source identification investigation, and conclusions.

2.0 SAMPLING STRATEGY AND ASSOCIATED FIELD ACTIVITIES

2.1 Testing Range (ASR # 4) Sampling for Selected Metals

Sampling and analysis was conducted to determine if surface soil metals (antimony, arsenic, cadmium, chromium, copper, lead, nickel, and zinc) concentrations exceed the action goals, and if ammunition fragments are present. The selected metals are indicative of metals from ammunition. Samples were collected along the length of the Testing Range Area on the inboard side of the levee halfway between the levee top and bottom, as illustrated in Figure 2-1.

The Testing Range area was heavily overgrown with tall weeds (6-10 ft in height). Each sample area was cleared using a stainless steel trowel or spoon to scrape growth in a circle approximately 1 ft in diameter. Five samples were collected from 0 to 3 inches below ground surface (bgs) for metals analysis by Method 6010. Additionally, five samples were collected at the same depths for sieve analysis. All samples were collected in accordance with the work plan; however, each sample location was shifted approximately 20 feet east towards the levee to reach the vertical center of the levee wall.

2.2 Skeet Range (ASR # 18) Sampling for Selected Metals and Polynuclear Aromatic Hydrocarbons

Sampling and analysis was performed to determine if surface soil metals (antimony, arsenic, cadmium, chromium, copper, lead, nickel, and zinc) and polynuclear aromatic hydrocarbons (PAHs) concentrations exceed action goals, and if skeet and ammunition fragments are present. The selected metals are indicative of metals from ammunition and the PAHs are constituents of clay pigeons. Figure 2-2 illustrates the sample locations for both chemical analysis and sieving.

The Skeet Range area was heavily overgrown with weeds (1-6 ft tall). Each sample area was cleared using a stainless steel trowel or spoon to scrape growth in a circle approximately 1 ft in diameter. Nine samples were collected from 0 to 3 inches below ground surface (bgs) for metals analysis by Method 6010B and total PAH analysis by Method 8270C using selective ion monitoring (SIM). Additionally, five were collected from the same depths for sieve analysis. All samples were collected in accordance with the work plan; however, the location of sample SR-770 was moved away from a road.

2.3 Firing-In Target Butt (ASR # 19) Sampling for Selected Metals

Sampling and analysis was performed to determine if surface soil metals (antimony, arsenic, cadmium, chromium, copper, lead, nickel, and zinc) concentrations exceed action

goals and if ammunition fragments are present. The selected metals are indicative of metals from ammunition. Figure 2-3 illustrates the sample locations for both chemical analysis and sieving.

The Firing-In Target Butt area was heavily overgrown with weeds (1-10 ft in height). Each sample area was cleared using a stainless steel trowel or spoon to scrape growth in a circle approximately 1 ft in diameter. Five samples were collected from 0 to 3 inches below ground surface (bgs) for metals analysis by Method 6010B. Additionally, four were collected at the same depth for sieve analysis. All samples were collected in accordance with the work plan; however, small shifts were required to accommodate the terrain. The locations of samples FITB-732 and FITB-F-737 were shifted approximately 20 feet out of the water to the edge of a pond. The locations of samples FITB-F-734 and FITB-F-735 were shifted approximately 10 feet so that they were off of a gravel road.

3.0 RESULTS

Analytical results are listed in Appendix A by site. Laboratory data packages are included in Appendix B in electronic format. The compact disc containing this information is supplied at the end of this report.

3.1 Data Quality

The data were validated using the procedures specified in the Quality Assurance Project Plan section of the work plan. All data are considered usable to meet the project objectives with the exception of all antimony results. The analytical procedures used did not allow acceptable recovery of antimony in the soil samples; therefore, the presence or absence of antimony cannot be determined. The presence of any antimony above ambient concentrations due to range activities would be accompanied by the presence of other metals above ambient levels, most notably lead. Further investigation, if necessary, at these sites will include a different preparation method for the analysis of antimony so usable results will be available for assessing risk.

3.2 Testing Range (ASR # 4)

3.2.1 Chemical Analysis Results

Samples were analyzed for eight selected metals indicative of metals from ammunition. Data tables with all results are included in Appendix A. Table 3-1 lists results that are greater than the associated action goal. Analytical results and sample locations are presented in Figure 2-1.

Table 3-1. Testing Range Results Exceeding Action Goal

Sample Identification Number	Analyte	Concentration (mg/Kg)	Action Goal (mg/Kg)
HAAF-TR-747	Lead	318	46.7
HAAF-TR-748	Copper	227	68.1
	Lead	2230	46.7
HAAF-TR-749	Copper	71.2	68.1
	Lead	1090	46.7
HAAF-TR-750	Copper	758	68.1
	Lead	1170	46.7
HAAF-TR-751	Copper	136	68.1
	Lead	1390	46.7

3.2.2 Sieving Results

Samples were sieved for fragments of ammunition, pellets, and/or shards. The surface soil for each location was collected in three 4-ounce jars. The full volume of all three jars was sieved. Table 3-2 lists the results.

Table 3-2. Testing Range Sieving Results

Sample ID	Description	Number of Fragments Found	Size
TR-F-752	Shards (small, gray-black, possibly ceramic)	4	4-10 mm
TR-F-753	None	0	None
TR-F-754	Flattened pellet (possibly a piece of shot)	1	5 mm
TR-F-755	None	0	None
TR-F-756	Flattened pellet (possibly a piece of shot)	1	5 mm
	Shards (small, gray-black, possibly ceramic)	4	3-15 mm

3.3 Skeet Range (ASR # 18)

3.3.1 Chemical Analysis Results

Samples were analyzed for eight selected metals indicative of metals from ammunition and PAHs. Data tables with all results are included in Appendix A. Table 3-3 lists results that are greater than the associated action goal. All results and locations are presented in Figure 2-2.

Table 3-3. Skeet Range Results Exceeding Action Goal

Sample Identification Number	Analyte	Concentration (mg/Kg)	Action Goal (mg/Kg)
HAAF-SR-738	Lead	96.8	46.7
HAAF-SR-739	Total PAHs	12.45	4.022
HAAF-SR-741	Lead	101	46.7
	Total PAHs	1130	4.022
HAAF-SR-742	Cadmium	6.85	1.2
	Lead	123	46.7
	Total PAHs	21.6	4.022
HAAF-SR-766	Total PAHs	557	4.022
HAAF-SR-768	Lead	154	46.7

3.3.2 Sieving Results

Samples were sieved for fragments of ammunition, pellets, and/or shards. The surface soil for each location was collected in three 4-ounce jars. The full volume of all three jars was sieved. Table 3-4 lists the results.

Table 3-4. Skeet Range Sieving Results

Sample ID	Description	Number of Fragments Found	Size
SR-F-743	Shards (possibly ceramic)	6	5-10 mm
	Rounded pellets (possibly pieces of shot)	2	5 mm
SR-F-744	Rounded pellets (possibly pieces of shot)	2	5 mm
SR-F-745	Shards (possibly ceramic)	3	2-6 mm

Sample ID	Description	Number of Fragments Found	Size
SR-F-746	Shards (possibly ceramic)	1	5 x 8 mm
SR-F-767	Shards	3	5-10 mm

3.4 Firing-In Target Butt (ASR # 19)

3.4.1 Chemical Analysis Results

Samples were analyzed for eight selected metals indicative of metals from ammunition. Data tables with all results are included in Appendix A. No results were greater than the associated action goal. All results with sample locations are presented in Figure 2-3.

3.4.2 Sieving Results

Samples were sieved for fragments of ammunition, pellets, and/or shards. The surface soil for each location was collected in three 4-ounce jars. The full volume of all three jars was sieved. Table 3-5 lists the results.

Table 3-5. Firing-In Target Butt Sieving Results

Sample ID	Description	Number of Fragments Found	Size
FITB-F-734	Flattened pellets (possibly pieces of shot)	2	5 mm
	Shards (possibly ceramic)	3	2-6 mm
FITB-F-735	Shards (possibly ceramic)	1	5 mm
FITB-F-736	Rounded pellets (possibly pieces of shot)	2	5 mm
	Shards (possibly ceramic)	1	10x30 mm
FITB-F-737	None	0	None

4.0 CONCLUSIONS

Conclusions were based upon the decision rules in the Data Quality Objectives section of the work plan. Ammunition, fragments, and/or shards were found at all three sites, suggesting the historical use of these ranges for military and/or recreational activities; however, soil metals concentrations exceeded the action goals at only two of the three sites.

All four samples from the Testing Range (ASR #4) contained constituents that exceeded the action goal. These were limited to lead and copper. The presence of pellets and small shards at this site indicates that there is residual contamination from Testing Range activities.

Six of the nine samples from the Skeet Range (ASR #18) contained constituents that exceeded the action goal. Elevated lead, cadmium and Total PAH concentrations within the Skeet Range appear to be restricted to the center and western portion of the range. The presence of pellets and small shards at this site indicates that there is residual contamination from Skeet Range activities.

All metals concentrations in the surface soil at the Firing-In Target Butt (ASR #19) were below the action goals. Activities at the Firing-In Target Butt do not appear to have contaminated site soils. This may be due to the short timeframe of use and the removal of the FITB structure from the site in 1947.

5.0 REFERENCES

Army (U.S. Department of the Army), DTSC (California State Department of Toxic Substances Control), RWQCB (California Regional Water Quality Control Board) 2003. *Main Airfield Parcel Record of Decision/Remedial Action Plan, Hamilton Army Airfield*, Public Comment Final, August 2003.

USACE 2001. *Archives Search Report, Conclusions and Recommendations, Hamilton Army Airfield*, U.S. Department of Defense Program, Base Realignment and Closure, Ordnance, Ammunition and Explosives, Final, September 2001.

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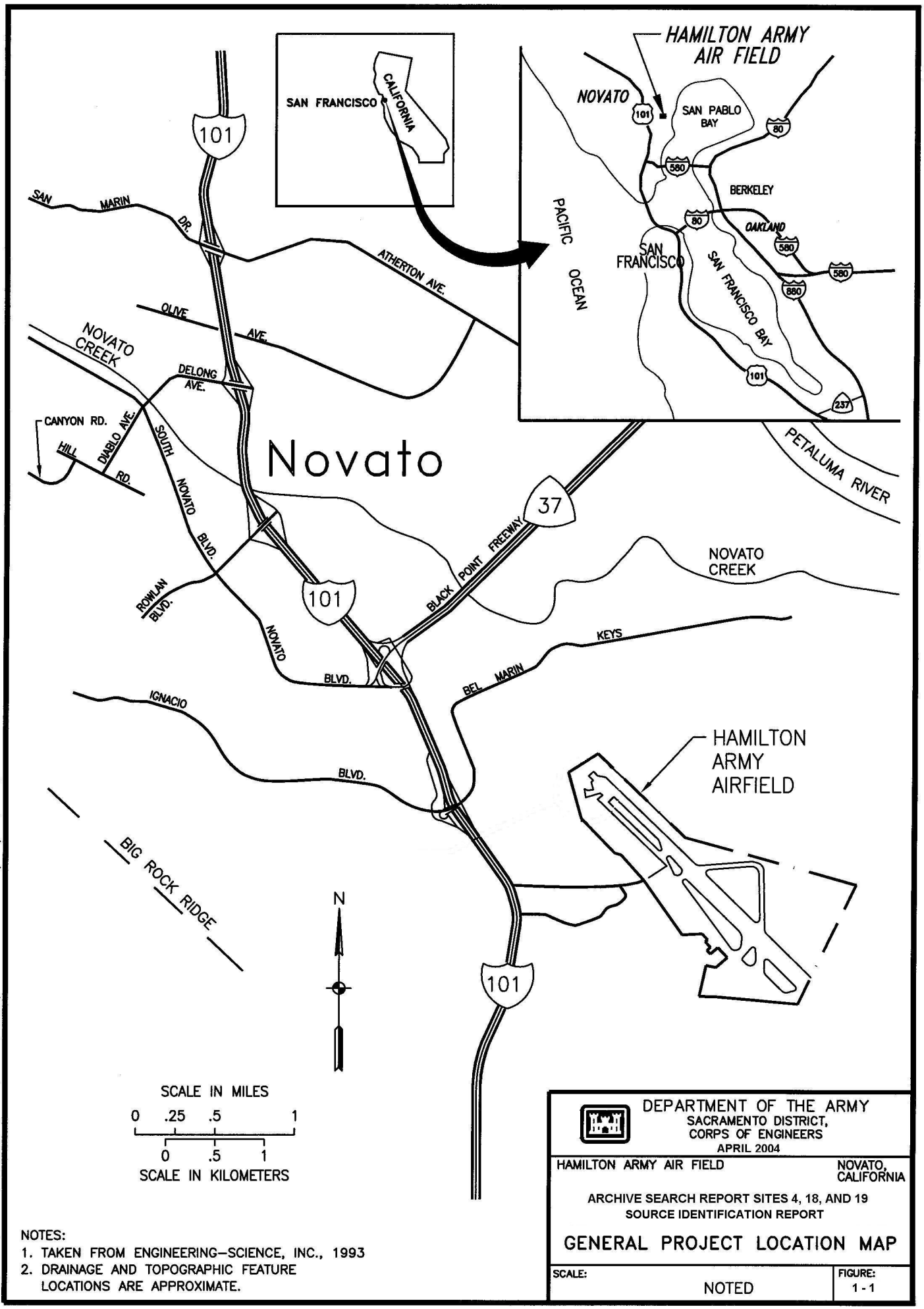
U.S. Environmental Protection Agency (EPA) 1996. *Test Methods for Evaluating Solid Waste Physical/Chemical Methods, Third Edition*, December 1996.

U.S. Fish and Wildlife Service Biological Opinion and amending letter, August 2003 and September 2003.

FIGURES



NOTES:
1. TAKEN FROM ENGINEERING–SCIENCE, INC., 1993
2. DRAINAGE AND TOPOGRAPHIC FEATURE LOCATIONS ARE APPROXIMATE.

DEPARTMENT OF THE ARMY
SACRAMENTO DISTRICT,
CORPS OF ENGINEERS
APRIL 2004

HAMILTON ARMY AIR FIELD — NOVATO, CALIFORNIA

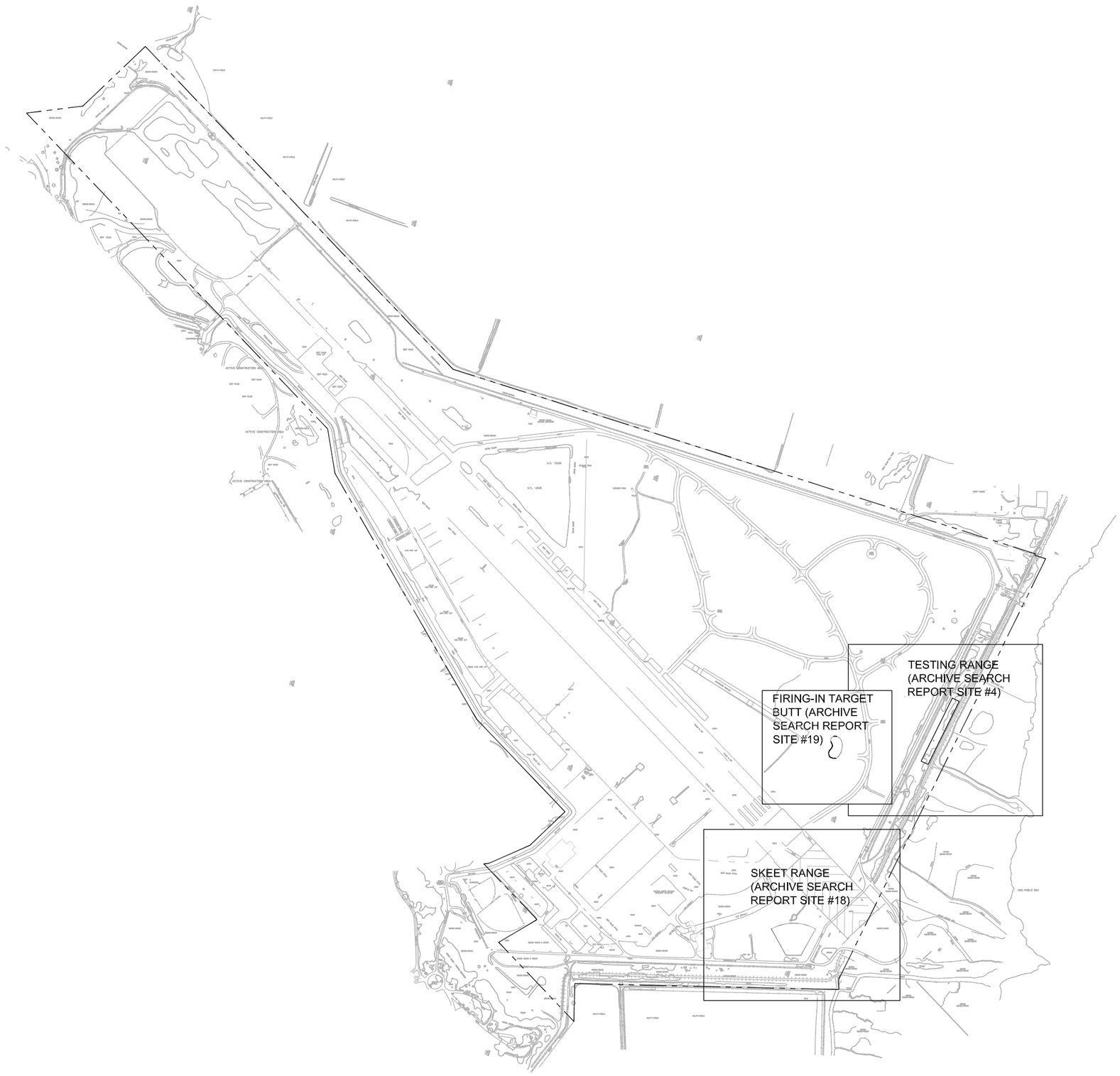
ARCHIVE SEARCH REPORT SITES 4, 18, AND 19
SOURCE IDENTIFICATION REPORT

GENERAL PROJECT LOCATION MAP

SCALE: NOTED

FIGURE: 1 - 1

C:\DATA\ACAD2000i\PROJECTS\K-EMERICK\HGSAke00.DWG, 01/21/03, 1:1,



LEGEND

ASSOCIATED FIGURE BOUNDARY

N

GRAPHIC SCALE

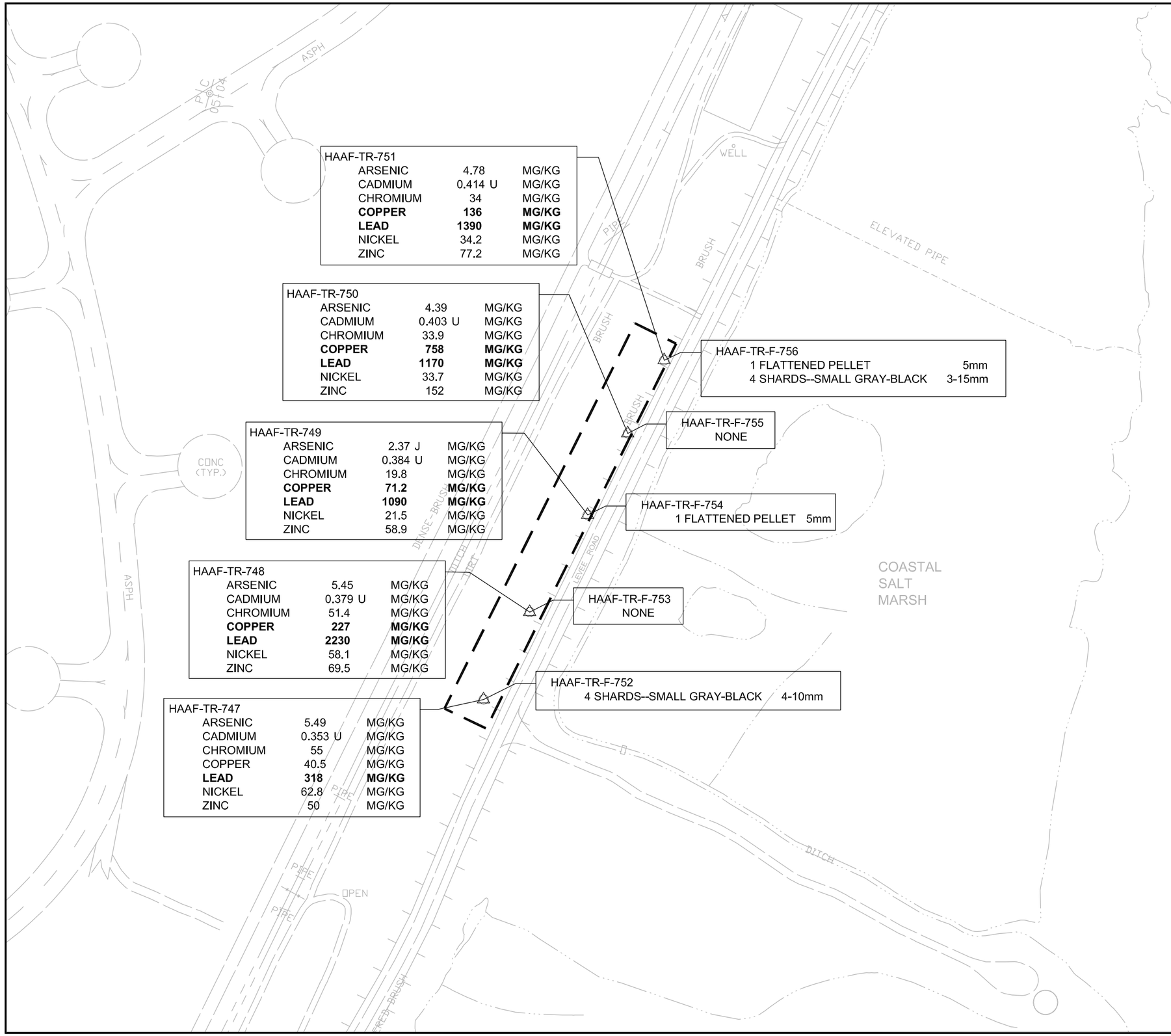
0 500' 1000' 2000' 3000'

U.S. ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

FIGURE 1-2

ARCHIVE SEARCH REPORT SITES 4, 18, 19 LOCATION MAP

BRAC PROPERTY
HAMILTON ARMY AIRFIELD



LEGEND

- TESTING RANGE BOUNDARY
- △ CHEMISTRY SAMPLE LOCATIONS
- ○ SOIL SIEVING SAMPLE LOCATIONS
- J ESTIMATED CONCENTRATION
- U CONSTITUENT NOT DETECTED
- BOLDED CONSTITUENTS EXCEED RESPECTIVE ACTION GOAL.

N

GRAPHIC SCALE

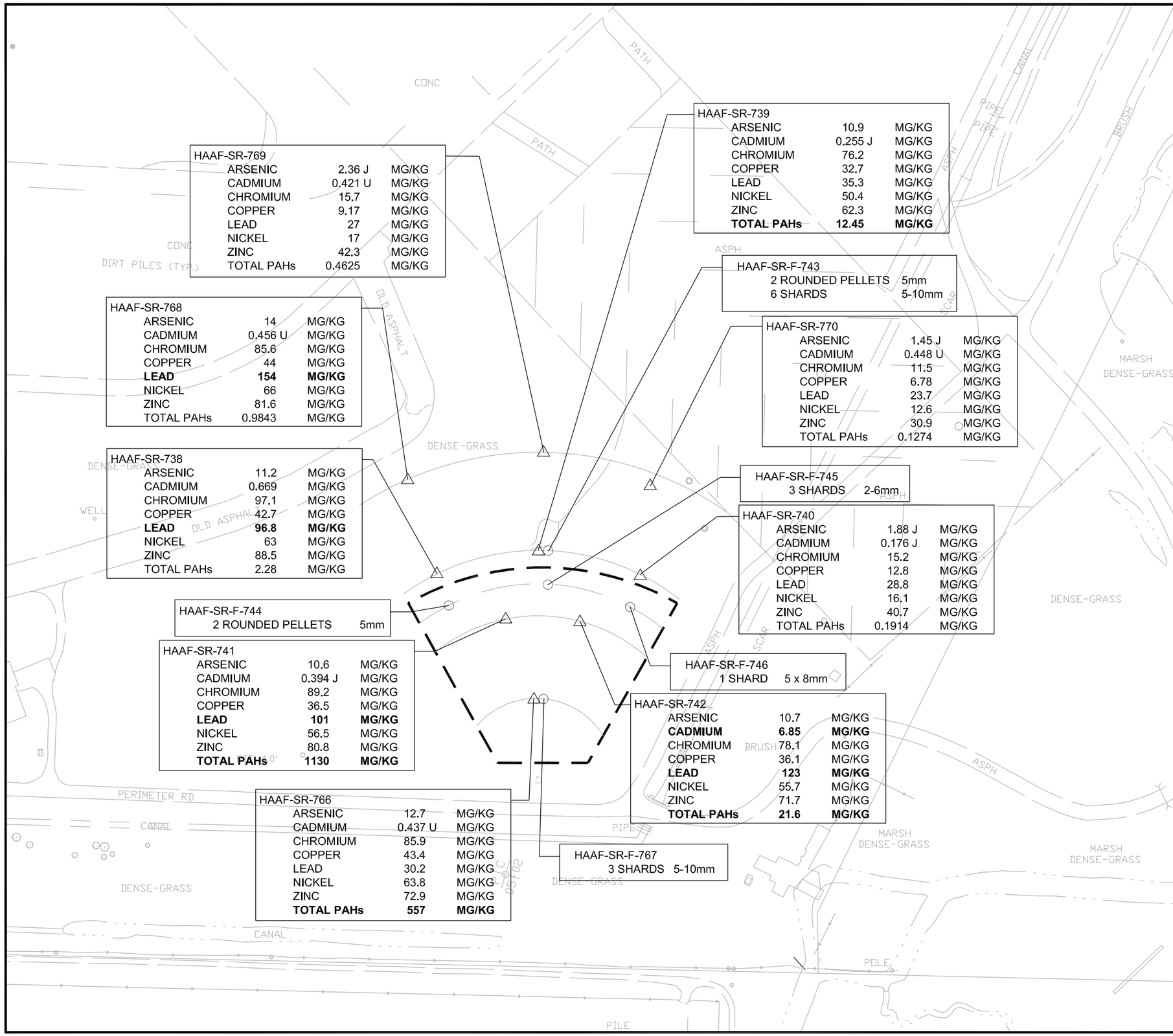
0 50' 150' 300' 450'

U.S. ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

FIGURE 2-1

TESTING RANGE (ARCHIVE SEARCH REPORT SITE #4) LOCATIONS AND RESULTS

BRAC PROPERTY
HAMILTON ARMY AIRFIELD



HAAF-SR-769

ARSENIC	2.36 J	MG/KG
CADMIUM	0.421 U	MG/KG
CHROMIUM	15.7	MG/KG
COPPER	9.17	MG/KG
LEAD	27	MG/KG
NICKEL	17	MG/KG
ZINC	42.3	MG/KG
TOTAL PAHs	0.4625	MG/KG

HAAF-SR-768

ARSENIC	14	MG/KG
CADMIUM	0.456 U	MG/KG
CHROMIUM	85.6	MG/KG
COPPER	44	MG/KG
LEAD	**154**	**MG/KG**
NICKEL	66	MG/KG
ZINC	81.6	MG/KG
TOTAL PAHs	0.9843	MG/KG

HAAF-SR-738

ARSENIC	11.2	MG/KG
CADMIUM	0.669	MG/KG
CHROMIUM	97.1	MG/KG
COPPER	42.7	MG/KG
LEAD	**96.8**	**MG/KG**
NICKEL	63	MG/KG
ZINC	88.5	MG/KG
TOTAL PAHs	2.28	MG/KG

HAAF-SR-739

ARSENIC	10.9	MG/KG
CADMIUM	0.255 J	MG/KG
CHROMIUM	76.2	MG/KG
COPPER	32.7	MG/KG
LEAD	35.3	MG/KG
NICKEL	50.4	MG/KG
ZINC	62.3	MG/KG
TOTAL PAHs	**12.45**	**MG/KG**

HAAF-SR-F-743

2 ROUNDED PELLETS	5mm
6 SHARDS	5-10mm

HAAF-SR-770

ARSENIC	1.45 J	MG/KG
CADMIUM	0.448 U	MG/KG
CHROMIUM	11.5	MG/KG
COPPER	6.78	MG/KG
LEAD	23.7	MG/KG
NICKEL	12.6	MG/KG
ZINC	30.9	MG/KG
TOTAL PAHs	0.1274	MG/KG

HAAF-SR-F-745

3 SHARDS	2-6mm

HAAF-SR-740

ARSENIC	1.88 J	MG/KG
CADMIUM	0.176 J	MG/KG
CHROMIUM	15.2	MG/KG
COPPER	12.8	MG/KG
LEAD	28.8	MG/KG
NICKEL	16.1	MG/KG
ZINC	40.7	MG/KG
TOTAL PAHs	0.1914	MG/KG

HAAF-SR-F-744

2 ROUNDED PELLETS	5mm

HAAF-SR-741

ARSENIC	10.6	MG/KG
CADMIUM	0.394 J	MG/KG
CHROMIUM	89.2	MG/KG
COPPER	36.5	MG/KG
LEAD	**101**	**MG/KG**
NICKEL	56.5	MG/KG
ZINC	80.8	MG/KG
TOTAL PAHs	**1130**	**MG/KG**

HAAF-SR-F-746

1 SHARD	5 x 8mm

HAAF-SR-742

ARSENIC	10.7	MG/KG
CADMIUM	**6.85**	**MG/KG**
CHROMIUM	78.1	MG/KG
COPPER	36.1	MG/KG
LEAD	**123**	**MG/KG**
NICKEL	55.7	MG/KG
ZINC	71.7	MG/KG
TOTAL PAHs	**21.6**	**MG/KG**

HAAF-SR-766

ARSENIC	12.7	MG/KG
CADMIUM	0.437 U	MG/KG
CHROMIUM	85.9	MG/KG
COPPER	43.4	MG/KG
LEAD	30.2	MG/KG
NICKEL	63.8	MG/KG
ZINC	72.9	MG/KG
TOTAL PAHs	**557**	**MG/KG**

HAAF-SR-F-767

3 SHARDS	5-10mm

LEGEND

	SKEET RANGE BOUNDARY
△	CHEMISTRY SAMPLE LOCATIONS
○	SOIL SIEVING SAMPLE LOCATIONS
J	ESTIMATED CONCENTRATION
U	CONSTITUENT NOT DETECTED

BOLDED CONSTITUENTS EXCEED RESPECTIVE ACTION GOAL.

N

GRAPHIC SCALE

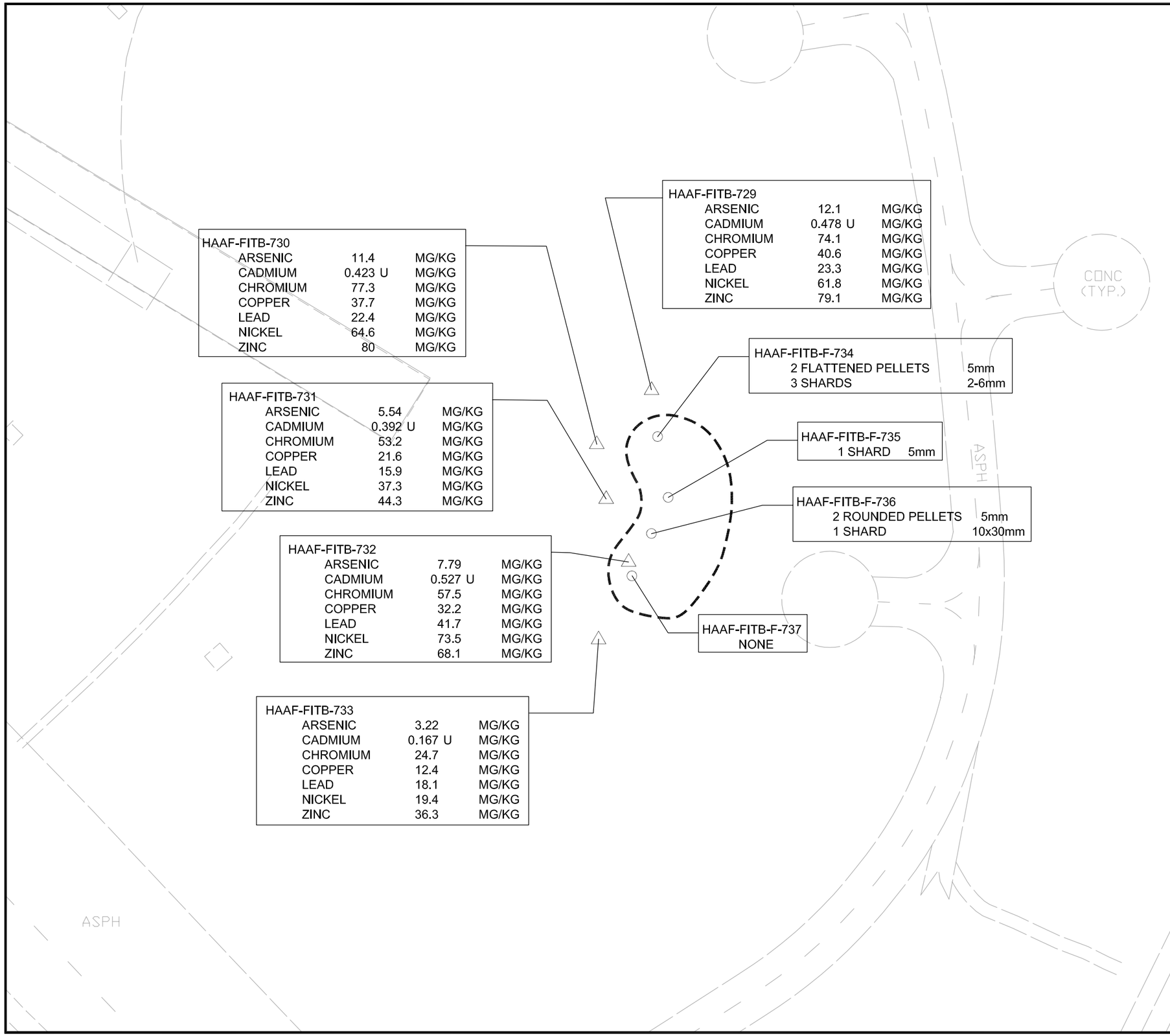
0 50' 150' 300' 450'

U.S. ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

FIGURE 2-2

SKEET RANGE (ARCHIVE SEARCH REPORT SITE #18) LOCATIONS AND RESULTS

BRAC PROPERTY
HAMILTON ARMY AIRFIELD



LEGEND

- FIRING-IN TARGET BUTT BOUNDARY
- △ CHEMISTRY SAMPLE LOCATIONS
- ○ SOIL SIEVING SAMPLE LOCATIONS
- J ESTIMATED CONCENTRATION
- U CONSTITUENT NOT DETECTED
- NO CONSTITUENTS EXCEED RESPECTIVE ACTION GOAL

U.S. ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

FIGURE 2-3

FIRING-IN TARGET BUTT (ARCHIVE SEARCH REPORT SITE #19) LOCATIONS AND RESULTS

BRAC PROPERTY
HAMILTON ARMY AIRFIELD

APPENDIX A

Table A-1:
Testing Range (Archive Search Report, Site #4)
Analytical Results, January 2004
Hamilton Army Airfield

	Sample #	HAAF-TR-747	HAAF-TR-748	HAAF-TR-749	HAAF-TR-750	HAAF-TR-751
Analyte	Method	Results are in mg/kg (dry weight)				
ANTIMONY	6010B	5.89 R	2.88 R	6.39 R	6.71 R	6.91 R
ARSENIC	6010B	5.49	5.45	2.36 J	4.39	4.78
CADMIUM	6010B	ND < 0.353	ND < 0.379	ND < 0.384	ND < 0.403	ND < 0.414
CHROMIUM	6010B	55	51.4	19.8	33.9	34
COPPER	6010B	40.5	**227**	**71.2**	**758**	**136**
LEAD	6010B	**318**	**2230**	**1090**	**1170**	**1390**
NICKEL	6010B	62.8	58.1	21.5	33.7	34.2
ZINC	6010B	50	69.5	58.9	152	77.2

ND < RL = Not detected above reporting limit

J = estimated value

R = rejected result; presence or absence of constituent not known

Bolded Values are detections that exceed Action Goal.

Table A-2:
Skeet Range (Archive Search Report, Site #18)
Analytical Results, January 2004
Hamilton Army Airfield

	Sample #	HAAF-SR-738	HAAF-SR-739	HAAF-SR-740	HAAF-SR-741	HAAF-SR-742
Analyte	Method	Results are in mg/kg (dry weight)				
Metals						
ANTIMONY	6010B	7.66 R	6.86 R	6.84 R	7.85 R	8.61 R
ARSENIC	6010B	11.2	10.9	1.88 J	10.6	10.7
CADMIUM	6010B	0.669	0.255 J	0.176 J	0.394 J	**6.85**
CHROMIUM	6010B	97.1	76.2	15.2	89.2	78.1
COPPER	6010B	42.7	32.7	12.8	36.5	36.1
LEAD	6010B	**96.8**	35.3	28.8	**101**	**123**
NICKEL	6010B	63	50.4	16.1	56.5	55.7
ZINC	6010B	88.5	62.3	40.7	80.8	71.7
Polynuclear Aromatic Hydrocarbons						
2-METHYLNAPHTHALENE	8270C, SIM	ND < 0.0077	0.0044 J	ND < 0.0068	0.63	0.017
ACENAPHTHENE	8270C, SIM	0.006 J	0.021	ND < 0.0068	2.4	0.055
ACENAPHTHYLENE	8270C, SIM	ND < 0.0077	0.0064 J	ND < 0.0068	ND < 0.031	ND < 0.0086
ANTHRACENE	8270C, SIM	0.032	0.045	ND < 0.0068	4.3	0.19
BENZO(A)ANTHRACENE	8270C, SIM	0.23	1.2	0.017	100	2.3
BENZO(A)PYRENE	8270C, SIM	0.23	1.7	0.017	140	2.5
BENZO(B)FLUORANTHENE	8270C, SIM	0.31	2	0.029	230	3.7
BENZO(G,H,I)PERYLENE	8270C, SIM	0.15	1.4	0.015	88	1.8
BENZO(K)FLUORANTHENE	8270C, SIM	0.14	0.63	0.0054 J	61	1.3
CHRYSENE	8270C, SIM	0.22	1.3	0.019	150	2.4
DIBENZ(A,H)ANTHRACENE	8270C, SIM	0.047	0.33	0.0092	22	0.59
FLUORANTHENE	8270C, SIM	0.31	1.1	0.026	110	2.1
FLUORENE	8270C, SIM	0.0051 J	0.011	ND < 0.0068	1.3	0.029
INDENO(1,2,3-CD)PYRENE	8270C, SIM	0.15	1.3	0.017	91	1.7
NAPHTHALENE	8270C, SIM	0.0054 J	0.013	0.0028 J	2.6	0.045
PHENANTHRENE	8270C, SIM	0.17 J	0.29 J	0.011 J	25 J	0.95 J
PYRENE	8270C, SIM	0.27	1.1	0.023	100	1.9
Total PAHs	8270C, SIM	2.28	**12.45**	0.1914	**1130**	**21.6**

ND < RL = Not detected above reporting limit
J = estimated value SIM = Selective Ion Monitoring
R = rejected result; presence or absence not known
Bolded values are greater than the action goal.

Table A-2:
Skeet Range (Archive Search Report, Site #18)
Analytical Results, January 2004
Hamilton Army Airfield

	Sample #	HAAF-SR-766	HAAF-SR-768	HAAF-SR-769	HAAF-SR-770
Analyte	Method	Results are in mg/kg (dry weight)			
Metals					
ANTIMONY	6010B	7.29 R	7.6 R	7.02 R	7.47 R
ARSENIC	6010B	12.7	14	2.36 J	1.45 J
CADMIUM	6010B	ND < 0.437	ND < 0.456	ND < 0.421	ND < 0.448
CHROMIUM	6010B	85.9	85.6	15.7	11.5
COPPER	6010B	43.4	44	9.17	6.78 J
LEAD	6010B	30.2	**154**	27	23.7
NICKEL	6010B	63.8	66	17	12.6
ZINC	6010B	72.9	81.6	42.3	30.9
Polynuclear Aromatic Hydrocarbons					
2-METHYLNAPHTHALENE	8270C, SIM	0.35	0.0083	ND < 0.007	ND < 0.0075
ACENAPHTHENE	8270C, SIM	1.3	0.018	0.0029 J	ND < 0.0075
ACENAPHTHYLENE	8270C, SIM	0.0069 J	ND < 0.0076	ND < 0.007	ND < 0.0075
ANTHRACENE	8270C, SIM	2	0.015	0.0032 J	ND < 0.0075
BENZO(A)ANTHRACENE	8270C, SIM	57	0.088	0.035	0.011
BENZO(A)PYRENE	8270C, SIM	70	0.08	0.033	0.011
BENZO(B)FLUORANTHENE	8270C, SIM	97	0.11	0.049	0.023
BENZO(G,H,I)PERYLENE	8270C, SIM	49	0.052	0.026	0.01
BENZO(K)FLUORANTHENE	8270C, SIM	43	0.046	0.024	0.0061 J
CHRYSENE	8270C, SIM	63	0.075	0.044	0.014
DIBENZ(A,H)ANTHRACENE	8270C, SIM	16	0.017	0.012	0.0073 J
FLUORANTHENE	8270C, SIM	48	0.15	0.086	0.017
FLUORENE	8270C, SIM	0.77	0.014	ND < 0.007	ND < 0.0075
INDENO(1,2,3-CD)PYRENE	8270C, SIM	51	0.056	0.028	0.012
NAPHTHALENE	8270C, SIM	1.3	0.015	0.0034 J	ND < 0.0075
PHENANTHRENE	8270C, SIM	12	0.12	0.045	ND < 0.0075
PYRENE	8270C, SIM	45	0.12	0.071	0.016
Total PAHs	8270C, SIM	**557**	0.9843	0.4625	0.1274

ND < RL = Not detected above reporting limit
J = estimated value SIM = Selective Ion Monitoring
R = rejected result; presence or absence not known
Bolded values are greater than the action goal.

Table A-3:
Firing-in Target Butt (Archive Search Report, Site #19)
Analytical Results, January 2004
Hamilton Army Airfield

	Sample #	HAAF-FITB-729	HAAF-FITB-730	HAAF-FITB-731	HAAF-FITB-732	HAAF-FITB-733
Analyte	Method	Results are in mg/kg (dry weight)				
ANTIMONY	6010B	7.96 R	7.05 R	6.53 R	7.7 R	6.85 R
ARSENIC	6010B	12.1	11.4	5.54	7.79	3.22 J
CADMIUM	6010B	ND < 0.478	ND < 0.423	ND < 0.392	0.527	0.167 J
CHROMIUM	6010B	74.1	77.3	53.2	57.5	24.7
COPPER	6010B	40.6	37.7	21.6	32.2	12.4
LEAD	6010B	23.3	22.4	15.9	41.7	18.1
NICKEL	6010B	61.8	64.6	37.3	73.5	19.4
ZINC	6010B	79.1	80	44.3	68.1	36.3

ND < RL= Not detected above reporting limit

J = estimated value

R = rejected result; presence or absence of constituent not known

No results are greater than the action goal.

APPENDIX B

Analytical Report Forms (on Compact Disc only)

EMAX Laboratories, Inc.

SDG Login Review Sheet

Due Date: 2/7/04

Date: 1/23/04

RMB 1/23/04

Client Code: US_0401_

Client: USACE

Project: HAAF, Misc.S.I.

EMAX PM: Richard

SDG: 04A096

Send Report To: Attn: John Yaremchuk

Company: USACE

Address: 1325 J Street
Sacramento CA 95814
NA

Lwks ID	Control #	Sample ID	Matrix	Coll Date	Time	Date Rcvd	Lwks Method	Analysis
EM86279	A096-01	HAAF-FITB-731	SOIL	1/15/04	9:27	1/17/04	MTLS	Metals by ICP
EM86280	A096-02	HAAF-FITB-732	SOIL	1/15/04	9:39	1/17/04	MTLS	Metals by ICP
EM86281	A096-03	HAAF-FITB-733	SOIL	1/15/04	9:45	1/17/04	MTLS	Metals by ICP
EM86282	A096-04	HAAF-FITB-D-504	SOIL	1/15/04	9:39	1/17/04	MTLS	Metals by ICP
EM86283	A096-05	HAAF-REV6-723	SOIL	1/12/04	12:30	1/17/04	HGS	Mercury
EM86284	A096-06	HAAF-REV6-724	SOIL	1/12/04	12:35	1/17/04	HGS	Mercury
EM86285	A096-07	HAAF-REV6-725	SOIL	1/12/04	12:40	1/17/04	HGS	Mercury
EM86286	A096-08	HAAF-REV6-D-503	SOIL	1/12/04	12:35	1/17/04	HGS	Mercury
EM86287	A096-09	HAAF-REV7-726	SOIL	1/12/04	13:00	1/17/04	HGS	Mercury
EM86288	A096-10	HAAF-REV7-727	SOIL	1/12/04	13:03	1/17/04	HGS	Mercury
EM86289	A096-11	HAAF-REV7-728	SOIL	1/12/04	13:05	1/17/04	HGS	Mercury
EM86290	A096-12	HAAF-SPF-701	SOIL	1/15/04	11:52	1/17/04	PESTS	Pesticides Organochlorine
EM86291	A096-13	HAAF-SPF-702	SOIL	1/15/04	11:53	1/17/04	PESTS	Pesticides Organochlorine
EM86292	A096-14	HAAF-SPF-703	SOIL	1/15/04	11:55	1/17/04	PESTS	Pesticides Organochlorine
EM86293	A096-15	HAAF-SPF-704	SOIL	1/15/04	11:58	1/17/04	PESTS	Pesticides Organochlorine
EM86299	A096-15M	HAAF-SPF-704MS	SOIL	1/15/04	11:58	1/17/04	PESTS	Pesticides Organochlorine
EM86300	A096-15S	HAAF-SPF-704MSD	SOIL	1/15/04	11:58	1/17/04	PESTS	Pesticides Organochlorine
EM86294	A096-16	HAAF-SR-738	SOIL	1/13/04	16:02	1/17/04	MTLS	Metals by ICP
	A096-16	HAAF-SR-738	SOIL	1/13/04	16:02	1/17/04	SVSIMS	Semivolatile Organics SIM
EM86295	A096-17	HAAF-SR-739	SOIL	1/13/04	15:46	1/17/04	MTLS	Metals by ICP
	A096-17	HAAF-SR-739	SOIL	1/13/04	15:46	1/17/04	SVSIMS	Semivolatile Organics SIM
EM86296	A096-18	HAAF-SR-740	SOIL	1/13/04	15:36	1/17/04	MTLS	Metals by ICP
	A096-18	HAAF-SR-740	SOIL	1/13/04	15:36	1/17/04	SVSIMS	Semivolatile Organics SIM
EM86301	A096-18M	HAAF-SR-740MS	SOIL	1/13/04	15:36	1/17/04	MTLS	Metals by ICP
	A096-18M	HAAF-SR-740MS	SOIL	1/13/04	15:36	1/17/04	SVSIMS	Semivolatile Organics SIM
EM86302	A096-18S	HAAF-SR-740MSD	SOIL	1/13/04	15:36	1/17/04	MTLS	Metals by ICP
	A096-18S	HAAF-SR-740MSD	SOIL	1/13/04	15:36	1/17/04	SVSIMS	Semivolatile Organics SIM
EM86297	A096-19	HAAF-SR-741	SOIL	1/13/04	16:45	1/17/04	MTLS	Metals by ICP
	A096-19	HAAF-SR-741	SOIL	1/13/04	16:45	1/17/04	SVSIMS	Semivolatile Organics SIM
EM86298	A096-20	HAAF-SR-742	SOIL	1/13/04	16:48	1/17/04	MTLS	Metals by ICP
	A096-20	HAAF-SR-742	SOIL	1/13/04	16:48	1/17/04	SVSIMS	Semivolatile Organics SIM

USEPA Contract Laboratory Program
Generic Chain of Custody

US_0401_

C3

Reference Case
Client No:
SDG No: 04A096

L

Date Shipped:	1/16/2004
Carrier Name:	FedEx
Airbill:	840946764285
Shipped to:	EMAX Laboratories 1835 W. 205th Street Torrance CA 90501 (310) 618-8889

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
Teresa M Rodgers	1/16/04	[illegible]	1-17-04 1115
2			
3			
4			

Sampler Signature:

For Lab Use Only
Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

	SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		FOR LAB USE ONLY Sample Condition On Receipt
1	HAAF-FITB-731	Soil/Sediment	/G	SW 6010B (21)	(1)	HAAF-FITB-731	S: 1/15/2004	9:27	
2	HAAF-FITB-732	Soil/Sediment	/G	SW 6010B (21)	(1)	HAAF-FITB-732	S: 1/15/2004	9:39	
3	HAAF-FITB-733	Soil/Sediment	/G	SW 6010B (21)	(1)	HAAF-FITB-733	S: 1/15/2004	9:45	
4	HAAF-FITB-D-504	Soil/Sediment	/G	SW 6010B (21)	(1)	HAAF-FITB-D-504	S: 1/15/2004	9:39	
5	HAAF-REV6-723	Soil/Sediment	/G	SW 7471 (21)	(1)	HAAF-REV6-723	S: 1/12/2004	12:30	
6	HAAF-REV6-724	Soil/Sediment	/G	SW 7471 (21)	(1)	HAAF-REV6-724	S: 1/12/2004	12:35	
7	HAAF-REV6-725	Soil/Sediment	/G	SW 7471 (21)	(1)	HAAF-REV6-725	S: 1/12/2004	12:40	
8	HAAF-REV6-D-503	Soil/Sediment	/G	SW 7471 (21)	(1)	HAAF-REV6-D-503	S: 1/12/2004	12:35	
9	HAAF-REV7-726	Soil/Sediment	/G	SW 7471 (21)	(1)	HAAF-REV7-726	S: 1/12/2004	13:00	
10	HAAF-REV7-727	Soil/Sediment	/G	SW 7471 (21)	(1)	HAAF-REV7-727	S: 1/12/2004	13:03	

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt:	Chain of Custody Seal Number:
	HAAF-SPF-704, HAAF-SR-740		3.4°C	

Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Custody Seal Intact? ✓	Shipment Iced? ✓

8081A = DDD,DDE,DDT, 8270C SIM = PAH, SW 6010B = Sb, As, Cd, Cr, Cu, Pb, Ni, Zn, SW 7471 = Hg

TR Number: Non-EPA-360645727-011604-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

LABORATORY COPY

USEPA Contract Laboratory Program
Generic Chain of Custody

C3

Reference Case
Client No:
SDG No: 04A096

L

Date Shipped:	1/16/2004
Carrier Name:	FedEx
Airbill:	840946764285
Shipped to:	EMAX Laboratories 1835 W. 205th Street Torrance CA 90501 (310) 618-8889

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
Teresa M Rodgers	1/16/04	[signature]	1-17-04 1115
2			
3			
4			

Sampler Signature:

For Lab Use Only
Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

	SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		FOR LAB USE ONLY Sample Condition On Receipt
11	HAAF-REV7-728	Soil/Sediment	/G	SW 7471 (21)	(1)	HAAF-REV7-728	S: 1/12/2004	13:05	
12	HAAF-SPF-701	Soil/Sediment/ Teresa Rodgers	/G	8081A (21)	111 (1)	HAAF-SPF-701	S: 1/15/2004	11:52	
13	HAAF-SPF-702	Soil/Sediment/ Teresa Rodgers	/G	8081A (21)	111 (1)	HAAF-SPF-702	S: 1/15/2004	11:53	
14	HAAF-SPF-703	Soil/Sediment/ Teresa Rodgers	/G	8081A (21)	111 (1)	HAAF-SPF-703	S: 1/15/2004	11:55	
15	HAAF-SPF-704	Soil/Sediment	/G	8081A (21)	111 (1)	HAAF-SPF-704	S: 1/15/2004	11:58	
16	HAAF-SR-738	Soil/Sediment	/G	8270C SIM (21), SW 6010B (21)	(Not preserved) (2)	HAAF-SR-738	S: 1/13/2004	16:02	
17	HAAF-SR-739	Soil/Sediment	/G	8270C SIM (21), SW 6010B (21)	(2)	HAAF-SR-739	S: 1/13/2004	15:46	
18	HAAF-SR-740	Soil/Sediment	/G	8270C SIM (21), SW 6010B (21)	(2)	HAAF-SR-740	S: 1/13/2004	15:36	
19	HAAF-SR-741	Soil/Sediment	/G	8270C SIM (21), SW 6010B (21)	(Not preserved) (2)	HAAF-SR-741	S: 1/13/2004	16:45	
20	HAAF-SR-742	Soil/Sediment	/G	8270C SIM (21), SW 6010B (21)	(2)	HAAF-SR-742	S: 1/13/2004	16:48	

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: HAAF-SPF-704, HAAF-SR-740	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt: 3.4°C	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G		Custody Seal Intact? Y / Shipment Iced? Y

8081A = DDD,DDE,DDT, 8270C SIM = PAH, SW 6010B = Sb, As, Cd, Cr, Cu, Pb, Ni, Zn, SW 7471 = Hg

TR Number: Non-EPA-360645727-011604-0001

LABORATORY COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

SAMPLE RECEIPT FORM 1

Type of Delivery	Delivered By/Airbill	ECN	04A096
☐ EMAX Courier		Recepient	Jon Luna
☐ Client Delivery		Date	1-17-04
☑ Third Party FEDEX	840946764285	Time	1115

COC Inspection

☑ Client Name	☐ Sampler Name	☑ Sampling Date/Time/Location
☑ Address	☐ Courier Signature/Date/Time	☑ Analysis Required
☑ Client PM/FC	☐ TAT	☑ Matrix
☑ Tel #/Fax #	☑ Sample ID	☐ Preservative (if any)
Safety Issues ☑ None	☐ High Concentrations expected	☐ Superfund Site Samples
Comments: ☐ Rad Screening Required		

Packaging Inspection

Container	☑ Cooler	☐ Box	☐	☐
Condition	☐ Custody Seal	☐ Intact	☐ Damaged	☐
Packaging	☑ Bubble Pack	☐ Styrofoam	☑ Sufficient	☑ Plastic bag
Temperatures	☑ Cooler 1 3.4°C	☑ Cooler 2 ____	☐ Cooler 3 ____	☐ Cooler 4 ____
	☐ Cooler 5 ____	☐ Cooler 6 ____	☐ Cooler 7 ____	☐ Cooler 8 ____
	☐ Cooler 9 ____	☐ Cooler 10 ____	☐ Cooler 11 ____	☐ Cooler 12 ____

Comments:

LSCID	Client ID	Discrepancy	Corrective Action

LSCID : Lab Sample Container ID

REVIEWS

Sample Labeling [signature] Date 01-17-04

SRF [signature] Date 1-21-04

PM [signature] Date 1/21/04

EMAX Laboratories, Inc.

SDG Login Review Sheet

Due Date: 2/7/04

Date: 1/23/04

Client Code: US_0401_

Client: USACE

Project: HAAF, Misc.S.I.

EMAX PM: Richard

SDG: 04A097

OK
RMB
1/23/04

Send Report To: Attn: John Yaremchuk

Company: USACE

Address: 1325 J Street
Sacramento CA 95814
NA

Lwks ID	Control #	Sample ID	Matrix	Coll Date	Time	Date Rcvd	Lwks Method	Analysis
EM86315	A097-01	HAAF-B35-760-V	SOIL	1/13/04	10:21	1/17/04	PESTS	Pesticides Organochlorine
EM86316	A097-02	HAAF-B35-761-V	SOIL	1/13/04	10:22	1/17/04	PESTS	Pesticides Organochlorine
EM86317	A097-03	HAAF-B35-762-V	SOIL	1/13/04	9:58	1/17/04	PESTS	Pesticides Organochlorine
EM86318	A097-04	HAAF-B41PD-680	SOIL	1/13/04	9:05	1/17/04	PESTS	Pesticides Organochlorine
EM86319	A097-05	HAAF-B41PD-681-8ft	SOIL	1/13/04	9:20	1/17/04	PESTS	Pesticides Organochlorine
EM86320	A097-06	HAAF-B41PD-682-8ft	SOIL	1/13/04	9:10	1/17/04	PESTS	Pesticides Organochlorine
EM86321	A097-07	HAAF-B41PD-683-8ft	SOIL	1/13/04	9:11	1/17/04	PESTS	Pesticides Organochlorine
EM86322	A097-08	HAAF-B41PD-684-8.5ft	SOIL	1/13/04	9:24	1/17/04	PESTS	Pesticides Organochlorine
EM86323	A097-09	HAAF-FITB-729	SOIL	1/15/04	9:10	1/17/04	MTLS	Metals by ICP
EM86324	A097-10	HAAF-FITB-730	SOIL	1/15/04	9:14	1/17/04	MTLS	Metals by ICP
EM86325	A097-11	HAAF-SR-766	SOIL	1/13/04	16:57	1/17/04	MTLS	Metals by ICP
	A097-11	HAAF-SR-766	SOIL	1/13/04	16:57	1/17/04	SVSIMS	Semivolatile Organics SIM
EM86326	A097-12	HAAF-SR-768	SOIL	1/13/04	15:05	1/17/04	MTLS	Metals by ICP
	A097-12	HAAF-SR-768	SOIL	1/13/04	15:05	1/17/04	SVSIMS	Semivolatile Organics SIM
EM86327	A097-13	HAAF-SR-769	SOIL	1/13/04	15:11	1/17/04	MTLS	Metals by ICP
	A097-13	HAAF-SR-769	SOIL	1/13/04	15:11	1/17/04	SVSIMS	Semivolatile Organics SIM
EM86328	A097-14	HAAF-SR-770	SOIL	1/13/04	15:29	1/17/04	MTLS	Metals by ICP
	A097-14	HAAF-SR-770	SOIL	1/13/04	15:29	1/17/04	SVSIMS	Semivolatile Organics SIM
EM86329	A097-15	HAAF-SRW-757-V	SOIL	1/14/04	17:47	1/17/04	PESTS	Pesticides Organochlorine
EM86330	A097-16	HAAF-SRW-758-V	SOIL	1/14/04	17:26	1/17/04	PESTS	Pesticides Organochlorine
EM86331	A097-17	HAAF-SRW-759-V	SOIL	1/14/04	17:10	1/17/04	PESTS	Pesticides Organochlorine
EM86332	A097-18	HAAF-TR-747	SOIL	1/15/04	11:03	1/17/04	MTLS	Metals by ICP
EM86333	A097-19	HAAF-TR-748	SOIL	1/15/04	11:11	1/17/04	MTLS	Metals by ICP
EM86334	A097-20	HAAF-TR-749	SOIL	1/15/04	11:22	1/17/04	MTLS	Metals by ICP
EM86335	A097-21	HAAF-TR-750	SOIL	1/15/04	11:28	1/17/04	MTLS	Metals by ICP
EM86336	A097-22	HAAF-TR-751	SOIL	1/15/04	11:34	1/17/04	MTLS	Metals by ICP
EM86337	A097-23	HAAF-TR-D-505	SOIL	1/15/04	11:11	1/17/04	MTLS	Metals by ICP
EM86338	A097-24	HAAF-UPDD-763-V	SOIL	1/14/04	16:22	1/17/04	PESTS	Pesticides Organochlorine
EM86339	A097-25	HAAF-UPDD-764-V	SOIL	1/14/04	14:35	1/17/04	PESTS	Pesticides Organochlorine
EM86340	A097-26	HAAF-UPDD-765-V	SOIL	1/14/04	15:23	1/17/04	PESTS	Pesticides Organochlorine
EM86341	A097-27	HAAF-UPDD-D-506-V	SOIL	1/14/04	0:00	1/17/04	PESTS	Pesticides Organochlorine
EM86342	A097-28	HAAF-IDW-1-W	WATER	1/16/04	14:00	1/17/04	MTLW	Metals by ICP
	A097-28	HAAF-IDW-1-W	WATER	1/16/04	14:00	1/17/04	PESTW	Pesticides Organochlorine
	A097-28	HAAF-IDW-1-W	WATER	1/16/04	14:00	1/17/04	SVSIMW	Semivolatile Organics SIM

USEPA Contract Laboratory Program
Generic Chain of Custody

C2/ US_0401_

Reference Case
Client No:
SDG No: 04A097

L

Date Shipped:	1/16/2004
Carrier Name:	FedEx
Airbill:	840946764285
Shipped to:	EMAX Laboratories 1835 W. 205th Street Torrance CA 90501 (310) 618-8889

Chain of Custody Record

Relinquished By	(Date / Time)	Sampler Signature: Received By	(Date / Time)
1 Teresa M Rodgers	1/16/04	[signature]	1-17-04 1115
2			
3			
4			

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

	SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		FOR LAB USE ONLY Sample Condition On Receipt
1	HAAF-B35-760-V	Soil/Sediment	/G	8081A (21)	111 (1)	HAAF-B35-760-V	S: 1/13/2004	10:21	
2	HAAF-B35-761-V	Soil/Sediment	/G	8081A (21)	111 (1)	HAAF-B35-761-V	S: 1/13/2004	10:22	
3	HAAF-B35-762-V	Soil/Sediment	/G	8081A (21)	111 (1)	HAAF-B35-762-V	S: 1/13/2004	9:58	
4	HAAF-B41PD-680	Soil/Sediment	/G	8081A (21)	111 (1)	HAAF-B41PD-680	S: 1/13/2004	9:05	
5	HAAF-B41PD-681-8ft	Soil/Sediment	/G	8081A (21)	111 (1)	HAAF-B41PD-681-8ft	S: 1/13/2004	9:20	
6	HAAF-B41PD-682-8ft	Soil/Sediment	/G	8081A (21)	111 (1)	HAAF-B41PD-682-8ft	S: 1/13/2004	9:10	
7	HAAF-B41PD-683-8ft	Soil/Sediment	/G	8081A (21)	100 (1)	HAAF-B41PD-683-8ft	S: 1/13/2004	9:11	
8	HAAF-B41PD-684-8.5ft	Soil/Sediment	/G	8081A (21)	101 (1)	HAAF-B41PD-684-8.5ft	S: 1/13/2004	9:24	
9	HAAF-FITB-729	Soil/Sediment	/G	SW 6010B (21)	(1)	HAAF-FITB-729	S: 1/15/2004	9:10	
10	HAAF-FITB-730	Soil/Sediment	/G	SW 6010B (21)	(1)	HAAF-FITB-730	S: 1/15/2004	9:14	

Shipment for Case Complete?N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt:	Chain of Custody Seal Number:
	HAAF-SPF-704, HAAF-SR-740		3.4°C	

Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Custody Seal Intact? Y	Shipment Iced? Y

8081A = DDD,DDE,DDT, 8270C SIM = PAH, SW 6010B = Sb, As, Cd, Cr, Cu, Pb, Ni, Zn, SW 7471 = Hg

TR Number: Non-EPA-360645727-011604-0001

LABORATORY COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

USEPA Contract Laboratory Program
Generic Chain of Custody

C2

Reference Case
Client No:
SDG No: 04A097

L

Date Shipped: 1/16/2004	**Chain of Custody Record**	Sampler Signature:	**For Lab Use Only**
Carrier Name: FedEx	Relinquished By (Date / Time)	Received By (Date / Time)	Lab Contract No:
Airbill: 840946764285	Teresa M Lodgers 1/16/04	1-17-04 1115	Unit Price:
Shipped to: EMAX Laboratories, 1835 W. 205th Street, Torrance CA 90501, (310) 618-8889	2		Transfer To:
	3		Lab Contract No:
	4		Unit Price:

	SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		FOR LAB USE ONLY Sample Condition On Receipt
11	HAAF-SR-766	Soil/Sediment	/G	8270C SIM (21), SW 6010B (21)	(2)	HAAF-SR-766	S: 1/13/2004	16:57	
12	HAAF-SR-768	Soil/Sediment	/G	8270C SIM (21), SW 6010B (21)	(2)	HAAF-SR-768	S: 1/13/2004	15:05	
13	HAAF-SR-769	Soil/Sediment	/G	8270C SIM (21), SW 6010B (21)	(2)	HAAF-SR-769	S: 1/13/2004	15:11	
14	HAAF-SR-770	Soil/Sediment	/G	8270C SIM (21), SW 6010B (21)	(Not preserved) (2)	HAAF-SR-770	S: 1/13/2004	15:29	
15	HAAF-SRW-757-V	Soil/Sediment	/G	8081A (21)	111 (1)	HAAF-SRW-757-V	S: 1/14/2004	17:47	
16	HAAF-SRW-758-V	Soil/Sediment	/G	8081A (21)	111 (1)	HAAF-SRW-758-V	S: 1/14/2004	17:26	
17	HAAF-SRW-759-V	Soil/Sediment	/G	8081A (21)	111 (1)	HAAF-SRW-759-V	S: 1/14/2004	17:10	
18	HAAF-TR-747	Soil/Sediment	/G	SW 6010B (21)	(1)	HAAF-TR-747	S: 1/15/2004	11:03	
19	HAAF-TR-748	Soil/Sediment	/G	SW 6010B (21)	(1)	HAAF-TR-748	S: 1/15/2004	11:11	
20	HAAF-TR-749	Soil/Sediment	/G	SW 6010B (21)	(1)	HAAF-TR-749	S: 1/15/2004	11:22	

Shipment for Case Complete?N	Sample(s) to be used for laboratory QC: HAAF-SPF-704, HAAF-SR-740	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt: 3.4	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G		Custody Seal Intact? Y / Shipment Iced? Y

8081A = DDD,DDE,DDT, 8270C SIM = PAH, SW 6010B = Sb, As, Cd, Cr, Cu, Pb, Ni, Zn, SW 7471 = Hg

TR Number: Non-EPA-360645727-011604-0001

LABORATORY COPY

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Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

USEPA Contract Laboratory Program
Generic Chain of Custody

C2

Reference Case
Client No:
SDG No: 04A097

L

Date Shipped:	1/16/2004
Carrier Name:	FedEx
Airbill:	840946764285
Shipped to:	EMAX Laboratories 1835 W. 205th Street Torrance CA 90501 (310) 618-8889

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1 Teresa M Rodgers	1/16/04	[illegible]	1-17-04 1115
2			
3			
4			

Sampler Signature:

For Lab Use Only
Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

	SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		FOR LAB USE ONLY Sample Condition On Receipt
21	HAAF-TR-750	Soil/Sediment	/G	SW 6010B (21)	(1)	HAAF-TR-750	S: 1/15/2004	11:28	
22	HAAF-TR-751	Soil/Sediment	/G	SW 6010B (21)	(1)	HAAF-TR-751	S: 1/15/2004	11:34	
23	HAAF-TR-D-505	Soil/Sediment	/G	SW 6010B (21)	(1)	HAAF-TR-D-505	S: 1/15/2004	11:11	
24	HAAF-UPDD-763-V	Soil/Sediment	/G	8081A (21)	111 (1)	HAAF-UPDD-763-V	1/14/04	16:22	
25	HAAF-UPDD-764-V	Soil/Sediment	/G	8081A (21)	111 (1)	HAAF-UPDD-764-V	S: 1/14/2004	14:35	
26	HAAF-UPDD-765-V	Soil/Sediment	/G	8081A (21)	111 (1)	HAAF-UPDD-765-V	S: 1/14/2004	15:23	
27	HAAF-UPDD-D-506-V	Soil/Sediment	/G	8081A (21)	111 (1)	HAAF-UPDD-D-506-V	1/14		
28	HAAF-IDW-1-W				(3)	water			

PAHs by 8270C 1/16/04
Metals by 6010B 1400.
DDTs by 8081A

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: HAAF-SPF-704, HAAF-SR-740	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt: 3.4	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G		Custody Seal Intact? ✓ Shipment Iced? ✓

8081A = DDD,DDE,DDT, 8270C SIM = PAH, SW 6010B = Sb, As, Cd, Cr, Cu, Pb, Ni, Zn, SW 7471 = Hg

TR Number: Non-EPA-360645727-011604-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

LABORATORY COPY

SAMPLE RECEIPT FORM 1

Type of Delivery	Delivered By/Airbill	ECN	04A097
☐ EMAX Courier		Recepient	Jon Luna
☐ Client Delivery		Date	1-17-04
☑ Third Party FEDEX	840946764285	Time	1115

COC Inspection

☑ Client Name	☐ Sampler Name	☑ Sampling Date/Time/Location
☑ Address	☐ Courier Signature/Date/Time	☑ Analysis Required
☑ Client PM/FC	☐ TAT	☑ Matrix
☑ Tel #/Fax #	☑ Sample ID	☑ Preservative (if any)
Safety Issues ☑ None	☐ High Concentrations expected	☐ Superfund Site Samples
Comments: ☐ Rad Screening Required		

Packaging Inspection

Container	☑ Cooler	☐ Box	☐	☐
Condition	☐ Custody Seal	☐ Intact	☐ Damaged	☐
Packaging	☑ Bubble Pack	☐ Styrofoam	☑ Sufficient	☑ Plastic bag
Temperatures	☑ Cooler 3.4°C	☑ Cooler 2 ____	☐ Cooler 3 ____	☐ Cooler 4 ____
	☐ Cooler 5 ____	☐ Cooler 6 ____	☐ Cooler 7 ____	☐ Cooler 8 ____
	☐ Cooler 9 ____	☐ Cooler 10 ____	☐ Cooler 11 ____	☐ Cooler 12 ____

Comments:

LSCID	Client ID	Discrepancy	Corrective Action
A097-24	HAAF-VOOO-763-V	DATE = TIME ON LABEL READS 1/14/04, 1622, (NO DATE = TIME ON COC)	Use date & time from label
-27	HAAF-VOOO-506-V		
-28	HAAF-10W-1-W	DATE = TIME ON LABEL READS 1/16/04, 1400, ALL ANALYSIS ARE REQ'STD ON EACH CONTAINER (WATER)	

LSCID : Lab Sample Container ID

REVIEWS

Sample Labeling [signature] Date 01-17-04

SRF [signature] Date 1/21/04

PM [signature] Date 1/21/04

SW 3550B/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client	: USACE	Date Collected:	01/13/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
Batch No.	: 04A096	Date Extracted:	01/23/04 11:30
Sample ID:	HAAF-SR-738	Date Analyzed:	02/02/04 18:21
Lab Samp ID:	A096-16	Dilution Factor:	1
Lab File ID:	RBH009	Matrix :	SOIL
Ext Btch ID:	SVA023S	% Moisture :	34.7
Calib. Ref.:	RAH183	Instrument ID :	T-O41

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
ACENAPHTHENE	.006J	.0077	.0031
ACENAPHTHYLENE	ND	.0077	.0031
ANTHRACENE	.032	.0077	.0031
BENZO(A)ANTHRACENE	.23	.0077	.0031
BENZO(A)PYRENE	.23	.0077	.0031
BENZO(B)FLUORANTHENE	.31	.0077	.0031
BENZO(K)FLUORANTHENE	.14	.0077	.0031
BENZO(G,H,I)PERYLENE	.15	.0077	.0031
CHRYSENE	.22	.0077	.0031
DIBENZO(A,H)ANTHRACENE	.047	.0077	.0031
FLUORANTHENE	.31	.0077	.0031
FLUORENE	.0051J	.0077	.0031
INDENO(1,2,3-CD)PYRENE	.15	.0077	.0031
NAPHTHALENE	.0054J	.0077	.0031
PHENANTHRENE	.17	.0077	.0031
PYRENE	.27	.0077	.0031
2-METHYLNAPHTHALENE	ND	.0077	.0031

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	71	50-130

RL: Reporting Limit

SW 3550B/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client	: USACE	Date Collected:	01/13/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
Batch No.	: 04A096	Date Extracted:	01/23/04 11:30
Sample ID:	HAAF-SR-739	Date Analyzed:	02/02/04 18:56
Lab Samp ID:	A096-17	Dilution Factor:	1
Lab File ID:	RBH010	Matrix :	SOIL
Ext Btch ID:	SVA023S	% Moisture :	27.1
Calib. Ref.:	RAH183	Instrument ID :	T-O41

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
ACENAPHTHENE	.021	.0069	.0027
ACENAPHTHYLENE	.0064J	.0069	.0027
ANTHRACENE	.045	.0069	.0027
BENZO(A)ANTHRACENE	1.2	.0069	.0027
BENZO(A)PYRENE	1.7	.0069	.0027
BENZO(B)FLUORANTHENE	2.4E	.0069	.0027
BENZO(K)FLUORANTHENE	.63	.0069	.0027
BENZO(G,H,I)PERYLENE	1.4	.0069	.0027
CHRYSENE	1.3	.0069	.0027
DIBENZO(A,H)ANTHRACENE	.33	.0069	.0027
FLUORANTHENE	1.1	.0069	.0027
FLUORENE	.011	.0069	.0027
INDENO(1,2,3-CD)PYRENE	1.3	.0069	.0027
NAPHTHALENE	.013	.0069	.0027
PHENANTHRENE	.29	.0069	.0027
PYRENE	1.1	.0069	.0027
2-METHYLNAPHTHALENE	.0044J	.0069	.0027

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	75	50-130

RL: Reporting Limit
E : Exceeded Calibration Range

SW 3550B/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client	: USACE	Date Collected:	01/13/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
Batch No.	: 04A096	Date Extracted:	01/23/04 11:30
Sample ID:	HAAF-SR-740	Date Analyzed:	02/02/04 22:16
Lab Samp ID:	A096-18	Dilution Factor:	1
Lab File ID:	RBH013	Matrix :	SOIL
Ext Btch ID:	SVA023S	% Moisture :	26.9
Calib. Ref.:	RAH183	Instrument ID :	T-O41

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
ACENAPHTHENE	ND	.0068	.0027
ACENAPHTHYLENE	ND	.0068	.0027
ANTHRACENE	ND	.0068	.0027
BENZO(A)ANTHRACENE	.017	.0068	.0027
BENZO(A)PYRENE	.017	.0068	.0027
BENZO(B)FLUORANTHENE	.029	.0068	.0027
BENZO(K)FLUORANTHENE	.0054J	.0068	.0027
BENZO(G,H,I)PERYLENE	.015	.0068	.0027
CHRYSENE	.019	.0068	.0027
DIBENZO(A,H)ANTHRACENE	.0092	.0068	.0027
FLUORANTHENE	.026	.0068	.0027
FLUORENE	ND	.0068	.0027
INDENO(1,2,3-CD)PYRENE	.017	.0068	.0027
NAPHTHALENE	.0028J	.0068	.0027
PHENANTHRENE	.011	.0068	.0027
PYRENE	.023	.0068	.0027
2-METHYLNAPHTHALENE	ND	.0068	.0027

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	81	50-130

RL: Reporting Limit

SW 3550B/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client	: USACE	Date Collected:	01/13/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
Batch No.	: 04A096	Date Extracted:	01/23/04 11:30
Sample ID:	HAAF-SR-741	Date Analyzed:	02/04/04 00:25
Lab Samp ID:	A096-19	Dilution Factor:	4
Lab File ID:	RBH041	Matrix :	SOIL
Ext Btch ID:	SVA023S	% Moisture :	36.3
Calib. Ref.:	RAH183	Instrument ID :	T-O41

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
ACENAPHTHENE	2.4	.031	.013
ACENAPHTHYLENE	ND	.031	.013
ANTHRACENE	4.3	.031	.013
BENZO(A)ANTHRACENE	69E	.031	.013
BENZO(A)PYRENE	82E	.031	.013
BENZO(B)FLUORANTHENE	100E	.031	.013
BENZO(K)FLUORANTHENE	27E	.031	.013
BENZO(G,H,I)PERYLENE	65E	.031	.013
CHRYSENE	43E	.031	.013
DIBENZO(A,H)ANTHRACENE	23E	.031	.013
FLUORANTHENE	52E	.031	.013
FLUORENE	1.3	.031	.013
INDENO(1,2,3-CD)PYRENE	79E	.031	.013
NAPHTHALENE	2.6	.031	.013
PHENANTHRENE	20E	.031	.013
PYRENE	48E	.031	.013
2-METHYLNAPHTHALENE	.63	.031	.013

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	96	50-130

RL: Reporting Limit
E : Exceeded Calibration Range

SW 3550B/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client	: USACE	Date Collected:	01/13/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
Batch No.	: 04A096	Date Extracted:	01/23/04 11:30
Sample ID:	HAAF-SR-742	Date Analyzed:	02/02/04 22:51
Lab Samp ID:	A096-20	Dilution Factor:	1
Lab File ID:	RBH014	Matrix :	SOIL
Ext Btch ID:	SVA023S	% Moisture :	41.9
Calib. Ref.:	RAH183	Instrument ID :	T-O41

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
ACENAPHTHENE	.055	.0086	.0034
ACENAPHTHYLENE	ND	.0086	.0034
ANTHRACENE	.19	.0086	.0034
BENZO(A)ANTHRACENE	2.3	.0086	.0034
BENZO(A)PYRENE	2.6E	.0086	.0034
BENZO(B)FLUORANTHENE	3.5E	.0086	.0034
BENZO(K)FLUORANTHENE	1.3	.0086	.0034
BENZO(G,H,I)PERYLENE	1.8	.0086	.0034
CHRYSENE	2.5E	.0086	.0034
DIBENZO(A,H)ANTHRACENE	.59	.0086	.0034
FLUORANTHENE	2.1	.0086	.0034
FLUORENE	.029	.0086	.0034
INDENO(1,2,3-CD)PYRENE	1.7	.0086	.0034
NAPHTHALENE	.045	.0086	.0034
PHENANTHRENE	.95	.0086	.0034
PYRENE	1.9	.0086	.0034
2-METHYLNAPHTHALENE	.017	.0086	.0034

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	91	50-130

RL: Reporting Limit
E : Exceeded Calibration Range

SW 3550B/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client	: USACE	Date Collected:	01/13/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
Batch No.	: 04A096	Date Extracted:	01/23/04 11:30
Sample ID:	HAAF-SR-739DL	Date Analyzed:	02/02/04 21:42
Lab Samp ID:	A096-17T	Dilution Factor:	2
Lab File ID:	RBH012	Matrix :	SOIL
Ext Btch ID:	SVA023S	% Moisture :	27.1
Calib. Ref.:	RAH183	Instrument ID :	T-O41

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
ACENAPHTHENE	.015	.014	.0055
ACENAPHTHYLENE	.0056J	.014	.0055
ANTHRACENE	.039	.014	.0055
BENZO(A)ANTHRACENE	.96	.014	.0055
BENZO(A)PYRENE	1.5	.014	.0055
BENZO(B)FLUORANTHENE	2	.014	.0055
BENZO(K)FLUORANTHENE	.54	.014	.0055
BENZO(G,H,I)PERYLENE	1.2	.014	.0055
CHRYSENE	1.1	.014	.0055
DIBENZO(A,H)ANTHRACENE	.27	.014	.0055
FLUORANTHENE	1	.014	.0055
FLUORENE	.0089J	.014	.0055
INDENO(1,2,3-CD)PYRENE	1.1	.014	.0055
NAPHTHALENE	.011J	.014	.0055
PHENANTHRENE	.25	.014	.0055
PYRENE	1.0	.014	.0055
2-METHYLNAPHTHALENE	ND	.014	.0055

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	68	50-130

RL: Reporting Limit

SW 3550B/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client	: USACE	Date Collected:	01/13/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
Batch No.	: 04A096	Date Extracted:	01/23/04 11:30
Sample ID:	HAAF-SR-742DL	Date Analyzed:	02/02/04 23:26
Lab Samp ID:	A096-20T	Dilution Factor:	2
Lab File ID:	RBH015	Matrix :	SOIL
Ext Btch ID:	SVA023S	% Moisture :	41.9
Calib. Ref.:	RAH183	Instrument ID :	T-O41

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
ACENAPHTHENE	.058	.017	.0069
ACENAPHTHYLENE	ND	.017	.0069
ANTHRACENE	.18	.017	.0069
BENZO(A)ANTHRACENE	2.2	.017	.0069
BENZO(A)PYRENE	2.5	.017	.0069
BENZO(B)FLUORANTHENE	3.7	.017	.0069
BENZO(K)FLUORANTHENE	.82	.017	.0069
BENZO(G,H,I)PERYLENE	1.6	.017	.0069
CHRYSENE	2.4	.017	.0069
DIBENZO(A,H)ANTHRACENE	.52	.017	.0069
FLUORANTHENE	2.1	.017	.0069
FLUORENE	.028	.017	.0069
INDENO(1,2,3-CD)PYRENE	1.6	.017	.0069
NAPHTHALENE	.041	.017	.0069
PHENANTHRENE	.9	.017	.0069
PYRENE	2	.017	.0069
2-METHYLNAPHTHALENE	.015J	.017	.0069

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	88	50-130

RL: Reporting Limit

SW 3550B/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client	: USACE	Date Collected:	01/13/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
Batch No.	: 04A096	Date Extracted:	01/23/04 11:30
Sample ID:	HAAF-SR-741DL	Date Analyzed:	02/06/04 20:44
Lab Samp ID:	A096-19I	Dilution Factor:	150
Lab File ID:	RBH076	Matrix :	SOIL
Ext Btch ID:	SVA023S	% Moisture :	36.3
Calib. Ref.:	RAH183	Instrument ID :	T-O41

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
ACENAPHTHENE	3.8	1.2	.47
ACENAPHTHYLENE	ND	1.2	.47
ANTHRACENE	4.2	1.2	.47
BENZO(A)ANTHRACENE	100	1.2	.47
BENZO(A)PYRENE	140	1.2	.47
BENZO(B)FLUORANTHENE	230	1.2	.47
BENZO(K)FLUORANTHENE	61	1.2	.47
BENZO(G,H,I)PERYLENE	88	1.2	.47
CHRYSENE	150	1.2	.47
DIBENZO(A,H)ANTHRACENE	22	1.2	.47
FLUORANTHENE	110	1.2	.47
FLUORENE	1.4	1.2	.47
INDENO(1,2,3-CD)PYRENE	91	1.2	.47
NAPHTHALENE	3.2	1.2	.47
PHENANTHRENE	25	1.2	.47
PYRENE	100	1.2	.47
2-METHYLNAPHTHALENE	.65J	1.2	.47

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	DO	50-130

RL: Reporting Limit
DO: Diluted out.

SW 3550B/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client	: USACE	Date Collected:	NA
Project	: HAAF, MISC.S.I.	Date Received:	01/23/04
Batch No.	: 04A096	Date Extracted:	01/23/04 11:30
Sample ID:	MBLK1S	Date Analyzed:	01/30/04 16:16
Lab Samp ID:	SVA023SB	Dilution Factor:	1
Lab File ID:	RAH261	Matrix :	SOIL
Ext Btch ID:	SVA023S	% Moisture :	NA
Calib. Ref.:	RAH183	Instrument ID :	T-O41

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
ACENAPHTHENE	ND	.005	.002
ACENAPHTHYLENE	ND	.005	.002
ANTHRACENE	ND	.005	.002
BENZO(A)ANTHRACENE	ND	.005	.002
BENZO(A)PYRENE	ND	.005	.002
BENZO(B)FLUORANTHENE	ND	.005	.002
BENZO(K)FLUORANTHENE	ND	.005	.002
BENZO(G,H,I)PERYLENE	ND	.005	.002
CHRYSENE	ND	.005	.002
DIBENZO(A,H)ANTHRACENE	ND	.005	.002
FLUORANTHENE	ND	.005	.002
FLUORENE	ND	.005	.002
INDENO(1,2,3-CD)PYRENE	ND	.005	.002
NAPHTHALENE	ND	.005	.002
PHENANTHRENE	ND	.005	.002
PYRENE	ND	.005	.002
2-METHYLNAPHTHALENE	ND	.005	.002

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	86	50-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
BATCH NO.: 04A096
METHOD: SW 3550B/8270C SIM

MATRIX: SOIL % MOISTURE: NA
DILUTION FACTOR: 1 1
SAMPLE ID: MBLK1S
LAB SAMP ID: SVA023SB SVA023SL
LAB FILE ID: RAH261 RAH262
DATE EXTRACTED: 01/23/0411:30 01/23/0411:30 DATE COLLECTED: NA
DATE ANALYZED: 01/30/0416:16 01/30/0416:51 DATE RECEIVED: 01/23/04
PREP. BATCH: SVA023S SVA023S
CALIB. REF: RAH183 RAH183

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT (%)
Acenaphthene	ND	.666	.493	74	40-130
Acenaphthylene	ND	.666	.556	83	40-130
Anthracene	ND	.666	.493	74	50-130
Benzo(a)anthracene	ND	.666	.508	76	50-130
Benzo(a)pyrene	ND	.666	.567	85	50-130
Benzo(b)fluoranthene	ND	.666	.562	84	50-130
Benzo(k)fluoranthene	ND	.666	.613	92	50-130
Benzo(g,h,i)perylene	ND	.666	.553	83	50-130
Chrysene	ND	.666	.55	83	50-130
Dibenzo(a,h)anthracene	ND	.666	.529	79	50-130
Fluoranthene	ND	.666	.51	77	50-130
Fluorene	ND	.666	.514	77	50-130
Indeno(1,2,3-cd)pyrene	ND	.666	.512	77	50-130
Naphthalene	ND	.666	.491	74	40-130
Phenanthrene	ND	.666	.557	84	50-130
Pyrene	ND	.666	.507	76	40-130
2-Methylnaphthalene	ND	.666	.5	75	40-130

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT (%)
Terphenyl-d14	.833	.708	85	50-130

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	01/15/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO.	: 04A096	Date Extracted:	01/26/04 09:15
Sample ID:	HAAF-FITB-731	Date Analyzed:	02/02/04 12:24
Lab Samp ID:	A096-01	Dilution Factor:	1
Lab File ID:	I73A015025	Matrix :	SOIL
Ext Btch ID:	IPA047S	% Moisture :	23.4
Calib. Ref.:	I73A015015	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	6.53	2.22
Arsenic	6.1	3.92	.522
Cadmium	.223J	.392	.131
Chromium	144	6.53	.287
Copper	27.6	6.53	.131
Lead	294	13.1	.313
Nickel	46.3	6.53	.352
Zinc	52.6	6.53	.248

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	01/15/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO.	: 04A096	Date Extracted:	01/26/04 09:15
Sample ID:	HAAF-FITB-732	Date Analyzed:	02/02/04 12:52
Lab Samp ID:	A096-02	Dilution Factor:	1
Lab File ID:	I73A015029	Matrix :	SOIL
Ext Btch ID:	IPA047S	% Moisture :	35.1
Calib. Ref.:	I73A015027	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	7.7	2.62
Arsenic	7.79	4.62	.616
Cadmium	.527	.462	.154
Chromium	57.5	7.7	.339
Copper	32.2	7.7	.154
Lead	41.7	15.4	.37
Nickel	73.5	7.7	.416
Zinc	68.1	7.7	.293

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	01/15/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO.	: 04A096	Date Extracted:	01/26/04 09:15
Sample ID:	HAAF-FITB-733	Date Analyzed:	02/02/04 12:58
Lab Samp ID:	A096-03	Dilution Factor:	1
Lab File ID:	I73A015030	Matrix :	SOIL
Ext Btch ID:	IPA047S	% Moisture :	27.0
Calib. Ref.:	I73A015027	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	6.85	2.33
Arsenic	3.22J	4.11	.548
Cadmium	.167J	.411	.137
Chromium	24.7	6.85	.301
Copper	12.4	6.85	.137
Lead	18.1	13.7	.329
Nickel	19.4	6.85	.37
Zinc	36.3	6.85	.26

METHOD 3050B/6010B
METALS BY ICP

Client :	USACE	Date Collected:	01/15/04
Project :	HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO. :	04A096	Date Extracted:	01/26/04 09:15
Sample ID:	HAAF-FITB-D-504	Date Analyzed:	02/02/04 13:04
Lab Samp ID:	A096-04	Dilution Factor:	1
Lab File ID:	I73A015031	Matrix :	SOIL
Ext Btch ID:	IPA047S	% Moisture :	31.9
Calib. Ref.:	I73A015027	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	7.34	2.5
Arsenic	7.54	4.41	.587
Cadmium	.64	.441	.147
Chromium	61.8	7.34	.323
Copper	34.6	7.34	.147
Lead	38	14.7	.352
Nickel	81	7.34	.396
Zinc	73.8	7.34	.279

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	01/13/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO.	: 04A096	Date Extracted:	01/26/04 09:15
Sample ID:	HAAF-SR-738	Date Analyzed:	02/02/04 13:10
Lab Samp ID:	A096-16	Dilution Factor:	1
Lab File ID:	I73A015032	Matrix :	SOIL
Ext Btch ID:	IPA047S	% Moisture :	34.7
Calib. Ref.:	I73A015027	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	7.66	2.6
Arsenic	11.2	4.59	.613
Cadmium	.669	.459	.153
Chromium	97.1	7.66	.337
Copper	42.7	7.66	.153
Lead	96.8	15.3	.368
Nickel	63	7.66	.413
Zinc	88.5	7.66	.291

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	01/13/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO.	: 04A096	Date Extracted:	01/26/04 09:15
Sample ID:	HAAF-SR-739	Date Analyzed:	02/02/04 13:17
Lab Samp ID:	A096-17	Dilution Factor:	1
Lab File ID:	I73A015033	Matrix :	SOIL
Ext Btch ID:	IPA047S	% Moisture :	27.1
Calib. Ref.:	I73A015027	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	6.86	2.33
Arsenic	10.9	4.12	.549
Cadmium	.255J	.412	.137
Chromium	76.2	6.86	.302
Copper	32.7	6.86	.137
Lead	35.3	13.7	.329
Nickel	50.4	6.86	.37
Zinc	62.3	6.86	.261

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	01/13/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO.	: 04A096	Date Extracted:	01/26/04 09:15
Sample ID:	HAAF-SR-740	Date Analyzed:	02/02/04 13:23
Lab Samp ID:	A096-18	Dilution Factor:	1
Lab File ID:	I73A015034	Matrix :	SOIL
Ext Btch ID:	IPA047S	% Moisture :	26.9
Calib. Ref.:	I73A015027	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	6.84	2.33
Arsenic	1.88J	4.1	.547
Cadmium	.176J	.41	.137
Chromium	15.2	6.84	.301
Copper	12.8	6.84	.137
Lead	28.8	13.7	.328
Nickel	16.1	6.84	.369
Zinc	40.7	6.84	.26

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	01/13/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO.	: 04A096	Date Extracted:	01/26/04 09:15
Sample ID:	HAAF-SR-741	Date Analyzed:	02/02/04 13:29
Lab Samp ID:	A096-19	Dilution Factor:	1
Lab File ID:	I73A015035	Matrix :	SOIL
Ext Btch ID:	IPA047S	% Moisture :	36.3
Calib. Ref.:	I73A015027	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	7.85	2.67
Arsenic	10.6	4.71	.628
Cadmium	.394J	.471	.157
Chromium	89.2	7.85	.345
Copper	36.5	7.85	.157
Lead	101	15.7	.377
Nickel	56.5	7.85	.424
Zinc	80.8	7.85	.298

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	01/13/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO.	: 04A096	Date Extracted:	01/26/04 09:15
Sample ID:	HAAF-SR-742	Date Analyzed:	02/02/04 13:35
Lab Samp ID:	A096-20	Dilution Factor:	1
Lab File ID:	I73A015036	Matrix :	SOIL
Ext Btch ID:	IPA047S	% Moisture :	41.9
Calib. Ref.:	I73A015027	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	8.61	2.93
Arsenic	10.7	5.16	.688
Cadmium	6.85	.516	.172
Chromium	78.1	8.61	.379
Copper	36.1	8.61	.172
Lead	123	17.2	.413
Nickel	55.7	8.61	.465
Zinc	71.7	8.61	.327

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	01/15/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO.	: 04A096	Date Extracted:	02/02/04 09:00
Sample ID:	HAAF-FITB-731	Date Analyzed:	02/06/04 11:05
Lab Samp ID:	A096-01R	Dilution Factor:	1
Lab File ID:	I73B016025	Matrix :	SOIL
Ext Btch ID:	IPB002S	% Moisture :	23.4
Calib. Ref.:	I73B016015	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	6.53	2.22
Arsenic	5.54	3.92	.522
Cadmium	ND	.392	.131
Chromium	53.2	6.53	.287
Copper	21.6	6.53	.131
Lead	15.9	13.1	.313
Nickel	37.3	6.53	.352
Zinc	44.3	6.53	.248

METHOD 3050B/6010B
METALS BY ICP

Client :	USACE	Date Collected:	01/15/04
Project :	HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO. :	04A096	Date Extracted:	01/26/04 09:15
Sample ID:	HAAF-FITB-731DL	Date Analyzed:	02/02/04 12:30
Lab Samp ID:	A096-01T	Dilution Factor:	5
Lab File ID:	I73A015026	Matrix :	SOIL
Ext Btch ID:	IPA047S	% Moisture :	23.4
Calib. Ref.:	I73A015015	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	32.6	11.1
Arsenic	7.45J	19.6	2.61
Cadmium	ND	1.96	.653
Chromium	153	32.6	1.44
Copper	26.6J	32.6	.653
Lead	319	65.3	1.57
Nickel	50.6	32.6	1.76
Zinc	61.4	32.6	1.24

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	NA
Project	: HAAF, MISC.S.I.	Date Received:	01/26/04
SDG NO.	: 04A096	Date Extracted:	01/26/04 09:15
Sample ID:	MBLK1S	Date Analyzed:	02/02/04 11:33
Lab Samp ID:	IPA047SB	Dilution Factor:	1
Lab File ID:	I73A015017	Matrix :	SOIL
Ext Btch ID:	IPA047S	% Moisture :	NA
Calib. Ref.:	I73A015015	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	5	1.7
Arsenic	ND	3	.4
Cadmium	ND	.3	.1
Chromium	ND	5	.22
Copper	ND	5	.1
Lead	ND	10	.24
Nickel	ND	5	.27
Zinc	.265J	5	.19

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	NA
Project	: HAAF, MISC.S.I.	Date Received:	02/02/04
SDG NO.	: 04A096	Date Extracted:	02/02/04 09:00
Sample ID:	MBLK2S	Date Analyzed:	02/06/04 10:13
Lab Samp ID:	IPB002SB	Dilution Factor:	1
Lab File ID:	I73B016017	Matrix :	SOIL
Ext Btch ID:	IPB002S	% Moisture :	NA
Calib. Ref.:	I73B016015	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	5	1.7
Arsenic	ND	3	.4
Cadmium	ND	.3	.1
Chromium	ND	5	.22
Copper	ND	5	.1
Lead	ND	10	.24
Nickel	ND	5	.27
Zinc	ND	5	.19

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
SDG NO.: 04A096
METHOD: METHOD 3050B/6010B

MATRIX:	SOIL			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1S				
CONTROL NO.:	IPA047SB	IPA047SL	IPA047SC		
LAB FILE ID:	I73A015017	I73A015018	I73A015019		
DATIME EXTRCTD:	01/26/0409:15	01/26/0409:15	01/26/0409:15	DATE COLLECTED:	NA
DATIME ANALYZD:	02/02/0411:33	02/02/0411:39	02/02/0411:45	DATE RECEIVED:	01/26/04
PREP. BATCH:	IPA047S	IPA047S	IPA047S		
CALIB. REF:	I73A015015	I73A015015	I73A015015		

ACCESSION:

PARAMETER	BLNK RSLT mg/kg	SPIKE AMT mg/kg	BS RSLT mg/kg	BS % REC	SPIKE AMT mg/kg	BSD RSLT mg/kg	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Antimony	ND	500	541	108	500	540	108	0	80-120	20
Arsenic	ND	100	113	113	100	112	112	0	80-120	20
Cadmium	ND	100	104	104	100	104	104	0	80-120	20
Chromium	ND	100	115	115	100	115	115	0	80-120	20
Copper	ND	100	103	103	100	104	104	0	80-120	20
Lead	ND	100	104	104	100	104	104	0	80-120	20
Nickel	ND	100	102	102	100	101	101	0	80-120	20
Zinc	.265J	100	102	102	100	102	102	0	80-120	20

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
SDG NO.: 04A096
METHOD: METHOD 3050B/6010B

MATRIX:	SOIL			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK2S				
CONTROL NO.:	IPB002SB	IPB002SL	IPB002SC		
LAB FILE ID:	I73B016017	I73B016018	I73B016019		
DATIME EXTRCTD:	02/02/0409:00	02/02/0409:00	02/02/0409:00	DATE COLLECTED:	NA
DATIME ANALYZD:	02/06/0410:13	02/06/0410:19	02/06/0410:26	DATE RECEIVED:	02/02/04
PREP. BATCH:	IPB002S	IPB002S	IPB002S		
CALIB. REF:	I73B016015	I73B016015	I73B016015		

ACCESSION:

PARAMETER	BLNK RSLT mg/kg	SPIKE AMT mg/kg	BS RSLT mg/kg	BS % REC	SPIKE AMT mg/kg	BSD RSLT mg/kg	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Antimony	ND	500	493	99	500	485	97	2	80-120	20
Arsenic	ND	100	100	100	100	99.1	99	1	80-120	20
Cadmium	ND	100	100	100	100	98.7	99	1	80-120	20
Chromium	ND	100	99.5	99	100	98.1	98	1	80-120	20
Copper	ND	100	97.7	98	100	96.4	96	1	80-120	20
Lead	ND	100	97.8	98	100	96.5	97	1	80-120	20
Nickel	ND	100	93.5	94	100	92.3	92	1	80-120	20
Zinc	ND	100	99.7	100	100	98.4	98	1	80-120	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
SDG NO.: 04A096
METHOD: METHOD 3050B/6010B

MATRIX:	SOIL			% MOISTURE:	23.4
DILTN FACTR:	1	1	1		
SAMPLE ID:	HAAF-FITB-731				
CONTROL NO.:	A096-01R	A096-01M	A096-01S		
LAB FILE ID:	I73B016025	I73B016021	I73B016022		
DATIME EXTRCTD:	02/02/0409:00	02/02/0409:00	02/02/0409:00	DATE COLLECTED:	01/15/04
DATIME ANALYZD:	02/06/0411:05	02/06/0410:38	02/06/0410:45	DATE RECEIVED:	01/17/04
PREP. BATCH:	IPB002S	IPB002S	IPB002S		
CALIB. REF:	I73B016015	I73B016015	I73B016015		

ACCESSION:

PARAMETER	SMPL RSLT mg/kg	SPIKE AMT mg/kg	MS RSLT mg/kg	MS % REC	SPIKE AMT mg/kg	MSD RSLT mg/kg	MSD % REC	RPD %	QC LIMIT %	MAX RPD %
Antimony	ND	52.2	6.99	13*	52.2	5.5J	11*	24*	80-120	20
Arsenic	5.54	52.2	51.1	87	52.2	51.5	88	1	80-120	20
Cadmium	ND	52.2	46.1	88	52.2	45.7	88	1	80-120	20
Chromium	53.2	52.2	105	99	52.2	104	98	1	80-120	20
Copper	21.6	52.2	70.7	94	52.2	70.4	94	0	80-120	20
Lead	15.9	52.2	65.3	95	52.2	64.7	93	1	80-120	20
Nickel	37.3	52.2	89.4	100	52.2	88.9	99	1	80-120	20
Zinc	44.3	52.2	95.1	97	52.2	94.3	96	1	80-120	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
SDG NO.: 04A096
METHOD: METHOD 3050B/6010B

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MATRIX: SOIL % MOISTURE: 23.4

DILTN FACTR:	1	1	1		
SAMPLE ID:	HAAF-FITB-731				
CONTROL NO.:	A096-01R	A096-01U	A096-01V		
LAB FILE ID:	I73B016025	I73B016023	I73B016024		
DATIME EXTRCTD:	02/02/0409:00	02/02/0409:00	02/02/0409:00	DATE COLLECTED:	01/15/04
DATIME ANALYZD:	02/06/0411:05	02/06/0410:51	02/06/0410:57	DATE RECEIVED:	01/17/04
PREP. BATCH:	IPB002S	IPB002S	IPB002S		
CALIB. REF:	I73B016015	I73B016015	I73B016015		

ACCESSION:

PARAMETER	SMPL RSLT mg/kg	SPIKE AMT mg/kg	MS RSLT mg/kg	MS % REC	SPIKE AMT mg/kg	MSD RSLT mg/kg	MSD % REC	RPD %	QC LIMIT %	MAX RPD %
Antimony	ND	52.2	5.17J	10*	52.2	6.84	13*	28*	80-120	20
Arsenic	5.54	52.2	49.5	84	52.2	50.5	86	2	80-120	20
Cadmium	ND	52.2	44.8	86	52.2	45.5	87	1	80-120	20
Chromium	53.2	52.2	103	95	52.2	103	96	1	80-120	20
Copper	21.6	52.2	70.1	93	52.2	70	93	0	80-120	20
Lead	15.9	52.2	63.6	91	52.2	64	92	1	80-120	20
Nickel	37.3	52.2	87.5	96	52.2	88.2	97	1	80-120	20
Zinc	44.3	52.2	93.5	94	52.2	93.7	95	0	80-120	20

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
SDG NO.: 04A096
METHOD: METHOD 3050B/6010B

MATRIX:	SOIL		% MOISTURE:	23.4
DILTN FACTR:	1	1		
SAMPLE ID:	HAAF-FITB-731			
CONTROL NO.:	A096-01	A096-01A		
LAB FILE ID:	I73A015025	I73A015020		
DATIME EXTRCTD:	01/26/0409:15	01/26/0409:15	DATE COLLECTED:	01/15/04
DATIME ANALYZD:	02/02/0412:24	02/02/0411:51	DATE RECEIVED:	01/17/04
PREP. BATCH:	IPA047S	IPA047S		
CALIB. REF:	I73A015015	I73A015015		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	AS RSLT (mg/kg)	AS % REC	QC LIMIT (%)
Antimony	ND	130	657	101	75-125
Arsenic	6.1	130	143	105	75-125
Cadmium	.223J	130	123	94	75-125
Chromium	144	130	275	101	75-125
Copper	27.6	130	156	99	75-125
Lead	294	130	407	87	75-125
Nickel	46.3	130	165	91	75-125
Zinc	52.6	130	173	93	75-125

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
SDG NO.: 04A096
METHOD: METHOD 3050B/6010B

MATRIX:	SOIL		% MOISTURE:	23.4
DILTN FACTR:	1	1		
SAMPLE ID:	HAAF-FITB-731			
CONTROL NO.:	A096-01R	A096-01N		
LAB FILE ID:	I73B016025	I73B016020		
DATIME EXTRCTD:	02/02/0409:00	02/02/0409:00	DATE COLLECTED:	01/15/04
DATIME ANALYZD:	02/06/0411:05	02/06/0410:32	DATE RECEIVED:	01/17/04
PREP. BATCH:	IPB002S	IPB002S		
CALIB. REF:	I73B016015	I73B016015		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	AS RSLT (mg/kg)	AS % REC	QC LIMIT (%)
Antimony	ND	652	599	92	75-125
Arsenic	5.54	130	128	94	75-125
Cadmium	ND	130	120	92	75-125
Chromium	53.2	130	170	90	75-125
Copper	21.6	130	142	93	75-125
Lead	15.9	130	134	91	75-125
Nickel	37.3	130	148	85	75-125
Zinc	44.3	130	163	91	75-125

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
BATCH NO.: 04A096
METHOD: METHOD 3050B/6010B

MATRIX: SOIL % MOISTURE: 23.4

DILUTION FACTOR:	1	5		
SAMPLE ID:	HAAF-FITB-731	HAAF-FITB-731DL		
EMAX SAMP ID:	A096-01	A096-01T		
LAB FILE ID:	I73A015025	I73A015026		
DATE EXTRACTED:	01/26/0409:15	01/26/0409:15	DATE COLLECTED:	01/15/04
DATE ANALYZED:	02/02/0412:24	02/02/0412:30	DATE RECEIVED:	01/17/04
PREP. BATCH:	IPA047S	IPA047S		
CALIB. REF:	I73A015015	I73A015015		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SERIAL DIL RSLT (mg/kg)	DIF RSLT %	QC LIMIT (%)
Antimony	ND	ND	0	10
Arsenic	6.1	7.45J	NA	10
Cadmium	.223J	ND	NA	10
Chromium	144	153	6	10
Copper	27.6	26.6J	NA	10
Lead	294	319	8	10
Nickel	46.3	50.6	9	10
Zinc	52.6	61.4	17*	10

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
BATCH NO.: 04A096
METHOD: METHOD 3050B/6010B

MATRIX: SOIL % MOISTURE: 23.4

DILUTION FACTOR:	1	5		
SAMPLE ID:	HAAF-FITB-731	HAAF-FITB-731DL		
EMAX SAMP ID:	A096-01R	A096-01O		
LAB FILE ID:	I73B016025	I73B016026		
DATE EXTRACTED:	02/02/0409:00	02/02/0409:00	DATE COLLECTED:	01/15/04
DATE ANALYZED:	02/06/0411:05	02/06/0411:12	DATE RECEIVED:	01/17/04
PREP. BATCH:	IPB002S	IPB002S		
CALIB. REF:	I73B016015	I73B016015		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SERIAL DIL RSLT (mg/kg)	DIF RSLT %	QC LIMIT (%)
Antimony	ND	ND	0	10
Arsenic	5.54	5.73J	NA	10
Cadmium	ND	ND	0	10
Chromium	53.2	50.6	5	10
Copper	21.6	18.7J	NA	10
Lead	15.9	14.6J	NA	10
Nickel	37.3	36.3	3	10
Zinc	44.3	42.7	3	10

METHOD 7471A
MERCURY BY COLD VAPOR

Client : USACE
Project : HAAF, MISC.S.I.
Batch No. : 04A096

Matrix : SOIL
Instrument ID : TI047

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/kg)	DLF	MOIST	RL (mg/kg)	MDL (mg/kg)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1S	HGA016SB	ND	1	NA	.05	.025	01/22/0415:48	01/22/0412:30	M47A015010	M47A015008	HGA016S	NA	01/22/04
LCS1S	HGA016SL	.82	1	NA	.05	.025	01/22/0415:50	01/22/0412:30	M47A015011	M47A015008	HGA016S	NA	01/22/04
LCD1S	HGA016SC	.82	1	NA	.05	.025	01/22/0415:52	01/22/0412:30	M47A015012	M47A015008	HGA016S	NA	01/22/04
HAAF-REV6-D-503AS	A096-08A	.624	1	28.9	.0703	.0352	01/22/0415:54	01/22/0412:30	M47A015013	M47A015008	HGA016S	01/12/04	01/17/04
HAAF-REV6-D-503	A096-08	.157	1	28.9	.0703	.0352	01/22/0415:57	01/22/0412:30	M47A015014	M47A015008	HGA016S	01/12/04	01/17/04
HAAF-REV6-D-503DL	A096-08T	ND	5	28.9	.352	.176	01/22/0415:59	01/22/0412:30	M47A015015	M47A015008	HGA016S	01/12/04	01/17/04
HAAF-REV6-D-503MS	A096-08M	1.27	1	28.9	.0703	.0352	01/22/0416:01	01/22/0412:30	M47A015016	M47A015008	HGA016S	01/12/04	01/17/04
HAAF-REV6-D-503MSD	A096-08S	1.27	1	28.9	.0703	.0352	01/22/0416:04	01/22/0412:30	M47A015017	M47A015008	HGA016S	01/12/04	01/17/04
HAAF-REV6-723	A096-05	.0551J	1	13.2	.0576	.0288	01/22/0416:15	01/22/0412:30	M47A015022	M47A015020	HGA016S	01/12/04	01/17/04
HAAF-REV6-724	A096-06	.145	1	27.8	.0693	.0346	01/22/0416:17	01/22/0412:30	M47A015023	M47A015020	HGA016S	01/12/04	01/17/04
HAAF-REV6-725	A096-07	.105	1	24.0	.0658	.0329	01/22/0416:19	01/22/0412:30	M47A015024	M47A015020	HGA016S	01/12/04	01/17/04
HAAF-REV7-726	A096-09	.102	1	18.7	.0615	.0308	01/22/0416:21	01/22/0412:30	M47A015025	M47A015020	HGA016S	01/12/04	01/17/04
HAAF-REV7-727	A096-10	.165	1	29.0	.0704	.0352	01/22/0416:24	01/22/0412:30	M47A015026	M47A015020	HGA016S	01/12/04	01/17/04
HAAF-REV7-728	A096-11	.241	1	28.8	.0702	.0351	01/22/0416:26	01/22/0412:30	M47A015027	M47A015020	HGA016S	01/12/04	01/17/04

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
SDG NO.: 04A096
METHOD: METHOD 7471A

MATRIX:	SOIL			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1S				
CONTROL NO.:	HGA016SB	HGA016SL	HGA016SC		
LAB FILE ID:	M47A015010	M47A015011	M47A015012		
DATIME EXTRCTD:	01/22/0412:30	01/22/0412:30	01/22/0412:30	DATE COLLECTED:	NA
DATIME ANALYZD:	01/22/0415:48	01/22/0415:50	01/22/0415:52	DATE RECEIVED:	01/22/04
PREP. BATCH:	HGA016S	HGA016S	HGA016S		
CALIB. REF:	M47A015008	M47A015008	M47A015008		

ACCESSION:

PARAMETER	BLNK RSLT mg/kg	SPIKE AMT mg/kg	BS RSLT mg/kg	BS % REC	SPIKE AMT mg/kg	BSD RSLT mg/kg	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Mercury	ND	.833	.82	98	.833	.82	98	0	80-120	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
SDG NO.: 04A096
METHOD: METHOD 7471A

MATRIX:	SOIL			% MOISTURE:	28.9
DILTN FACTR:	1	1	1		
SAMPLE ID:	HAAF-REV6-D-503				
CONTROL NO.:	A096-08	A096-08M	A096-08S		
LAB FILE ID:	M47A015014	M47A015016	M47A015017		
DATIME EXTRCTD:	01/22/0412:30	01/22/0412:30	01/22/0412:30	DATE COLLECTED:	01/12/04
DATIME ANALYZD:	01/22/0415:57	01/22/0416:01	01/22/0416:04	DATE RECEIVED:	01/17/04
PREP. BATCH:	HGA016S	HGA016S	HGA016S		
CALIB. REF:	M47A015008	M47A015008	M47A015008		

ACCESSION:

PARAMETER	SMPL RSLT mg/kg	SPIKE AMT mg/kg	MS RSLT mg/kg	MS % REC	SPIKE AMT mg/kg	MSD RSLT mg/kg	MSD % REC	RPD %	QC LIMIT %	MAX RPD %
Mercury	.157	1.17	1.27	95	1.17	1.27	95	0	80-120	20

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
SDG NO.: 04A096
METHOD: METHOD 7471A

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MATRIX:	SOIL		% MOISTURE:	28.9
DILTN FACTR:	1	1		
SAMPLE ID:	HAAF-REV6-D-503			
CONTROL NO.:	A096-08	A096-08A		
LAB FILE ID:	M47A015014	M47A015013		
DATIME EXTRCTD:	01/22/0412:30	01/22/0412:30	DATE COLLECTED:	01/12/04
DATIME ANALYZD:	01/22/0415:57	01/22/0415:54	DATE RECEIVED:	01/17/04
PREP. BATCH:	HGA016S	HGA016S		
CALIB. REF:	M47A015008	M47A015008		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	AS RSLT (mg/kg)	AS % REC	QC LIMIT (%)
Mercury	.157	.468	.624	100	85-115

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
BATCH NO.: 04A096
METHOD: METHOD 7471A

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MATRIX:	SOIL		% MOISTURE:	28.9
DILUTION FACTOR:	1	5		
SAMPLE ID:	HAAF-REV6-D-503	HAAF-REV6-D-503DL		
EMAX SAMP ID:	A096-08	A096-08T		
LAB FILE ID:	M47A015014	M47A015015		
DATE EXTRACTED:	01/22/0412:30	01/22/0412:30	DATE COLLECTED:	01/12/04
DATE ANALYZED:	01/22/0415:57	01/22/0415:59	DATE RECEIVED:	01/17/04
PREP. BATCH:	HGA016S	HGA016S		
CALIB. REF:	M47A015008	M47A015008		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SERIAL DIL RSLT (mg/kg)	DIF RSLT %	QC LIMIT (%)
Mercury	.157	ND	NA	10

SW 3550B/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client :	USACE	Date Collected:	01/13/04
Project :	HAAF, MISC.S.I.	Date Received:	01/17/04
Batch No. :	04A097	Date Extracted:	01/23/04 11:30
Sample ID:	HAAF-SR-766	Date Analyzed:	01/30/04 20:53
Lab Samp ID:	A097-11	Dilution Factor:	2
Lab File ID:	RAH269	Matrix :	SOIL
Ext Btch ID:	SVA023S	% Moisture :	31.4
Calib. Ref.:	RAH183	Instrument ID :	T-O41

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
ACENAPHTHENE	1.3	.015	.0058
ACENAPHTHYLENE	.0069J	.015	.0058
ANTHRACENE	2	.015	.0058
BENZO(A)ANTHRACENE	32E	.015	.0058
BENZO(A)PYRENE	37E	.015	.0058
BENZO(B)FLUORANTHENE	62E	.015	.0058
BENZO(K)FLUORANTHENE	13E	.015	.0058
BENZO(G,H,I)PERYLENE	33E	.015	.0058
CHRYSENE	25E	.015	.0058
DIBENZO(A,H)ANTHRACENE	11E	.015	.0058
FLUORANTHENE	21E	.015	.0058
FLUORENE	.77	.015	.0058
INDENO(1,2,3-CD)PYRENE	40E	.015	.0058
NAPHTHALENE	1.3	.015	.0058
PHENANTHRENE	8.5E	.015	.0058
PYRENE	18E	.015	.0058
2-METHYLNAPHTHALENE	.35	.015	.0058

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	87	50-130

RL: Reporting Limit

SW 3550B/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client	: USACE	Date Collected:	01/13/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
Batch No.	: 04A097	Date Extracted:	01/23/04 11:30
Sample ID:	HAAF-SR-769	Date Analyzed:	01/30/04 22:03
Lab Samp ID:	A097-13	Dilution Factor:	1
Lab File ID:	RAH271	Matrix :	SOIL
Ext Btch ID:	SVA023S	% Moisture :	28.8
Calib. Ref.:	RAH183	Instrument ID :	T-O41

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
ACENAPHTHENE	.0029J	.007	.0028
ACENAPHTHYLENE	ND	.007	.0028
ANTHRACENE	.0032J	.007	.0028
BENZO(A)ANTHRACENE	.035	.007	.0028
BENZO(A)PYRENE	.033	.007	.0028
BENZO(B)FLUORANTHENE	.049	.007	.0028
BENZO(K)FLUORANTHENE	.024	.007	.0028
BENZO(G,H,I)PERYLENE	.026	.007	.0028
CHRYSENE	.044	.007	.0028
DIBENZO(A,H)ANTHRACENE	.012	.007	.0028
FLUORANTHENE	.086	.007	.0028
FLUORENE	ND	.007	.0028
INDENO(1,2,3-CD)PYRENE	.028	.007	.0028
NAPHTHALENE	.0034J	.007	.0028
PHENANTHRENE	.045	.007	.0028
PYRENE	.071	.007	.0028
2-METHYLNAPHTHALENE	ND	.007	.0028

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	98	50-130

RL: Reporting Limit

SW 3550B/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client	: USACE	Date Collected:	01/13/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
Batch No.	: 04A097	Date Extracted:	01/23/04 11:30
Sample ID:	HAAF-SR-770	Date Analyzed:	01/30/04 19:09
Lab Samp ID:	A097-14	Dilution Factor:	1
Lab File ID:	RAH266	Matrix :	SOIL
Ext Btch ID:	SVA023S	% Moisture :	33.1
Calib. Ref.:	RAH183	Instrument ID :	T-O41

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
ACENAPHTHENE	ND	.0075	.003
ACENAPHTHYLENE	ND	.0075	.003
ANTHRACENE	ND	.0075	.003
BENZO(A)ANTHRACENE	.011	.0075	.003
BENZO(A)PYRENE	.011	.0075	.003
BENZO(B)FLUORANTHENE	.023	.0075	.003
BENZO(K)FLUORANTHENE	.0061J	.0075	.003
BENZO(G,H,I)PERYLENE	.01	.0075	.003
CHRYSENE	.014	.0075	.003
DIBENZO(A,H)ANTHRACENE	.0073J	.0075	.003
FLUORANTHENE	.017	.0075	.003
FLUORENE	ND	.0075	.003
INDENO(1,2,3-CD)PYRENE	.012	.0075	.003
NAPHTHALENE	ND	.0075	.003
PHENANTHRENE	ND	.0075	.003
PYRENE	.016	.0075	.003
2-METHYLNAPHTHALENE	ND	.0075	.003

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	83	50-130

RL: Reporting Limit

SW 3550B/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client	: USACE	Date Collected:	01/13/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
Batch No.	: 04A097	Date Extracted:	01/23/04 11:30
Sample ID:	HAAF-SR-768	Date Analyzed:	02/02/04 14:46
Lab Samp ID:	A097-12W	Dilution Factor:	1
Lab File ID:	RBH005	Matrix :	SOIL
Ext Btch ID:	SVA023S	% Moisture :	34.2
Calib. Ref.:	RAH183	Instrument ID :	T-O41

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
ACENAPHTHENE	.018	.0076	.003
ACENAPHTHYLENE	ND	.0076	.003
ANTHRACENE	.015	.0076	.003
BENZO(A)ANTHRACENE	.088	.0076	.003
BENZO(A)PYRENE	.08	.0076	.003
BENZO(B)FLUORANTHENE	.11	.0076	.003
BENZO(K)FLUORANTHENE	.046	.0076	.003
BENZO(G,H,I)PERYLENE	.052	.0076	.003
CHRYSENE	.075	.0076	.003
DIBENZO(A,H)ANTHRACENE	.017	.0076	.003
FLUORANTHENE	.15	.0076	.003
FLUORENE	.014	.0076	.003
INDENO(1,2,3-CD)PYRENE	.056	.0076	.003
NAPHTHALENE	.015	.0076	.003
PHENANTHRENE	.12	.0076	.003
PYRENE	.12	.0076	.003
2-METHYLNAPHTHALENE	.0083	.0076	.003

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	93	50-130

RL: Reporting Limit

SW 3550B/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client	: USACE	Date Collected:	01/13/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
Batch No.	: 04A097	Date Extracted:	01/23/04 11:30
Sample ID:	HAAF-SR-766DL	Date Analyzed:	02/02/04 16:37
Lab Samp ID:	A097-11I	Dilution Factor:	100
Lab File ID:	RBH006	Matrix :	SOIL
Ext Btch ID:	SVA023S	% Moisture :	31.4
Calib. Ref.:	RAH183	Instrument ID :	T-O41

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
ACENAPHTHENE	1.7	.73	.29
ACENAPHTHYLENE	ND	.73	.29
ANTHRACENE	2.3	.73	.29
BENZO(A)ANTHRACENE	57	.73	.29
BENZO(A)PYRENE	70	.73	.29
BENZO(B)FLUORANTHENE	97	.73	.29
BENZO(K)FLUORANTHENE	43	.73	.29
BENZO(G,H,I)PERYLENE	49	.73	.29
CHRYSENE	63	.73	.29
DIBENZO(A,H)ANTHRACENE	16	.73	.29
FLUORANTHENE	48	.73	.29
FLUORENE	.68J	.73	.29
INDENO(1,2,3-CD)PYRENE	51	.73	.29
NAPHTHALENE	1.5	.73	.29
PHENANTHRENE	12	.73	.29
PYRENE	45	.73	.29
2-METHYLNAPHTHALENE	.35J	.73	.29

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	106	50-130

RL: Reporting Limit

SW 3520C/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client	: USACE	Date Collected:	NA
Project	: HAAF, MISC.S.I.	Date Received:	01/22/04
Batch No.	: 04A097	Date Extracted:	01/22/04 18:00
Sample ID:	MBLK1W	Date Analyzed:	01/30/04 12:48
Lab Samp ID:	SVA021WB	Dilution Factor:	1
Lab File ID:	RAH255	Matrix :	WATER
Ext Btch ID:	SVA021W	% Moisture :	NA
Calib. Ref.:	RAH183	Instrument ID :	T-O41

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ACENAPHTHENE	ND	1	.2
ACENAPHTHYLENE	ND	1	.2
ANTHRACENE	ND	1	.2
BENZO(A)ANTHRACENE	ND	1	.2
BENZO(A)PYRENE	ND	1	.2
BENZO(B)FLUORANTHENE	ND	1	.2
BENZO(K)FLUORANTHENE	ND	1	.2
BENZO(G,H,I)PERYLENE	ND	1	.2
CHRYSENE	ND	1	.2
DIBENZO(A,H)ANTHRACENE	ND	1	.2
FLUORANTHENE	ND	1	.2
FLUORENE	ND	1	.2
INDENO(1,2,3-CD)PYRENE	ND	1	.2
NAPHTHALENE	ND	1	.2
PHENANTHRENE	ND	1	.2
PYRENE	ND	1	.2
2-METHYLNAPHTHALENE	ND	1	.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	83	50-130

RL: Reporting Limit

SW 3550B/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client	: USACE	Date Collected:	NA
Project	: HAAF, MISC.S.I.	Date Received:	01/23/04
Batch No.	: 04A097	Date Extracted:	01/23/04 11:30
Sample ID	: MBLK1S	Date Analyzed:	01/30/04 16:16
Lab Samp ID	: SVA023SB	Dilution Factor:	1
Lab File ID	: RAH261	Matrix :	SOIL
Ext Btch ID	: SVA023S	% Moisture :	NA
Calib. Ref.	: RAH183	Instrument ID :	T-O41

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
ACENAPHTHENE	ND	.005	.002
ACENAPHTHYLENE	ND	.005	.002
ANTHRACENE	ND	.005	.002
BENZO(A)ANTHRACENE	ND	.005	.002
BENZO(A)PYRENE	ND	.005	.002
BENZO(B)FLUORANTHENE	ND	.005	.002
BENZO(K)FLUORANTHENE	ND	.005	.002
BENZO(G,H,I)PERYLENE	ND	.005	.002
CHRYSENE	ND	.005	.002
DIBENZO(A,H)ANTHRACENE	ND	.005	.002
FLUORANTHENE	ND	.005	.002
FLUORENE	ND	.005	.002
INDENO(1,2,3-CD)PYRENE	ND	.005	.002
NAPHTHALENE	ND	.005	.002
PHENANTHRENE	ND	.005	.002
PYRENE	ND	.005	.002
2-METHYLNAPHTHALENE	ND	.005	.002

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	86	50-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
BATCH NO.: 04A097
METHOD: SW 3550B/8270C SIM

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MATRIX: SOIL % MOISTURE: NA
DILUTION FACTOR: 1 1
SAMPLE ID: MBLK1S
LAB SAMP ID: SVA023SB SVA023SL
LAB FILE ID: RAH261 RAH262
DATE EXTRACTED: 01/23/0411:30 01/23/0411:30 DATE COLLECTED: NA
DATE ANALYZED: 01/30/0416:16 01/30/0416:51 DATE RECEIVED: 01/23/04
PREP. BATCH: SVA023S SVA023S
CALIB. REF: RAH183 RAH183

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT (%)
Acenaphthene	ND	.666	.493	74	40-130
Acenaphthylene	ND	.666	.556	83	40-130
Anthracene	ND	.666	.493	74	50-130
Benzo(a)anthracene	ND	.666	.508	76	50-130
Benzo(a)pyrene	ND	.666	.567	85	50-130
Benzo(b)fluoranthene	ND	.666	.562	84	50-130
Benzo(k)fluoranthene	ND	.666	.613	92	50-130
Benzo(g,h,i)perylene	ND	.666	.553	83	50-130
Chrysene	ND	.666	.55	83	50-130
Dibenzo(a,h)anthracene	ND	.666	.529	79	50-130
Fluoranthene	ND	.666	.51	77	50-130
Fluorene	ND	.666	.514	77	50-130
Indeno(1,2,3-cd)pyrene	ND	.666	.512	77	50-130
Naphthalene	ND	.666	.491	74	40-130
Phenanthrene	ND	.666	.557	84	50-130
Pyrene	ND	.666	.507	76	40-130
2-Methylnaphthalene	ND	.666	.5	75	40-130

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SURROGATE PARAMETER	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT (%)
Terphenyl-d14	.833	.708	85	50-130

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
BATCH NO.: 04A097
METHOD: SW 3520C/8270C SIM

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	SVA021WB	SVA021WL	SVA021WC		
LAB FILE ID:	RAH255	RAH256	RAH257		
DATE EXTRACTED:	01/22/0418:00	01/22/0418:00	01/22/0418:00	DATE COLLECTED:	NA
DATE ANALYZED:	01/30/0412:48	01/30/0413:23	01/30/0413:57	DATE RECEIVED:	01/22/04
PREP. BATCH:	SVA021W	SVA021W	SVA021W		
CALIB. REF:	RAH183	RAH183	RAH183		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Acenaphthene	ND	20	15.6	78	20	15.4	77	1	40-130	35
Acenaphthylene	ND	20	17.6	88	20	17.6	88	0	40-130	35
Anthracene	ND	20	16.7	84	20	15.8	79	5	50-130	35
Benzo(a)anthracene	ND	20	18.6	93	20	16.9	84	10	50-130	35
Benzo(a)pyrene	ND	20	19.6	98	20	18.7	93	5	50-130	35
Benzo(b)fluoranthene	ND	20	19.9	99	20	18.6	93	7	40-150	35
Benzo(k)fluoranthene	ND	20	21.2	106	20	19.4	97	9	30-130	35
Benzo(g,h,i)perylene	ND	20	18	90	20	17.5	88	3	50-130	35
Chrysene	ND	20	20.1	101	20	18.2	91	10	50-130	35
Dibenzo(a,h)anthracene	ND	20	17.7	88	20	16.4	82	7	40-140	35
Fluoranthene	ND	20	17.4	87	20	15.9	79	9	50-130	35
Fluorene	ND	20	17.1	85	20	16.9	85	1	40-130	35
Indeno(1,2,3-cd)pyrene	ND	20	16.8	84	20	16.1	81	4	30-140	35
Naphthalene	ND	20	13.7	69	20	14.1	71	3	30-130	35
Phenanthrene	ND	20	18.6	93	20	17.6	88	5	40-130	35
Pyrene	ND	20	17.5	87	20	16	80	9	40-130	35
2-Methylnaphthalene	ND	20	14.4	72	20	14.5	72	1	40-130	35

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Terphenyl-d14	25	23.6	94	25	20.9	84	50-130

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
BATCH NO.: 04A097
METHOD: SW 3550B/8270C SIM

MATRIX: SOIL % MOISTURE: 33.1

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	HAAF-SR-770				
LAB SAMP ID:	A097-14	A097-14M	A097-14S		
LAB FILE ID:	RAH266	RAH267	RAH268		
DATE EXTRACTED:	01/23/0411:30	01/23/0411:30	01/23/0411:30	DATE COLLECTED:	01/13/04
DATE ANALYZED:	01/30/0419:09	01/30/0419:44	01/30/0420:19	DATE RECEIVED:	01/17/04
PREP. BATCH:	SVA023S	SVA023S	SVA023S		
CALIB. REF:	RAH183	RAH183	RAH183		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	SPIKE AMT (mg/kg)	MSD RSLT (mg/kg)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Acenaphthene	ND	.996	.681	68	.996	.735	74	8	40-130	35
Acenaphthylene	ND	.996	.779	78	.996	.825	83	6	40-130	35
Anthracene	ND	.996	.697	70	.996	.816	82	16	50-130	35
Benzo(a)anthracene	.0114	.996	.717	71	.996	.88	87	20	50-130	35
Benzo(a)pyrene	.0106	.996	.792	78	.996	1.01	101	24	50-130	35
Benzo(b)fluoranthene	.0231	.996	.78	76	.996	1.02	100	27	50-130	35
Benzo(k)fluoranthene	.00609J	.996	.815	81	.996	1.03	103	24	50-130	35
Benzo(g,h,i)perylene	.0105	.996	.741	73	.996	.915	91	21	50-130	35
Chrysene	.0137	.996	.761	75	.996	.967	96	24	50-130	35
Dibenzo(a,h)anthracene	.0073J	.996	.725	72	.996	.897	89	21	50-130	35
Fluoranthene	.0175	.996	.713	70	.996	.887	87	22	50-130	35
Fluorene	ND	.996	.73	73	.996	.804	81	10	50-130	35
Indeno(1,2,3-cd)pyrene	.012	.996	.694	69	.996	.874	87	23	50-130	35
Naphthalene	ND	.996	.652	66	.996	.683	69	5	40-130	35
Phenanthrene	ND	.996	.785	79	.996	.916	92	15	50-130	35
Pyrene	.0162	.996	.705	69	.996	.882	87	22	40-130	35
2-Methylnaphthalene	ND	.996	.679	68	.996	.718	72	6	40-130	35

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	SPIKE AMT (mg/kg)	MSD RSLT (mg/kg)	MSD % REC	QC LIMIT (%)
Terphenyl-d14	1.25	1.03	82	1.25	1.13	90	50-130

METHOD 3050B/6010B
METALS BY ICP

Client :	USACE	Date Collected:	01/15/04
Project :	HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO. :	04A097	Date Extracted:	01/26/04/09:00
Sample ID:	HAAF-FITB-729	Date Analyzed:	01/30/04 01:45
Lab Samp ID:	A097-09	Dilution Factor:	1
Lab File ID:	I73A016033	Matrix :	SOIL
Ext Btch ID:	IPA046S	% Moisture :	37.2
Calib. Ref.:	I73A016027	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	7.96	2.71
Arsenic	12.1	4.78	.637
Cadmium	ND	.478	.159
Chromium	74.1	7.96	.35
Copper	40.6	7.96	.159
Lead	23.3	15.9	.382
Nickel	61.8	7.96	.43
Zinc	79.1	7.96	.303

METHOD 3050B/6010B
METALS BY ICP

Client :	USACE	Date Collected:	01/15/04
Project :	HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO. :	04A097	Date Extracted:	01/26/04/09:00
Sample ID:	HAAF-FITB-730	Date Analyzed:	01/30/04 01:58
Lab Samp ID:	A097-10	Dilution Factor:	1
Lab File ID:	I73A016035	Matrix :	SOIL
Ext Btch ID:	IPA046S	% Moisture :	29.1
Calib. Ref.:	I73A016027	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	7.05	2.4
Arsenic	11.4	4.23	.564
Cadmium	ND	.423	.141
Chromium	77.3	7.05	.31
Copper	37.7	7.05	.141
Lead	22.4	14.1	.339
Nickel	64.6	7.05	.381
Zinc	80	7.05	.268

METHOD 3050B/6010B
METALS BY ICP

Client :	USACE	Date Collected:	01/13/04
Project :	HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO. :	04A097	Date Extracted:	01/26/04/09:00
Sample ID:	HAAF-SR-766	Date Analyzed:	01/30/04 02:05
Lab Samp ID:	A097-11	Dilution Factor:	1
Lab File ID:	I73A016036	Matrix :	SOIL
Ext Btch ID:	IPA046S	% Moisture :	31.4
Calib. Ref.:	I73A016027	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	7.29	2.48
Arsenic	12.7	4.37	.583
Cadmium	ND	.437	.146
Chromium	85.9	7.29	.321
Copper	43.4	7.29	.146
Lead	30.2	14.6	.35
Nickel	63.8	7.29	.394
Zinc	72.9	7.29	.277

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	01/13/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO.	: 04A097	Date Extracted:	01/26/04/09:00
Sample ID:	HAAF-SR-768	Date Analyzed:	01/30/04 02:11
Lab Samp ID:	A097-12	Dilution Factor:	1
Lab File ID:	I73A016037	Matrix :	SOIL
Ext Btch ID:	IPA046S	% Moisture :	34.2
Calib. Ref.:	I73A016027	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	7.6	2.58
Arsenic	14	4.56	.608
Cadmium	ND	.456	.152
Chromium	85.6	7.6	.334
Copper	44	7.6	.152
Lead	154	15.2	.365
Nickel	66	7.6	.41
Zinc	81.6	7.6	.289

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	01/13/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO.	: 04A097	Date Extracted:	01/26/04/09:00
Sample ID:	HAAF-SR-769	Date Analyzed:	01/30/04 02:18
Lab Samp ID:	A097-13	Dilution Factor:	1
Lab File ID:	I73A016038	Matrix :	SOIL
Ext Btch ID:	IPA046S	% Moisture :	28.8
Calib. Ref.:	I73A016027	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	7.02	2.39
Arsenic	2.36J	4.21	.562
Cadmium	ND	.421	.14
Chromium	15.7	7.02	.309
Copper	9.17	7.02	.14
Lead	27	14	.337
Nickel	17	7.02	.379
Zinc	42.3	7.02	.267

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	01/13/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO.	: 04A097	Date Extracted:	01/26/04/09:00
Sample ID:	HAAF-SR-770	Date Analyzed:	01/30/04 02:37
Lab Samp ID:	A097-14	Dilution Factor:	1
Lab File ID:	I73A016041	Matrix :	SOIL
Ext Btch ID:	IPA046S	% Moisture :	33.1
Calib. Ref.:	I73A016039	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	7.47	2.54
Arsenic	1.45J	4.48	.598
Cadmium	ND	.448	.149
Chromium	11.5	7.47	.329
Copper	6.78J	7.47	.149
Lead	23.7	14.9	.359
Nickel	12.6	7.47	.404
Zinc	30.9	7.47	.284

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	01/15/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO.	: 04A097	Date Extracted:	01/26/04/09:00
Sample ID:	HAAF-TR-747	Date Analyzed:	01/30/04 02:44
Lab Samp ID:	A097-18	Dilution Factor:	1
Lab File ID:	I73A016042	Matrix :	SOIL
Ext Btch ID:	IPA046S	% Moisture :	15.1
Calib. Ref.:	I73A016039	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	5.89	2
Arsenic	5.49	3.53	.471
Cadmium	ND	.353	.118
Chromium	55	5.89	.259
Copper	40.5	5.89	.118
Lead	318	11.8	.283
Nickel	62.8	5.89	.318
Zinc	50	5.89	.224

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	01/15/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO.	: 04A097	Date Extracted:	01/26/04/09:00
Sample ID:	HAAF-TR-748	Date Analyzed:	01/30/04 02:50
Lab Samp ID:	A097-19	Dilution Factor:	1
Lab File ID:	I73A016043	Matrix :	SOIL
Ext Btch ID:	IPA046S	% Moisture :	20.8
Calib. Ref.:	I73A016039	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	2.88J	6.31	2.15
Arsenic	5.45	3.79	.505
Cadmium	ND	.379	.126
Chromium	51.4	6.31	.278
Copper	227	6.31	.126
Lead	2230	12.6	.303
Nickel	58.1	6.31	.341
Zinc	69.5	6.31	.24

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	01/15/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO.	: 04A097	Date Extracted:	01/26/04/09:00
Sample ID:	HAAF-TR-749	Date Analyzed:	01/30/04 02:57
Lab Samp ID:	A097-20	Dilution Factor:	1
Lab File ID:	I73A016044	Matrix :	SOIL
Ext Btch ID:	IPA046S	% Moisture :	21.8
Calib. Ref.:	I73A016039	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	6.39	2.17
Arsenic	2.36J	3.84	.512
Cadmium	ND	.384	.128
Chromium	19.8	6.39	.281
Copper	71.2	6.39	.128
Lead	1090	12.8	.307
Nickel	21.5	6.39	.345
Zinc	58.9	6.39	.243

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	01/15/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO.	: 04A097	Date Extracted:	01/26/04/09:00
Sample ID:	HAAF-TR-750	Date Analyzed:	01/30/04 03:03
Lab Samp ID:	A097-21	Dilution Factor:	1
Lab File ID:	I73A016045	Matrix :	SOIL
Ext Btch ID:	IPA046S	% Moisture :	25.5
Calib. Ref.:	I73A016039	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	6.71	2.28
Arsenic	4.39	4.03	.537
Cadmium	ND	.403	.134
Chromium	33.9	6.71	.295
Copper	758	6.71	.134
Lead	1170	13.4	.322
Nickel	33.7	6.71	.362
Zinc	152	6.71	.255

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	01/15/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO.	: 04A097	Date Extracted:	01/26/04/09:00
Sample ID:	HAAF-TR-751	Date Analyzed:	01/30/04 03:10
Lab Samp ID:	A097-22	Dilution Factor:	1
Lab File ID:	I73A016046	Matrix :	SOIL
Ext Btch ID:	IPA046S	% Moisture :	27.6
Calib. Ref.:	I73A016039	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	6.91	2.35
Arsenic	4.78	4.14	.552
Cadmium	ND	.414	.138
Chromium	34	6.91	.304
Copper	136	6.91	.138
Lead	1390	13.8	.331
Nickel	34.2	6.91	.373
Zinc	77.2	6.91	.262

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	01/15/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO.	: 04A097	Date Extracted:	01/26/04/09:00
Sample ID:	HAAF-TR-D-505	Date Analyzed:	01/30/04 03:16
Lab Samp ID:	A097-23	Dilution Factor:	1
Lab File ID:	I73A016047	Matrix :	SOIL
Ext Btch ID:	IPA046S	% Moisture :	20.3
Calib. Ref.:	I73A016039	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	9.15	6.27	2.13
Arsenic	4.89	3.76	.502
Cadmium	ND	.376	.125
Chromium	49	6.27	.276
Copper	200	6.27	.125
Lead	2950	12.5	.301
Nickel	53.5	6.27	.339
Zinc	61.6	6.27	.238

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	01/15/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO.	: 04A097	Date Extracted:	02/02/04 09:00
Sample ID:	HAAF-FITB-729RE	Date Analyzed:	02/03/04 11:39
Lab Samp ID:	A097-09R	Dilution Factor:	1
Lab File ID:	I73B003024	Matrix :	SOIL
Ext Btch ID:	IPB002S	% Moisture :	37.2
Calib. Ref.:	I73B003015	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	7.96	2.71
Arsenic	13.5	4.78	.637
Cadmium	1.3	.478	.159
Chromium	82.5	7.96	.35
Copper	41.5	7.96	.159
Lead	24	15.9	.382
Nickel	63.2	7.96	.43
Zinc	75.2	7.96	.303

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	01/15/04
Project	: HAAF, MISC.S.I.	Date Received:	01/17/04
SDG NO.	: 04A097	Date Extracted:	01/26/04/09:00
Sample ID:	HAAF-FITB-729DL	Date Analyzed:	01/30/04 01:52
Lab Samp ID:	A097-09T	Dilution Factor:	5
Lab File ID:	I73A016034	Matrix :	SOIL
Ext Btch ID:	IPA046S	% Moisture :	37.2
Calib. Ref.:	I73A016027	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	39.8	13.5
Arsenic	15.4J	23.9	3.18
Cadmium	ND	2.39	.796
Chromium	80.6	39.8	1.75
Copper	41.9	39.8	.796
Lead	25.8J	79.6	1.91
Nickel	67.5	39.8	2.15
Zinc	90.8	39.8	1.51

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	NA
Project	: HAAF, MISC.S.I.	Date Received:	01/26/04
SDG NO.	: 04A097	Date Extracted:	01/26/04/09:00
Sample ID:	MBLK1S	Date Analyzed:	01/30/04 00:38
Lab Samp ID:	IPA046SB	Dilution Factor:	1
Lab File ID:	I73A016023	Matrix :	SOIL
Ext Btch ID:	IPA046S	% Moisture :	NA
Calib. Ref.:	I73A016015	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	5	1.7
Arsenic	ND	3	.4
Cadmium	ND	.3	.1
Chromium	ND	5	.22
Copper	ND	5	.1
Lead	ND	10	.24
Nickel	ND	5	.27
Zinc	ND	5	.19

METHOD 3050B/6010B
METALS BY ICP

Client	: USACE	Date Collected:	NA
Project	: HAAF, MISC.S.I.	Date Received:	02/02/04
SDG NO.	: 04A097	Date Extracted:	02/02/04 09:00
Sample ID:	MBLK2S	Date Analyzed:	02/03/04 10:55
Lab Samp ID:	IPB002SB	Dilution Factor:	1
Lab File ID:	I73B003017	Matrix :	SOIL
Ext Btch ID:	IPB002S	% Moisture :	NA
Calib. Ref.:	I73B003015	Instrument ID :	EMAXTI73

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Antimony	ND	5	1.7
Arsenic	ND	3	.4
Cadmium	ND	.3	.1
Chromium	ND	5	.22
Copper	ND	5	.1
Lead	ND	10	.24
Nickel	ND	5	.27
Zinc	.224J	5	.19

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
SDG NO.: 04A097
METHOD: METHOD 3050B/6010B

MATRIX:	SOIL			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1S				
CONTROL NO.:	IPA046SB	IPA046SL	IPA046SC		
LAB FILE ID:	I73A016023	I73A016024	I73A016025		
DATIME EXTRCTD:	01/26/0409:00	01/26/0409:00	01/26/0409:00	DATE COLLECTED:	NA
DATIME ANALYZD:	01/30/0400:38	01/30/0400:44	01/30/0400:51	DATE RECEIVED:	01/26/04
PREP. BATCH:	IPA046S	IPA046S	IPA046S		
CALIB. REF:	I73A016015	I73A016015	I73A016015		

ACCESSION:

PARAMETER	BLNK RSLT mg/kg	SPIKE AMT mg/kg	BS RSLT mg/kg	BS % REC	SPIKE AMT mg/kg	BSD RSLT mg/kg	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Antimony	ND	500	486	97	500	478	96	2	80-120	20
Arsenic	ND	100	87.1	87	100	88.9	89	2	80-120	20
Cadmium	ND	100	91.5	91	100	92.9	93	2	80-120	20
Chromium	ND	100	90.3	90	100	91.5	91	1	80-120	20
Copper	ND	100	98.3	98	100	98.2	98	0	80-120	20
Lead	ND	100	99.9	100	100	99.6	100	0	80-120	20
Nickel	ND	100	95	95	100	96.2	96	1	80-120	20
Zinc	ND	100	102	102	100	102	102	1	80-120	20

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
SDG NO.: 04A097
METHOD: METHOD 3050B/6010B

MATRIX:	SOIL			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK2S				
CONTROL NO.:	IPB002SB	IPB002SL	IPB002SC		
LAB FILE ID:	I73B003017	I73B003018	I73B003019		
DATIME EXTRCTD:	02/02/0409:00	02/02/0409:00	02/02/0409:00	DATE COLLECTED:	NA
DATIME ANALYZD:	02/03/0410:55	02/03/0411:01	02/03/0411:07	DATE RECEIVED:	02/02/04
PREP. BATCH:	IPB002S	IPB002S	IPB002S		
CALIB. REF:	I73B003015	I73B003015	I73B003015		

ACCESSION:

PARAMETER	BLNK RSLT mg/kg	SPIKE AMT mg/kg	BS RSLT mg/kg	BS % REC	SPIKE AMT mg/kg	BSD RSLT mg/kg	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Antimony	ND	500	496	99	500	499	100	1	80-120	20
Arsenic	ND	100	103	103	100	104	104	0	80-120	20
Cadmium	ND	100	95.7	96	100	96	96	0	80-120	20
Chromium	ND	100	99.6	100	100	100	100	0	80-120	20
Copper	ND	100	99.2	99	100	99.7	100	0	80-120	20
Lead	ND	100	98.4	98	100	98.9	99	1	80-120	20
Nickel	ND	100	99.8	100	100	100	100	0	80-120	20
Zinc	.224J	100	98.6	98	100	99.1	99	0	80-120	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
SDG NO.: 04A097
METHOD: METHOD 3050B/6010B

MATRIX: SOIL % MOISTURE: 37.2

DILTN FACTR:	1	1	1		
SAMPLE ID:	HAAF-FITB-729				
CONTROL NO.:	A097-09	A097-09M	A097-09S		
LAB FILE ID:	I73A016033	I73B003020	I73B003021		
DATIME EXTRCTD:	01/26/0409:00	02/02/0409:00	02/02/0409:00	DATE COLLECTED:	01/15/04
DATIME ANALYZD:	01/30/0401:45	02/03/0411:13	02/03/0411:19	DATE RECEIVED:	01/17/04
PREP. BATCH:	IPA046S	IPB002S	IPB002S		
CALIB. REF:	I73A016027	I73B003015	I73B003015		

ACCESSION:

PARAMETER	SMPL RSLT mg/kg	SPIKE AMT mg/kg	MS RSLT mg/kg	MS % REC	SPIKE AMT mg/kg	MSD RSLT mg/kg	MSD % REC	RPD %	QC LIMIT %	MAX RPD %
Antimony	ND	63.7	ND	0*	63.7	4.41J	7*	200*	80-120	20
Arsenic	12.1	63.7	70.8	92	63.7	72.1	94	2	80-120	20
Cadmium	ND	63.7	54.1	85	63.7	54.6	86	1	80-120	20
Chromium	74.1	63.7	144	111	63.7	145	112	1	80-120	20
Copper	40.6	63.7	102	97	63.7	101	95	1	80-120	20
Lead	23.3	63.7	80.9	90	63.7	81.2	91	0	80-120	20
Nickel	61.8	63.7	122	95	63.7	124	97	1	80-120	20
Zinc	79.1	63.7	134	87	63.7	135	88	1	80-120	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
SDG NO.: 04A097
METHOD: METHOD 3050B/6010B

MATRIX: SOIL % MOISTURE: 37.2

DILTN FACTR:	1	1	1		
SAMPLE ID:	HAAF-FITB-729				
CONTROL NO.:	A097-09	A097-09U	A097-09V		
LAB FILE ID:	I73 016033	I73B003022	I73B003023		
DATIME EXTRCTD:	01/26/0409:00	02/02/0409:00	02/02/0409:00	DATE COLLECTED:	01/15/04
DATIME ANALYZD:	01/30/0401:45	02/03/0411:25	02/03/0411:31	DATE RECEIVED:	01/17/04
PREP. BATCH:	IPA046S	IPB002S	IPB002S		
CALIB. REF:	I73A016027	I73B003015	I73B003015		

ACCESSION:

PARAMETER	SMPL RSLT mg/kg	SPIKE AMT mg/kg	MS RSLT mg/kg	MS % REC	SPIKE AMT mg/kg	MSD RSLT mg/kg	MSD % REC	RPD %	QC LIMIT %	MAX RPD %
Antimony	ND	63.7	4.47J	7*	63.7	ND	0*	200*	80-120	20
Arsenic	12.1	63.7	73.2	96	63.7	71.9	94	2	80-120	20
Cadmium	ND	63.7	55.2	87	63.7	54.9	86	1	80-120	20
Chromium	74.1	63.7	146	113	63.7	146	113	0	80-120	20
Copper	40.6	63.7	102	96	63.7	103	98	1	80-120	20
Lead	23.3	63.7	81.9	92	63.7	81.7	92	0	80-120	20
Nickel	61.8	63.7	125	99	63.7	125	99	0	80-120	20
Zinc	79.1	63.7	136	89	63.7	136	89	0	80-120	20

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
SDG NO.: 04A097
METHOD: METHOD 3050B/6010B

MATRIX:	SOIL		% MOISTURE:	37.2
DILTN FACTR:	1	1		
SAMPLE ID:	HAAF-FITB-729			
CONTROL NO.:	A097-09	A097-09A		
LAB FILE ID:	I73A016033	I73A016032		
DATIME EXTRCTD:	01/26/0409:00	01/26/0409:00	DATE COLLECTED:	01/15/04
DATIME ANALYZD:	01/30/0401:45	01/30/0401:37	DATE RECEIVED:	01/17/04
PREP. BATCH:	IPA046S	IPA046S		
CALIB. REF:	I73A016027	I73A016027		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	AS RSLT (mg/kg)	AS % REC	QC LIMIT (%)
Antimony	ND	159	796	87	75-125
Arsenic	12.1	159	796	84	75-125
Cadmium	ND	159	796	86	75-125
Chromium	74.1	159	796	84	75-125
Copper	40.6	159	796	95	75-125
Lead	23.3	159	796	92	75-125
Nickel	61.8	159	796	89	75-125
Zinc	79.1	159	796	96	75-125

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
BATCH NO.: 04A097
METHOD: METHOD 3050B/6010B

MATRIX:	SOIL		% MOISTURE:	NA
DILUTION FACTOR:	1	5		
SAMPLE ID:	HAAF-FITB-729	HAAF-FITB-729DL		
EMAX SAMP ID:	A097-09	A097-09T		
LAB FILE ID:	I73A016033	I73A016034		
DATE EXTRACTED:	01/26/0409:00	01/26/0409:00	DATE COLLECTED:	01/15/04
DATE ANALYZED:	01/30/0401:45	01/30/0401:52	DATE RECEIVED:	01/17/04
PREP. BATCH:	IPA046S	IPA046S		
CALIB. REF:	I73A016027	I73A016027		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SERIAL DIL RSLT (mg/kg)	DIF RSLT %	QC LIMIT (%)
Antimony	ND	ND	0	10
Arsenic	12.1	15.4J	NA	10
Cadmium	ND	ND	0	10
Chromium	74.1	80.6	9	10
Copper	40.6	41.9	3	10
Lead	23.3	25.8J	NA	10
Nickel	61.8	67.5	9	10
Zinc	79.1	90.8	15*	10