



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



May 5, 2004

DAIM-BO-A-HA

Subject: Forwarding addenda to the *Draft 1999 Interim Removal Action Data Report (IRADR), BRAC Property, Hamilton Army Airfield, April 2000*.

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

Dear Ms. Feger,

The Army is pleased to provide addenda to the *Draft 1999 Interim Removal Action Data Report (IRADR), BRAC Property, Hamilton Army Airfield, April 2000*, for your files.

In 1999, interim removal actions were accomplished at Buildings 35 and 82. The confirmation sample results in the 1999 IRADR indicated that additional sampling should be conducted at Building 82. Guidance for the additional sampling was provided through informal discussions and input from the RWQCB and other agencies. The sampling at Building 82 was performed in accordance with the *Field Sampling Plan for Building 82 and HDPE Debris Stockpile; Hamilton Army Airfield; Novato, CA* (Cerrudo 2002). The additional sampling at Building 82 is complete and is documented in the *Field Data Report, HDPE Stockpile and Building 82 Investigation, Hamilton Army Airfield, Novato, CA* (Cerrudo 2004). The 1999 IRADR confirmation sampling results also indicated that soils impacted by total DDTs greater than 1ppm exist adjacent to the Building 35 outfall pipeline. Soils with total DDTs greater than 1 ppm are required to be excavated and disposed of off-site according to the *Main Airfield Parcel Record of Decision/ Remedial Action Plan; Hamilton Army Airfield, Novato, CA* (Dept. of Army, RWQCB, DTSC 2003). Additional sampling at Building 35 was performed in accordance with the *Work Plan Miscellaneous Site Investigations; Hamilton Army Airfield, Novato, CA* and Addendum (USACE 2004). The enclosed addendum documents the additional sampling at Building 35 and provides sufficient information to plan any future remedial actions.

No formal comments were received on the 1999 IRADR, however one correction is needed to Table A-8. The units of measurement were inadvertently reported as milligrams per liter instead of micrograms per liter. Please pen the change on all three pages of Table A-8. With these addenda and changes, the Army considers the 1999 IRADR now to be a final report.

Included in the enclosures are:

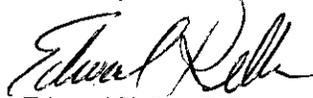
1. A new cover page and spine for the report indicating the report is Final
2. A new title page
3. A "Summary of Actions" describing the additional sampling that the Army performed at Building 35 and Building 82. This summary refers the reader to the report for the Building 82 and to the Addendum for Building 35.
4. An addendum to the 1999 IRADR, reporting the findings of the additional sampling for DDTs at Building 35 performed in November 2003 and January 2004

Please take the following actions with the enclosures:

1. Replace the cover page and spine on your binder
2. Insert the new title page and Summary of Actions in front of the current draft title page
3. Insert the Building 35 Addendum into the back of your copy of the 1999 Interim Removal Action Draft Data Report
4. Change the units of measurement on table A-8 from milligrams per liter to micrograms per liter on all three pages.

If you have any questions, please contact me at (415) 883-6386.

Sincerely,



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

Enclosures

Copies Furnished:

J. Chesnutt (USEPA)
L. McMahan (DTSC)
J. Yamamoto (CDFG)
L. Sullivan (NOAA)
B. Stanton (FWS)

Distribution List
Final 1999 IRADR Addendum
Hamilton Army Airfield, Novato, CA 94949
May 2004

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Final 1999 IRADR Addendum
Hamilton Army Airfield, Novato, CA 94949
May 2004

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ADDENDUM to
1999 Interim Removal Action Data Report, BRAC Property
Hamilton Army Airfield
NOVATO, CALIFORNIA



Building 35 and Surrounding Area

Prepared by:



**US Army Corps
of Engineers** ®

Sacramento District
Environmental Design Section

Prepared for:



Department of the Army
Base Realignment and Closure

MAY 2004

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Appendix: Laboratory Data Packages

ACRONYMS

B35	Building 35
bgs	below ground surface
BRAC	Base Realignment and Closure program
DDD	4,4'-Dichlorodiphenyldichloroethylene
DDE	4,4'-Dichlorodiphenyldichloroethane
DDT	4,4'-Dichlorodiphenyltrichloroethane
DoD	Department of Defense
DTSC	California State Department of Toxic Substances Control
HAAF	Hamilton Army Airfield
IRA	Interim Removal Action
mg/kg	milligrams per kilogram
QAPP	Quality Assurance Project Plan
ROD/RAP	Record of Decision/Remedial Action Plan
RWQCB	California State Regional Water Quality Control Board
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WP	Work Plan

**REPORT ADDENDUM to
1999 Interim Removal Action Report, BRAC Property
HAMILTON ARMY AIRFIELD**

1.0 INTRODUCTION

The former Hamilton Army Airfield (HAAF) in Novato, California has been owned and operated by various branches of the Department of Defense (DoD) from 1932 to September 2003. The Army is responsible for environmental remediation at HAAF as the DoD owner of the property at the time of closure under the Base Realignment and Closure (BRAC) Act of 1988. The activities performed at HAAF by the Army since 1988 are intended to advance the environmental closure and transfer of the HAAF property. Building 35 houses a pump, which directs water through a pipeline from the in-board area of HAAF to the outboard drainage ditch on the bay side of the levee. The water in the outboard drainage ditch flows into San Pablo Bay. The Building 35 area location within Hamilton Army Airfield is illustrated in Figure 1-2 of the original 1999 IRA Data Report. An Interim Removal Action (IRA) was performed in 1999 near Building 35 as described in *1999 Interim Removal Action Data Report, BRAC Property, Hamilton Army Airfield* (IT Corp. 2000). The IRA activities included contaminated soil excavation, backfilling to original grade, and sampling for confirmation and waste characterization. The 1999 excavation was centered on an above ground fuel tank at this location. One of the sidewall confirmation samples, adjacent to the outfall pipeline, had an elevated detection of DDT.

The U.S. Army Corps of Engineers (USACE), Environmental Engineering Branch conducted additional sampling and analysis in November 2003 and January 2004. This sampling was accomplished to determine the extent of the elevated total DDT concentrations (defined as the sum of 4,4'-Dichlorodiphenyltrichloroethane (DDT), 4,4'-Dichlorodiphenyldichloroethylene (DDD) and 4,4'-Dichlorodiphenyldichloroethane (DDE)) at the location of the previous confirmation sample. Samples were collected below the pipeline and on the other side of the pipeline at four and a half to six feet below ground surface, where the previous high concentration was reported. The results of this sampling are being reported as an addendum to the previous report so that all information on this site will be in one document. The sampling was conducted in accordance with the *Work Plan, Miscellaneous Site Investigations, Hamilton Army Airfield* (USACE 2004). The investigation was designed to collect the data necessary to determine the extent of total DDT soil contamination above both the Record of Decision/Remedial Action Plan (ROD/RAP) action goal and the 1 mg/kg concentration requiring excavation with off-site disposal. The decisions are based upon the agreements and action goals in the *Record of Decision/ Remedial Action Plan (ROD/RAP)* (Army, DTSC, RWQCB 2003) and the US Fish and Wildlife Service Biological Opinion (USFWS 2003).

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

2.0 SAMPLING STRATEGY AND ASSOCIATED FIELD ACTIVITIES

The Building 35 area will become part of a planned future wetland and soil with total DDTs greater than 1 mg/kg is required to be removed from the site prior to wetland construction. Soil with a total DDT concentration greater than 1 mg/kg was reported in Sample B35E-CS-002 adjacent to the pipeline east of Building 35 during the IRA. This and all sample locations are illustrated in the attached figure entitled "Building 35 Area Sample Locations and Results." The locations of the previous samples are considered approximate because they were not surveyed; however, the edge of the excavation is still visible today and was used in locating the new samples. Sampling and analysis was conducted in November 2003 and January 2004 by USACE to determine the extent of total DDT concentrations that exceed 1 mg/kg. Samples were collected with a Geoprobe direct push sampling rig. The samples were collected from below the estimated location of the previous sample and at five-foot step outs along the pipeline and on the other side of the pipeline as illustrated in the addendum figure. All samples collected in November 2003 were analyzed by an off-site laboratory using Method 8081A. Additional samples were collected in January 2004 to delineate the extent of total DDTs that were detected in sample HAAF-B35-713-4.5. These additional samples were collected at multiple depths and at an additional five-foot step out towards Building 35. Samples collected in January 2004 were analyzed by USACE chemists at HAAF using an immunoassay field test kit (USEPA Method 4042) produced by Strategic Diagnostics, Incorporated, based in Newark, Delaware. A select number of samples were split and sent to an off-site laboratory for verification by USEPA Method 8081A.

Ten samples were collected from five locations at various depths and analyzed for total DDTs. Depth was determined from the current ground surface adjacent to the previous excavation, which has not changed since the IRA. The maximum depth of sample collection was six feet and the minimum was four and a half feet. All samples were collected as specified in the work plan, except that one boring (containing samples HAAF-B35-777-4.5FT, HAAF-B35-687-5FT, and HAAF-B35-688-5.5FT) was moved 6 inches to achieve adequate soil recovery and obtain a representative soil sample.

LEGEND

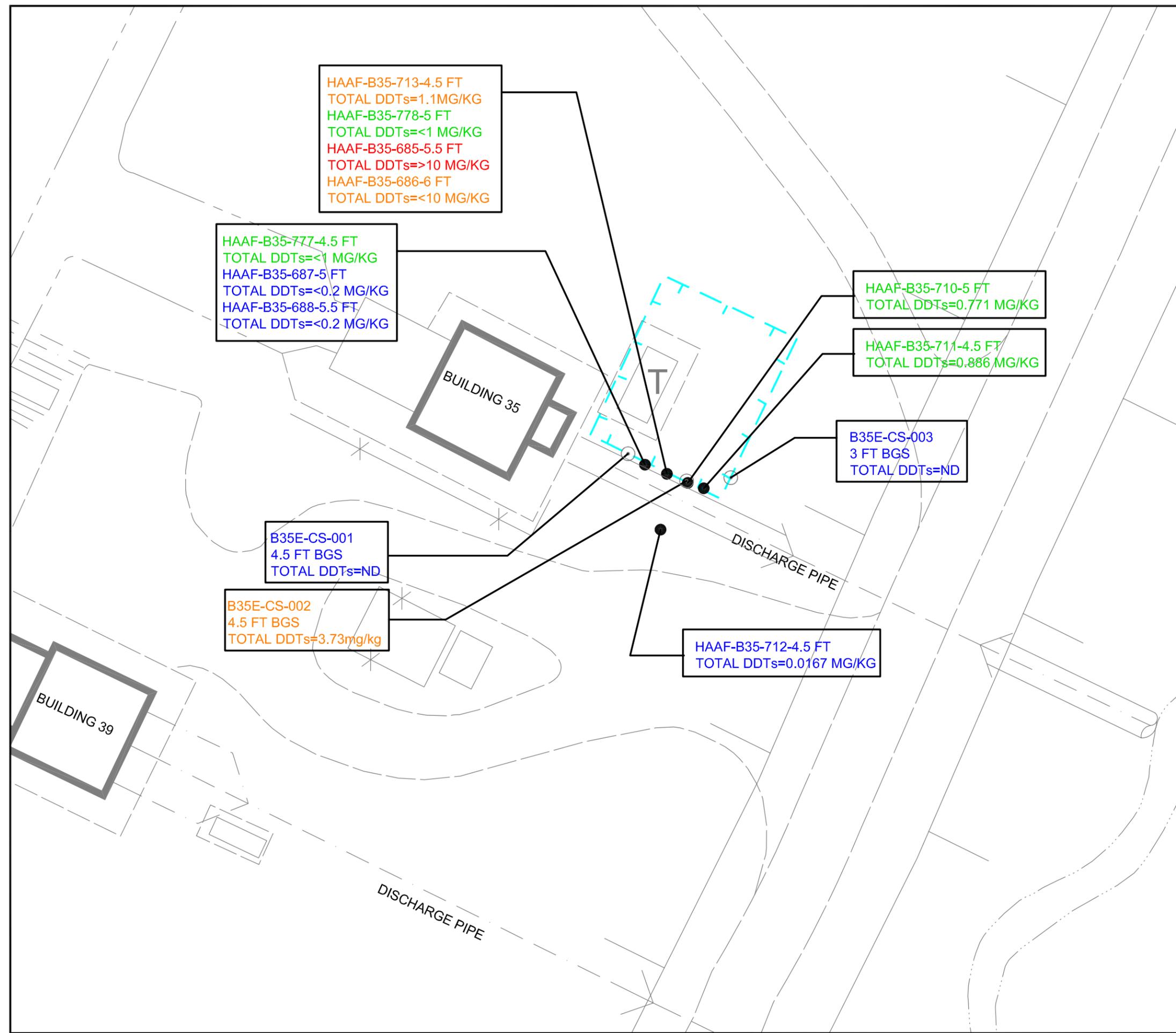
-  B35E-CS-001 APPROXIMATE HISTORICAL CONFIRMATION SAMPLE LOCATION
-  CONCRETE SUMP
-  FENCE
-  BOUNDARY OF PREVIOUS EXCAVATION
-  SAMPLE LOCATION
- HAAF-B41PD TOTAL DDTs GREATER THAN 10 MG/KG
- HAAF-B41PD TOTAL DDTs LESS THAN 10 MG/KG, GREATER THAN 1 MG/KG
- HAAF-B41PD TOTAL DDTs LESS THAN 1 MG/KG, GREATER THAN 0.2 MG/KG
- HAAF-B41PD TOTAL DDTs LESS THAN 0.2 MG/KG
- BGS BELOW GROUND SURFACE



U.S. ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

BUILDING 35 AREA SAMPLE LOCATIONS AND RESULTS

BRAC PROPERTY
HAMILTON ARMY AIRFIELD



3.0 RESULTS

Analytical results are listed below and on the addendum figure. Both definitive and screening data were used during the two sampling events. Screening results do not provide specific sample concentrations – only ranges between selected concentrations of 0.2 mg/kg, 1.0 mg/kg, and 10 mg/kg. Results are reported as less than or greater than these values. Results such as “<1, >0.2” indicate that the total DDT concentration in the sample is between 0.2 and 1.0 mg/kg. Results reported as “<0.2” cannot be compared to the ROD/RAP or Biological Opinion action goal because this lowest concentration is greater than the 0.024 mg/kg action goal. Bolded results in the following table are known to exceed the action goal. Bolded and italicized results exceed the concentration above which soil will require excavation with off-site disposal prior to wetlands construction. The depth of each sample in feet below ground surface (bgs) is noted at the end of each Sample Identification Number (e.g., HAAF-B35-710-5 was collected from a depth of 5 feet bgs).

Sample Identification Number	Method	Method Type	Constituent	Result (mg/kg)	ROD/RAP Action Goal (mg/kg)	BRAC Removal Concentration (mg/kg)
HAAF-B35-710-5	8081A	Definitive	TOTAL DDT	0.771	0.024	1.0
HAAF-B35-711-4.5	8081A	Definitive	TOTAL DDT	0.886	0.024	1.0
HAAF-B35-712-4.5	8081A	Definitive	TOTAL DDT	0.0167	0.024	1.0
HAAF-B35-713-4.5	8081A	Definitive	TOTAL DDT	1.1	0.024	1.0
HAAF-B35-778-5FT	4042	Screening	TOTAL DDT	<1, >0.2	0.024	1.0
HAAF-B35-685-5.5FT	4042	Screening	TOTAL DDT	>10	0.024	1.0
HAAF-B35-762-V	8081A	Verification		12.6		
HAAF-B35-686-6FT	4042	Screening	TOTAL DDT	<10, >1	0.024	1.0
HAAF-B35-777-4.5FT	4042	Screening	TOTAL DDT	<1, >0.2	0.024	1.0
HAAF-B35-760-V	8081A	Verification		0.18 J+		
HAAF-B35-687-5FT	4042	Screening	TOTAL DDT	<0.2	0.024	1.0
HAAF-B35-761-V	8081A	Verification		0.026		
HAAF-B35-688-5.5FT	4042	Screening	TOTAL DDT	<0.2	0.024	1.0

Verification samples listed above are from the same location and depth as the sample listed immediately above it. The comparison of the screening results and the verification sample results verify the acceptability of the screening results to meet the objective of determining the extent of contamination above 1 mg/kg. The verification sample results are not presented on the figure. Laboratory data packages are included in the appendix.

4.0 CONCLUSIONS

Eight of the ten samples from five locations in the Building 35 area sampled during the recent field events are known to have exceeded the ROD/RAP action goal. A total of four samples from two of the locations contained total DDT that exceeded the ROD/RAP action goal and the concentration requiring excavation with off-site disposal. The lateral extent of total DDT contamination greater than 1 mg/kg has been defined. The vertical extent at one location (HAAF-B35-686-6FT) was not defined.

5.0 REFERENCES

- Army, DTSC, RWQCB 2003. *Main Airfield Parcel Record of Decision/Remedial Action Plan, Hamilton Army Airfield*, Public Comment Final, August 2003.
- IT Corporation 2000. *1999 Interim Removal Action Data Report, BRAC Property, Hamilton Army Airfield*, Revision B, April 2000.
- USACE 2004. *Work Plan, Miscellaneous Site Investigations, Hamilton Army Airfield*, Final, January 2004.
- 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 (USFWS) 2003. Biological Opinion and amending letter, August 2003 and September 2003.

APPENDIX

Laboratory Data Packages

CHAIN OF CUSTODY RECORD

US ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
 Environmental Engineering Branch
 SPK-ED-E
 1325 J Street
 Sacramento, California
 95814-2922

Project Name: MISCELLANEOUS SITES INVESTIGATION
Laboratory: APCL
Project Location: HAMILTON AAF, BUILDING 35
Address: 13760 MAGNOLIA
Project Coordinator: KATHY SIEBENMANN
City/State/Zip: CHINO CA 91710
Phone: 916-557-7180 **FAX:**
Contact: ERIC WENDLAND
Sampler: HUGO ASHLEY
Phone: 415-883-6386
Phone: 909-590-1828

SAMPLE IDENTIFICATION		ANALYSIS REQUESTED →			MS/MSD	TURN AROUND TIME (DAYS)	MATRIX CODE	NUMBER OF				PRESERVATIVE CODE
Field	Laboratory	GRAB	COMP	DATE 2003				TIME	PLASTIC	GLASS	VOA	
HAAF-B35-710-5		✓		11/19	1336		S	1				
HAAF-B35-711-4.5		✓		11/19	1354		S	1				
HAAF-B35-712-4.5		✓		11/19	1406		S	1				
HAAF-B35-713-4.5		✓		11/19	1345		S	1				
6259												

COMMENTS/SPECIAL INSTRUCTIONS:

CHECKED BY: AZ

PRESERVATIVE CODES:
 C = HCl N = HNO₃ S = H₂SO₄

SAMPLE DISPOSAL:
 Hold Dispose Return

MATRIX CODES:
 W = Water SI = Sludge SP = Solid Product
 S = Soil A = Air LP = Liquid Product
 Sd = Sediment

SHIPPING:
 Fed Ex Courier Hand Deliver
 Airbill Number: 8386 0625 3639

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
<i>[Signature]</i>	11/20/03 12:00	<i>[Signature]</i>	11/21/03 09:30

Sample Receiving Checklist

APCL ServiceID: **6259** Client Name/Project: Hamilton

1. Sample Arrival

Date/Time Received 11/21/03 0930 Date/Time Opened 11/21/03 0930 By (name): ERIC
Custody Transfer: Client Golden State UPS US Mail FedEx APCL Empl: _____

2. Chain-of-Custody (CoC)

With Samples? Faxed? Client has Copy? Signed, dated? By: _____
 Project ID? Analyses Clear? Hold Samples? #on Hold _____ # Received _____
 CoC/Docs Zip-Locked under lid? Compos.#: _____ #Samples OK? _____
 Discrepancies? Client notified? Response (attach docs): _____

3. Shipping Container/Cooler

Cooler Used? # of 1 Cooled by: Ice Blue Ice Dry Ice None
Temp °C 4.7
(Cooler temperature measured from temp blank if present, otherwise measured from the cooler).
Cooler Custody Seal? Absent Intact Tampered?

4. Sample Preservation

pH <2 pH >12
If Not, pH = _____ Preserved by: Client APCL Third Party _____

5. Holding-time Requirements

pH 24hr BACT 6/24hr Cr^{VI} 24hr NO₃⁻ 48hr BOD 48hr
 Cl₂ ASAP Turbidity 48hr DO ASAP Fe(II) ASAP
 HT Expired? Client notified?

6. Sample Container Condition

Intact? Broken? Documented? Number: _____
Type: plastic glass Tube: brass/SS Tedlar Bag
 Quantity OK? Leaking? Anomaly?
 Caps tight? Air Bubbles? Anomaly?
Labels: Unique ID? Date/Time Preserved?

7. Turn Around Time

RUSH TAT: 5 Std (7-10 days) Not Marked

8. Sample Matrix

Drinking H₂O Other Liq Soil Wipe Polymer Air Other: _____
 Ground H₂O Sludge Filter Oil/Petro Paint W. Water Extract Unknown

9. Pre-Login Check List Completed & OK?

ALL OK? (if not, attach docs) Client Contact? (Name: _____) Date/Time: _____
Received/Checked by: _____ Printed: 21 Nov 2003 7:29 a.m.

*HT: Samples must be analyzed for results to reflect total concentrations. Results generated outside required of holding times are considered minimal values and may be used to define waste as hazardous but not as non-hazardous.

Submitted to:

U.S. Army Corps of Engineers

Attention: Peck Ha

1325 J Street

Sacramento CA 95814-2922

Tel: (916)557-7646 Fax: (916)557-5307

APCL Analytical Report

Service ID #: 801-036259

Received: 11/21/03

Collected by: Hugu Ashley

Extracted: 11/24/03

Collected on: 11/19/03

Tested: 11/21-26/03

Reported: 12/01/03

Sample Description: Soil from Hamilton AAF, Bldg 35

Project Description: Miscellaneous Sites Investigation

Analysis of Soil Samples

Component Analyzed	Method	Unit	PQL	Analysis Result	
				HAAF-B35-710-5 03-06259-1	HAAF-B35-711-4.5 03-06259-2
MOISTURE, PERCENT	D2216	%Moisture	0.5	29.1	20.5
ORGANOCHLORINE PESTICIDES					
Dilution Factor				10	10
4,4'-DDD	SW8081A	µg/kg	0.7	283	181
4,4'-DDE	SW8081A	µg/kg	0.7	200	168
4,4'-DDT	SW8081A	µg/kg	0.7	288	537
TOTAL DDTS	SW8081A	µg/kg	0.7	771	886

Component Analyzed	Method	Unit	PQL	Analysis Result	
				HAAF-B35-712-4.5 03-06259-3	HAAF-B35-713-4.5 03-06259-4
MOISTURE, PERCENT	D2216	%Moisture	0.5	33.4	27.6
ORGANOCHLORINE PESTICIDES					
Dilution Factor				1	10
4,4'-DDD	SW8081A	µg/kg	0.7	3.6	316
4,4'-DDE	SW8081A	µg/kg	0.7	4.6	156
4,4'-DDT	SW8081A	µg/kg	0.7	8.5	628
TOTAL DDTS	SW8081A	µg/kg	0.7	16.7	1,100

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit.

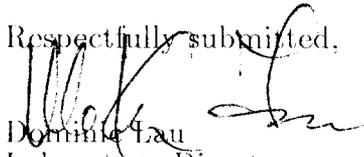
"-": Analysis is not required.

J: Reported between PQL and MDL.

† All results are reported on dry basis for soil samples.

Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

Respectfully submitted,


 Dominic Lau
 Laboratory Director
 Applied P & Ch Laboratory

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

US_0401-
C2/

Reference Case

Client No: **04A097**
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 <i>Teresa M. Roberson</i>	1/17/04 11:15	<i>[Signature]</i>	
2			
3			
4			

For Lab Use Only

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

FOR LAB USE ONLY
Sample Condition On Receipt

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME
1	V HAAF-B35-760- Soil/Sediment	/G	8081A (21)	111 (1)	HAAF-B35-760-V	10:21
2	V HAAF-B35-761- Soil/Sediment	/G	8081A (21)	111 (1)	HAAF-B35-761-V	10:22
3	V HAAF-B35-762- Soil/Sediment	/G	8081A (21)	111 (1)	HAAF-B35-762-V	9:58
4	80 HAAF-B41PD-6 Soil/Sediment	/G	8081A (21)	111 (1)	HAAF-B41PD-680	9:05
5	81-8ft HAAF-B41PD-6 Soil/Sediment	/G	8081A (21)	111 (1)	HAAF-B41PD-681-8ft	9:20
6	82-8ft HAAF-B41PD-6 Soil/Sediment	/G	8081A (21)	111 (1)	HAAF-B41PD-682-8ft	9:10
7	83-8ft HAAF-B41PD-6 Soil/Sediment	/G	8081A (21)	100 (1)	HAAF-B41PD-683-8ft	9:11
8	84-8.5ft HAAF-B41PD-6 Soil/Sediment	/G	8081A (21)	101 (1)	HAAF-B41PD-684-8.5ft	9:24
9	HAAF-FITB-729 Soil/Sediment	/G	SW 6010B (21)	(1)	HAAF-FITB-729	9:10
10	HAAF-FITB-730 Soil/Sediment	/G	SW 6010B (21)	(1)	HAAF-FITB-730	9:14

Shipment for Case Complete? <input type="checkbox"/>	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:
	Concentration: L = Low, M = Low/Medium, H = High 8081A = DDD,DDE,DDT, 8270C SIM = PAH, SW 6010B = Sb, As, Cd, Cr, Cu, Pb, Ni, Zn, SW 7471 = Hg	Type/Designate: Composite = C, Grab = G	Custody Seal Intact? <input checked="" type="checkbox"/>	Shipment Iced? <input checked="" type="checkbox"/>

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	02A097
<input type="checkbox"/> EMAX Courier		Recipient	Jon Lung
<input type="checkbox"/> Client Delivery		Date	1-17-04
<input checked="" type="checkbox"/> Third Party FEDEx	840946764285	Time	1115

COC Inspection

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

Packaging Inspection

Container <input checked="" type="checkbox"/> Cooler	<input type="checkbox"/> Box	<input type="checkbox"/>	<input type="checkbox"/>
Condition <input type="checkbox"/> Custody Seal	<input type="checkbox"/> Intact	<input type="checkbox"/> Damaged	<input type="checkbox"/>
Packaging <input checked="" type="checkbox"/> Bubble Pack	<input type="checkbox"/> Styrofoam	<input checked="" type="checkbox"/> Sufficient	<input checked="" type="checkbox"/> Plastic bag
Temperatures <input checked="" type="checkbox"/> Cooler 3.4°C	<input checked="" type="checkbox"/> Cooler 2 _____	<input type="checkbox"/> Cooler 3 _____	<input type="checkbox"/> Cooler 4 _____
<input type="checkbox"/> Cooler 5 _____	<input type="checkbox"/> Cooler 6 _____	<input type="checkbox"/> Cooler 7 _____	<input type="checkbox"/> Cooler 8 _____
<input type="checkbox"/> Cooler 9 _____	<input type="checkbox"/> Cooler 10 _____	<input type="checkbox"/> Cooler 11 _____	<input type="checkbox"/> Cooler 12 _____

Comments:

LSCID	Client ID	Discrepancy	Corrective Action
A097-24	HAAF-VP00-763-V	DATE = TIME ON LABEL READS 1/14/04, 1622 (NO	USE date & Time from label ↓
-27	HAAF-VP00-506-V	DATE = TIME ON COC)	
-28	HAAF-10W-1-W	DATE = TIME ON LABEL READS 1/16/04, 1400, ALL ANALYSIS ARE RESTD ON EACH CONTAINER (WATER)	

LSCID : Lab Sample Container ID

REVIEWS

Sample Labeling [Signature] SRF [Signature] PM [Signature]

Date 01-17-04 Date 1/21/04 Date 1/21/04

SW3550B/8081A
PESTICIDES

```

=====
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 13:00
Sample ID   : HAAF-B35-761-V                    Date Analyzed: 01/28/04 07:07
Lab Samp ID: A097-02                             Dilution Factor: 1
Lab File ID: SA27037A                           Matrix          : SOIL
Ext Btch ID: CPA018S                             % Moisture      : 11.2
Calib. Ref.: SA27027A                           Instrument ID   : GCT008
=====

```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
4,4'-DDE	(.0058) .0033	.0023	.001 .001
4,4'-DDD	(.006) .006	.0023	.0011 .0011
4,4'-DDT	(.014) .012	.0023	.00071 .00071
TOTAL DDT	(.025) .021	.0023	.00071 .00071

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(102) 95	50-130
DECACHLOROBIPHENYL	(96) 151*	50-150

RL : Reporting limit
Left of | is related to first column ; Right of | related to second column
() included the reported column

SW3550B/8081A
PESTICIDES

```

=====
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 13:00
Sample ID   : HAAF-B35-760-VDL                 Date Analyzed: 01/29/04 05:55
Lab Samp ID: A097-01T                           Dilution Factor: 2
Lab File ID: SA27086A                           Matrix          : SOIL
Ext Btch ID: CPA018S                             % Moisture     : 11.9
Calib. Ref.: SA27080A                           Instrument ID  : GCT008
=====

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PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
4,4'-DDE	.017 (.025)	.0045	.0021 .0021
4,4'-DDD	(.083) .067	.0045	.0022 .0022
4,4'-DDT	.1E (.076)	.0045	.0014 .0014
TOTAL DDT	(.21) .17	.0045	.0014 .0014

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(111) 104	50-130
DECACHLOROBIPHENYL	367* (818*)	50-150

RL : Reporting limit
Left of | is related to first column ; Right of | related to second column
() included the reported column

SW3550B/8081A
PESTICIDES

```

=====
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 13:00
Sample ID   : HAAF-B35-762-VDL                 Date Analyzed: 01/29/04 13:58
Lab Samp ID: A097-03T                           Dilution Factor: 300
Lab File ID: SA27105A                           Matrix          : SOIL
Ext Btch ID: CPA018S                             % Moisture     : 8.5
Calib. Ref.: SA27097A                           Instrument ID  : GCT008
=====

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PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
4,4'-DDE	1.4 (1.6)	.66	.3 .3
4,4'-DDD	(1.8) 1.5	.66	.32 .32
4,4'-DDT	(9.2) 8.1	.66	.21 .21
TOTAL DDT	(12) 11	.66	.21 .21

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	DO DO	50-130
DECACHLOROBIPHENYL	DO DO	50-150

RL : Reporting limit
Left of | is related to first column ; Right of | related to second column
() included the reported column

SW3550B/8081A
PESTICIDES

```

=====
Client      : USACE                               Date Collected: NA
Project     : HAAF, MISC.S.I.                   Date Received: 01/23/04
Batch No.   : 04A097                             Date Extracted: 01/23/04 13:00
Sample ID   : MBLK1S                             Date Analyzed: 01/29/04 00:02
Lab Samp ID: CPA018SB                           Dilution Factor: 1
Lab File ID: SA27072A                           Matrix          : SOIL
Ext Btch ID: CPA018S                             % Moisture      : NA
Calib. Ref.: SA27058A                           Instrument ID   : GCT008
=====

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PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
4,4'-DDE	(ND) ND	.002	.00092 .00092
4,4'-DDD	(ND) ND	.002	.00097 .00097
4,4'-DDT	(ND) ND	.002	.00063 .00063
TOTAL DDT	(ND) ND	.002	.00063 .00063

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(97) 96	50-130
DECACHLOROBIPHENYL	86 (90)	50-150

RL : Reporting limit
Left of | is related to first column ; Right of | related to second column
() included the reported column

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: USACE
 PROJECT: HRAF, MISC.S.I.I.
 BATCH NO.: 04A097
 METHOD: SW3550B/8081A
 =====

MATRIX: SOIL
 DILUTION FACTOR: 1
 SAMPLE ID: MBLK1S
 LAB SAMP ID: CPA018SB
 LAB FILE ID: SA27072A
 DATE EXTRACTED: 01/23/04 13:00
 DATE ANALYZED: 01/29/04 00:02
 PREP. BATCH: CPA018S
 CALIB. REF: SA27058A

LAB FILE ID: SA27031A
 DATE COLLECTED: NA
 DATE RECEIVED: 01/23/04
 CPA018S
 SA27027A

ACCESSION:

PARAMETER	BINK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	% REC	BS % REC	QC LIMIT (%)
4,4'-DDT	(ND) ND	.0133	.00969 (.0107)	73 (80)	40-160	

=====

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	% REC	BS % REC	QC LIMIT (%)
Tetrachloro-m-xylene	.0133	.01 (.0101)	(75) 75	50-130	
Decachlorobiphenyl	.0266	.0218 (.0222)	82 (83)	50-150	

=====

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: USACE
PROJECT: HAAF, MISC.S.I.
BATCH NO.: 04A097
METHOD: SW3520C/8081A

MATRIX: WATER
DILUTION FACTOR: 1 1
SAMPLE ID: MELK1W
LAB SAMP ID: CPA017WB CPA017WC
LAB FILE ID: SA27068A SA27070A
DATE EXTRACTED: 01/22/0418:00 01/22/0418:00
DATE ANALYZED: 01/28/0422:21 01/28/0423:12
PREP. BATCH: CPA017W CPA017W
CALIB. REF: SA27058A SA27058A

ACCESSION:

PARAMETER	BLMK RSLT (ug/L)	BS RSLT (ug/L)	SPIKE AMT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
4,4'-DDT	(ND) ND	.4 (.41) .351	.4	(102) 88	.4	(.408) .351	(102) 88	(0) 0	50-160	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Tetrachloro-m-xylene	.4 (.329) .326	(82) 81	.4	.329 .33	82 .82	82 .82	50-130
Decachlorobiphenyl	.8 .644 .645	80 .81	.8	.652 .648	81 .81	81 .81	60-140