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SUPPLEMENTAL RESOURCE CONSERVATION AND RECOVERY ACT FACILITY INVESTIGATION AND REMEDIAL INVESTIGATION REPORT FOR EIGHT SITES APPENDIX J NAS KEY WEST FL

6/1/1997

BROWN AND ROOT ENVIRONMENTAL

0087

Supplemental RCRA Facility Investigation and Remedial Investigation Report

Appendix J

for

Eight Sites Naval Air Station Key West, Florida

Southern Division Naval Facilities Engineering Command

Contract Number N62467-94-D-0888

Contract Task Order 0007

June 1997

Brown & Root Environmental

Revision 1

7046-23PC

APPENDIX J

AIK-OES-97-5350

SUPPLEMENTAL RCRA FACILITY INVESTIGATION AND REMEDIAL INVESTIGATION REPORT

EIGHT SITES
NAVAL AIR STATION
KEY WEST, FLORIDA

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

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

Submitted by:
Brown & Root Environmental
661 Anderson Drive
Foster Plaza 7
Pittsburgh, Pennsylvania 15220

CONTRACT NUMBER N62467-94-D-0888
CONTRACT TASK ORDER 0007

JUNE 1997

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INORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 23, 1997**
FROM:	**JULEA F. BRADLEY**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA REVIEW – TAL METALS AND CYANIDE**
CTO 007 – KEY WEST, FLORIDA
SDG – 68319W

SAMPLES: 12/aqueous:

RB01080996	I8MW85	I8KMW14
I8KMW15	I8KMW16R	I8MW83
I8DPGW01	I8MW81	I8MW84
I8KMW13R	I8MW86	I8MW82

Overview

The sample set for CTO 007, Key West, SDG 68319W, consists of twelve (12) aqueous environmental samples. One (1) field duplicate pair (I8MW83 / I8DPGW01) is included within this SDG.

All samples were analyzed for Target Analyte List (TAL) metals, only sample RB01080996 was also analyzed for cyanide. The samples were collected by Brown & Root Environmental on August 9, 11, and 12, 1996 and analyzed by General Engineering Laboratory under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- * Calibration Verifications
- * Laboratory Blank Analyses
- Field Duplicate Results
- Matrix Spike Results

*Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/preparation/field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level (aqueous)
aluminum	211.9 ug/L	1059.5 ug/L
arsenic	2.8 ug/L	14.0 ug/L
barium*	0.92 ug/L	4.6 ug/L
beryllium*	0.69 ug/L	3.45 ug/L
cadmium	2.0 ug/L	10.0 ug/L
calcium	13.9 ug/L	69.5 ug/L
chromium*	1.3 ug/L	6.5 ug/L
iron*	39.9 ug/L	199.5 ug/L
lead*	2.1 ug/L	10.5 ug/L
magnesium	29.0 ug/L	145.0 ug/L
manganese*	21.8 ug/L	109.0 ug/L
potassium	66.8 ug/L	334 .0 ug/L
sodium	970.8 ug/L	4,854 ug/L
zinc*	3.2 ug/L	16.0 ug/L

* Maximum concentration found in the field quality control sample.

Samples affected: All

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for arsenic, cadmium, chromium, iron, lead, manganese, and sodium have been qualified as nondetected, "U". No action was taken for the remaining analytes since either the results were greater than the action level or were nondetects. It should be noted that field quality control samples are not qualified for footnoted analytes.

Initial and Continuing Calibration Verifications

Continuing calibration %Rs were above the quality control limit for calcium, magnesium, potassium, and sodium. Positive results for these analytes in all samples were qualified as rejected, "R."

Notes

A comparison of field duplicate pair I8MW83/I8DPGW01 can be found in Appendix C. However, no validation actions are required for field duplicate precision.

It was noted that all environmental field samples were analyzed at a 2X dilution for all analytes except for aluminum, calcium, iron, magnesium, potassium, and sodium. All field samples (soil and rinsate blank) were analyzed at a 1000X dilution for sodium and a 10X dilution for aluminum, calcium, iron, magnesium, and potassium.

It was noted that the initial calibration percent recovery (%R) for cyanide (8.9%) was extremely below the quality control limit. However, no action was warranted for the nondetect in RB01080996 (only positive results would warrant action).

The Matrix Spike (MS) Percent Recovery (%R) for aluminum (143.3 was above the quality control limit. Results for aluminum in all samples were below the detection limit and no validation actions were taken.

It was noted that the Matrix Spike Percent Recovery (%R) for sodium was greatly below the quality control limit. However, no action was warranted because all results were >IDL.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method/ preparation blanks. All results for calcium, magnesium, potassium, and sodium were rejected due to high %R in the continuing calibration verification.

Other Factors Affecting Data Quality: Several analytes were present in the field quality control blank.

The data for these analyses were reviewed in accordance with the "National Functional Guidelines for Inorganic Review," February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality. "I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Julea F. Bradley

Brown & Root Environmental
Julea F. Bradley
Environmental Scientist/Data Validator

Teresa M. Hudson for

Brown & Root Environmental
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

KEY WEST
SDG - 68319W

TABLE 1 - RECOMMENDATION SUMMARY

Aluminum			Magnesium		R^1
Antimony			Manganese	A^1	
Arsenic	A^1		Mercury		
Barium			Nickel		
Beryllium			Potassium		R^1
Cadmium	A^1		Selenium		
Calcium		R^1	Silver		
Chromium	A^1		Sodium	A^1	R^1
Cobalt			Thallium		
Copper			Vanadium		
Iron	A^1		Zinc		
Lead	A^1		Cyanide		

If the field is left blank, the qualifier is A - Accept all data.

A^1 - Accept data but qualify as nondetected, "U," as a result of laboratory blank contamination.

R^1 - Reject positive results, "R, as a result of high CCV %Rs.

APPENDIX A
Qualified Analytical Results

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 68319W

INORGANICS

Sample Number: I8DPGW01
Sample Date: 8/12/96
Laboratory ID: 9608319-07
QC Type: NORMAL
% Moisture: 0
Location: I8DPGW-01

	RESULT	QUAL	UNITS
ALUMINUM	140	U	UG/L
ANTIMONY	6.2		UG/L
ARSENIC	4	U	UG/L
BARIUM	54.3		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	444000	R	UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
IRON	20	U	UG/L
LEAD	8.7	U	UG/L
MAGNESIUM	1260000	R	UG/L
MANGANESE	10	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	422000	R	UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	12000000	R	UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: I8KMW13R
Sample Date: 8/12/96
Laboratory ID: 9608319-10
QC Type: NORMAL
% Moisture: 0
Location: I8KWM-13R

	RESULT	QUAL	UNITS
ALUMINUM	140	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	4	U	UG/L
BARIUM	157		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	490000	R	UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
IRON	20	U	UG/L
LEAD	8.2	U	UG/L
MAGNESIUM	1250000	R	UG/L
MANGANESE	111	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	364000	R	UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	11700000	R	UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: I8KMW14
Sample Date: 8/11/96
Laboratory ID: 9608319-03
QC Type: NORMAL
% Moisture: 0
Location: I8KWM-14

	RESULT	QUAL	UNIT
ALUMINUM	140	U	UG/l
ANTIMONY	4	U	UG/l
ARSENIC	7.2	U	UG/l
BARIUM	48		UG/l
BERYLLIUM	0.2	U	UG/l
CADMIUM	0.4	U	UG/l
CALCIUM	266000	R	UG/l
CHROMIUM	2	U	UG/l
COBALT	2	U	UG/l
COPPER	4	U	UG/l
IRON	20	U	UG/l
LEAD	3	U	UG/l
MAGNESIUM	778000	R	UG/l
MANGANESE	50.6	U	UG/l
MERCURY	0.5		UG/l
NICKEL	4	U	UG/l
POTASSIUM	242000	R	UG/l
SELENIUM	4	U	UG/l
SILVER	2	U	UG/l
SODIUM	6330000	R	UG/l
THALLIUM	4	U	UG/l
VANADIUM	2	U	UG/l
ZINC	2	U	UG/l

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 68319W

INORGANICS

Sample Number: I8KMW15
Sample Date: 8/11/96
Laboratory ID: 9608319-04
QC Type: NORMAL
% Moisture: 0
Location: I8KWM-15

	RESULT	QUAL	UNITS
ALUMINUM	140	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	26.9	U	UG/L
BARIUM	11.2		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	209000	R	UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
IRON	20	U	UG/L
LEAD	5.1	U	UG/L
MAGNESIUM	626000	R	UG/L
MANGANESE	10	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	203000	R	UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	5180000	R	UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: I8KMW16R
Sample Date: 8/11/96
Laboratory ID: 9608319-05
QC Type: NORMAL
% Moisture: 0
Location: I8KWM-16R

	RESULT	QUAL	UNITS
ALUMINUM	140	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	26.6	U	UG/L
BARIUM	36.6		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	353000	R	UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
IRON	20	U	UG/L
LEAD	4.4	U	UG/L
MAGNESIUM	1180000	R	UG/L
MANGANESE	10	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	394000	R	UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	11200000	R	UG/L
THALLIUM	4.3		UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: I8MW81
Sample Date: 8/12/96
Laboratory ID: 9608319-08
QC Type: NORMAL
% Moisture: 0
Location: I8MW8-1

	RESULT	QUAL	UNIT
ALUMINUM	140	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	6.4	U	UG/L
BARIUM	109		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	192000	R	UG/L
CHROMIUM	2	U	UG/L
COBALT	2.2		UG/L
COPPER	4	U	UG/L
IRON	20	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	902000	R	UG/L
MANGANESE	18.9	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	281000	R	UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	8040000	R	UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 68319W

INORGANICS

Sample Number: I8MW82
Sample Date: 8/12/96
Laboratory ID: 9608319-13
QC Type: NORMAL
% Moisture: 0
Location: I8MW8-2

	RESULT	QUAL	UNITS
ALUMINUM	140	U	UG/L
ANTIMONY	13.9		UG/L
ARSENIC	5	U	UG/L
BARIUM	162		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	367000	R	UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
IRON	20	U	UG/L
LEAD	6.8	U	UG/L
MAGNESIUM	1110000	R	UG/L
MANGANESE	10	U	UG/L
MERCURY	0.46		UG/L
NICKEL	4	U	UG/L
POTASSIUM	352000	R	UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	11000000	R	UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: I8MW83
Sample Date: 8/12/96
Laboratory ID: 9608319-06
QC Type: NORMAL
% Moisture: 0
Location: I8MW8-3

	RESULT	QUAL	UNITS
ALUMINUM	140	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	4.6	U	UG/L
BARIUM	55.1		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	446000	R	UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
IRON	20	U	UG/L
LEAD	8.3	U	UG/L
MAGNESIUM	1240000	R	UG/L
MANGANESE	10	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	407000	R	UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	11500000	R	UG/L
THALLIUM	5.9		UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: I8MW84
Sample Date: 8/12/96
Laboratory ID: 9608319-09
QC Type: NORMAL
% Moisture: 0
Location: I8MW8-4

	RESULT	QUAL	UNIT
ALUMINUM	140	U	UG/
ANTIMONY	42.3		UG/
ARSENIC	7.2	U	UG/
BARIUM	179		UG/
BERYLLIUM	0.2	U	UG/
CADMIUM	0.4	U	UG/
CALCIUM	124000	R	UG/L
CHROMIUM	2.1	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
IRON	20	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	944000	R	UG/L
MANGANESE	10	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	316000	R	UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	9460000	R	UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 68319W

INORGANICS

Sample Number: I8MW85
Sample Date: 8/11/96
Laboratory ID: 9608319-02
QC Type: NORMAL
% Moisture: 0
Location: I8MW8-5

	RESULT	QUAL	UNITS
ALUMINUM	140	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	4	U	UG/L
BARIUM	25.7		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	283000	R	UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
IRON	40.2	U	UG/L
LEAD	4.3	U	UG/L
MAGNESIUM	765000	R	UG/L
MANGANESE	10	U	UG/L
MERCURY	0.19		UG/L
NICKEL	4	U	UG/L
POTASSIUM	241000	R	UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	6350000	R	UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: I8MW86
Sample Date: 8/12/96
Laboratory ID: 9608319-12
QC Type: NORMAL
% Moisture: 0
Location: I8MW8-6

	RESULT	QUAL	UNITS
ALUMINUM	140	U	UG/L
ANTIMONY	5		UG/L
ARSENIC	17.1	U	UG/L
BARIUM	81.2		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	167000	R	UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
IRON	313	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	825000	R	UG/L
MANGANESE	22	U	UG/L
MERCURY	0.13		UG/L
NICKEL	4	U	UG/L
POTASSIUM	341000	R	UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	8520000	R	UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: RB01080996
Sample Date: 8/9/96
Laboratory ID: 9608319-01
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNIT
ALUMINUM	140	U	UG/L
ANTIMONY	2	U	UG/L
ARSENIC	2	U	UG/L
BARIUM	0.92		UG/L
BERYLLIUM	0.69		UG/L
CADMIUM	0.71	U	UG/L
CALCIUM	60	U	UG/L
CHROMIUM	1.3		UG/L
COBALT	1	U	UG/L
COPPER	2	U	UG/L
CYANIDE, TOTAL	3	U	UG/L
IRON	39.9		UG/L
LEAD	2.1		UG/L
MAGNESIUM	60	U	UG/L
MANGANESE	21.8		UG/L
MERCURY	0.1	U	UG/L
NICKEL	2	U	UG/L
POTASSIUM	200	U	UG/L
SELENIUM	2	U	UG/L
SILVER	1	U	UG/L
SODIUM	447	U	UG/L
THALLIUM	2	U	UG/L
VANADIUM	1	U	UG/L
ZINC	3.2		UG/L

ORGANIC DATA VALIDATION

TO:	**CHUCK BRYAN**	**DATE:**	**JANUARY 16, 1997**
FROM	**R. MARTY RAY**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA REVIEW - VOA/SVOA/PEST/PCB/HERB ORGANICS**
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG 68319W

SAMPLES: 13/Waters:

RB01-080996	I8MW8-5	I8KMW-14	I8KMW-15
I8KMW-16R	I8MW8-3	I8DPGW-01	I8MW8-1
I8MW8-4	I8KMW-13R	TB01-081296	I8MW8-6
I8MW8-2			

The sample set for the CTO 007 NAS Key West site, SDG 68319W, consists of eleven (11) aqueous environmental samples and one (1) rinsate blank and one (1) trip blank. The samples were analyzed for selected volatile compounds, target semivolatile compounds, plus Target Compound List (TCL) pesticide/PCB and herbicide organic compounds. One field duplicate pair was included in this SDG (I8MW8-3/I8DPGW-01).

The samples were collected by Brown and Root Environmental on August 7th, 9th, 11th, and 12th and September 28th and 29th, 1996 and analyzed by General Engineering Laboratories, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Methods 8240, 602, 8270, 8080 and 8150 analytical and reporting protocols. The data was evaluated according to the following parameters:

- Holding times
- * Initial and continuing calibrations
- * Laboratory and field blank analyses
- Surrogate spike recoveries
- Field Duplicate Precision
- * Compound Quantitation

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Volatiles

No environmental samples were analyzed for the Appendix IX volatile compounds, one trip blank and one rinsate blank were analyzed for these compounds.

Initial calibration Relative Response Factor (RRF) for isobutyl alcohol was reported less than the 0.050 quality control limit. Both positive and nondetected results are affected by this noncompliance. The reported nondetected results for the aforementioned compound are considered unreliable and were rejected (UR), in the affected samples. The affected samples are TB01-081296 and RB01-080996.

Continuing calibration RRF's for vinyl acetate and acrolein were reported less than the 0.050 quality control limit. Both positive and nondetected results are affected by these noncompliances. The reported nondetected results for the aforementioned compounds are considered unreliable and were rejected, (UR), in the affected samples. The affected samples are TB01-081296 and RB01-080996.

The following volatile compounds were detected in the laboratory method blank at the maximum concentrations indicated below:

Compound	Maximum Concentration	Action Level
Methelyne Chloride	2.2 µg/L	22 µg/L
4-Methyl-2-Pentanone	.77 µg/L	3.85 µg/L
Methyl Methacrylate	.69 µg/L	3.45µg/L
Bis(2-Chloro-Isopropyl)Ether	3.2 µg/L	16 µg/L

Samples affected: TB01-081296 and RB01-080996.

No other problems were noted.

Semivolatiles

No problems were noted.

Pesticide/PCBs

The samples were originally analyzed undiluted. However, due to matrix interference, the following samples were reanalyzed at the corresponding dilutions:

I8KMW-14	10x
I8KMW-15	10x
I8KMW-16R	10x
I8MW8-3	10x
I8DPGW-01	50x
I8MW8-1	20x
I8MW8-4	10x
I8KMW-13R	50x
I8MW8-6	5x
I8MW8-2	5x

The laboratory qualifier (P) was removed from the data for sample I8MW8-1 for heptachlor and qualified as estimated (J) due to the %D between the two columns being greater than 100%.

A high %D was reported for gamma-BHC during the continuing calibration on 08/17/96 at 1733. No action was taken since this noncompliance was only reported in one column.

No other problems were noted.

Herbicides

The laboratory qualifier (P) was removed from 2,4,5-TP for sample I8MW8-4. No further action was taken due to the %D between the two columns not being greater than 100%.

The laboratory qualifier (P) was removed from 2,4-D for sample I8MW8-4 and qualified as estimated (J) due to the %D between the two columns being greater than 100%. No further action was taken.

A standard 10x dilution was made on all samples and QC samples. However, samples I8KMW-15 and I8MW8-1 were analyzed 100x and 500x, respectively, due to matrix interference.

A high %D (26%) was reported for 2,4,5-T in column DB-5 of the continuing calibration. However, no action was taken due to a high %D only reported for one column.

No other problems were noted.

Executive Summary

Laboratory Performance: Initial calibration RRF for isobutyl alcohol was reported less than the 0.050 Quality control limit. Continuing calibration RRFs for acrolein and vinyl acetate were reported less than the 0.050 quality control limit. Methelyne chloride, 4-methyl-2-pentanone, methyl methcrylate and bis(2-chloro-isopropyl)ether were reported in volatile laboratory method blanks. One pesticide/PCB compound reported %D above 100%. One pesticide/PCB compound reported %D above 25%, but lower than 100%. Due to matrix interference many samples in the pesticide fraction were reanalyzed at a more diluted concentration. One herbicide compound reported %D above 100%. One herbicide compound reported %D above 25%, but lower than 100%. A standard 10x dilution was made on all samples in the herbicide fraction, however due to matrix interference samples I8KMW and I8MW8-1 were reanalyzed at 100x and 500x respectively.

Other Factors Affecting Data Quality: None

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

R. Marty Ray

Brown and Root Environmental

R. Marty Ray
Environmental Scientist/Data Validator

for

Brown & Root Environmental

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

NAS KEY WEST

SDG 68319W

TABLE 1 - RECOMMENDATION SUMMARY

Sample No.	VOA	SVOA	PEST/PCB	HERB
RB01-080996	$A^1R^1R^2$			
I8MW8-5				
I8KMW-14				
I8KMW-15				
I8KMW-16R				
I8MW8-3				
I8DPGW-01				
I8MW8-1			J^2	
I8MW8-4				J^3 J^1
I8KMW-13R				
TB01-081296	$A^1R^1R^2$			
I8MW8-6				
I8MW8-2				

If the field is left blank, the qualifier is A - Accept all data.

A^1 - Accept data, but change positive results for methylene chloride to a revised detection limit and qualify as nondetected (U), as a result of laboratory method blank contamination.

J^1 Accept data, but qualify a positive result for 2,4-D as estimated (J), as a result of a %D greater than 100%.

J^2 Accept data, but qualify positive result for heptachlor as estimated (J), as a result of a %D greater than 100%.

J^3 Remove laboratory qualifier (P) which indicates a %D above 25% and less than 100% for 2,4,5-TP.

R^1 - Reject, (UR), nondetected results for acrolein, and vinyl acetate, as a result of continuing calibration RRFs less than 0.050.

R^2 - Reject, (UR), nondetected results for isobutyl alcohol, as a result of initial calibration RRFs less than 0.050.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTC 007 - RF WEST
GENERAL E NEERING LABS

SDG: 6831

SEMIVOLATILES

Sample Number: RB01080996
Sample Date: 8/9/96
Laboratory ID: 9608319-01
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
2-SEC-BUTYL-4,6-DINITROPHENOL	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYL PHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-NITROPHENOL	20	U	UG/L
4-NITROQUINOLINE 1-OXIDE	10	U	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A-,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(GHI)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL) ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	50	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	50	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-C,D)PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
M-DINITROBENZENE	10	U	UG/L
M-NITROANILINE	10	U	UG/L
METHAPYRILENE	50	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSODIPROPYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O-CRESOL	10	U	UG/L
O-NITROANILINE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-CRESOL	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-NITROANILINE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L

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SEMIVOLATILES

SAFROLE	10	U	UG/L
SULFOTEPP	10	U	UG/L
SYM-TRINITROBENZENE	50	U	UG/L
THIONAZIN	10	U	UG/L
TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L

CTO 007 - KF WEST
GENERAL F NEERING LABS

SDG: 68319W

VOLATILES

Sample Number: RB01080996
Sample Date: 8/9/96
Laboratory ID: 9608319-01
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHYLENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
1,2-TRANS-DICHLOROETHYLENE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	6	J	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/L
BROMOFORM	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROPRENE	2	U	UG/L
CIS-1,3-DICHLOROPROPYLENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLOROBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
ISOBUTYL ALCOHOL	20	U	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL BROMIDE	2	U	UG/L
METHYL CHLORIDE	2	U	UG/L
METHYL IODIDE	5	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYLENE CHLORIDE	5	U	UG/L
PROPIONITRILE	20	U	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHYLENE	2	U	UG/L
TOLUENE	0.88	J	UG/L
TRANS-1,3-DICHLOROPROPYLENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHYLENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES (TOTAL)	4	U	UG/L

Sample Number: TB01081296
Sample Date: 8/7/96
Laboratory ID: 9608319-11
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNIT
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHYLENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
1,2-TRANS-DICHLOROETHYLENE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	10	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/L
BROMOFORM	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROPRENE	2	U	UG/L
CIS-1,3-DICHLOROPROPYLENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLOROBROMOMETHANE	2	U	UG/L

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VOLATILES

DICHLORODIFLUOROMETHANE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
ISOBUTYL ALCOHOL	20	U	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL BROMIDE	2	U	UG/L
METHYL CHLORIDE	2	U	UG/L
METHYL IODIDE	5	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYLENE CHLORIDE	5	U	UG/L
PROPIONITRILE	20	U	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHYLENE	2	U	UG/L
TOLUENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPYLENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHYLENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES (TOTAL)	4	U	UG/L

CTO 007 - K' 'WEST
GENERAL F· ·INEERING LABS

SDG: 68319W

PESTICIDES/PCBs

Sample Number: 18KMW-16R
Sample Date: 8/11/96
Laboratory ID: 9608319-05
QC Type: NORMAL
% Moisture: 0
Location: 18KWM-16R

	RESULT	QUAL	UNITS
2,4,5-T	0.098	U	UG/L
2,4,5-TP (SILVEX)	0.098	U	UG/L
2,4-D	0.098	U	UG/L

Sample Number: I8DPGW-01
Sample Date: 8/12/96
Laboratory ID: 9608319-07
QC Type: NORMAL
% Moisture: 0
Location: I8DPGW-01

	RESULT	QUAL	UNITS
2,4,5-T	0.098	U	UG/L
2,4,5-TP (SILVEX)	0.098	U	UG/L
2,4-D	0.098	U	UG/L

Sample Number: I8DPGW-01DL1
Sample Date: 8/12/96
Laboratory ID: 9608319-07
QC Type: NORMAL
% Moisture: 0
Location: I8DPGW-01

	RESULT	QUAL	UNIT
4,4'-DDD	2	U	UG/l
4,4'-DDE	2	U	UG/l
4,4'-DDT	2	U	UG/l
ALDRIN	1	U	UG/l
ALPHA-BHC	1	U	UG/l
AROCLOR-1016	6.2	U	UG/l
AROCLOR-1221	6.2	U	UG/l
AROCLOR-1232	6.2	U	UG/L
AROCLOR-1242	6.2	U	UG/L
AROCLOR-1248	6.2	U	UG/L
AROCLOR-1254	6.2	U	UG/L
AROCLOR-1260	6.2	U	UG/L
BETA-BHC	1	U	UG/L
CHLORDANE	12.5	U	UG/L
DELTA-BHC	1	U	UG/L
DIELDRIN	2	U	UG/L
ENDOSULFAN I	1	U	UG/L
ENDOSULFAN II	2	U	UG/L
ENDOSULFAN SULFATE	2	U	UG/L
ENDRIN	2	U	UG/L
ENDRIN ALDEHYDE	2	U	UG/L
GAMMA-BHC (LINDANE)	1	U	UG/L
HEPTACHLOR	1	U	UG/L
HEPTACHLOR EPOXIDE	1	U	UG/L
METHOXYCHLOR	10	U	UG/L
PARATHION	2.5	U	UG/L
PARATHION, METHYL	2.5	U	UG/L
PHORATE	2.5	U	UG/L
TOXAPHENE	50	U	UG/L

SDG: 68319W

PESTICIDES/PCBs

Sample Number: I8KMW-13R
Sample Date: 8/12/96
Laboratory ID: 9608319-10
QC Type: NORMAL
% Moisture: 0
Location: I8KWM-13R

	RESULT	QUAL	UNITS
2,4,5-T	0.098	U	UG/L
2,4,5-TP (SILVEX)	0.098	U	UG/L
2,4-D	0.098	U	UG/L

Sample Number: I8KMW-13RDL1
Sample Date: 8/12/96
Laboratory ID: 9608319-10
QC Type: NORMAL
% Moisture: 0
Location: I8KWM-13R

	RESULT	QUAL	UNITS
4,4'-DDD	2	U	UG/L
4,4'-DDE	2	U	UG/L
4,4'-DDT	2	U	UG/L
ALDRIN	1	U	UG/L
ALPHA-BHC	1	U	UG/L
AROCLOR-1016	6.2	U	UG/L
AROCLOR-1221	6.2	U	UG/L
AROCLOR-1232	6.2	U	UG/L
AROCLOR-1242	6.2	U	UG/L
AROCLOR-1248	6.2	U	UG/L
AROCLOR-1254	6.2	U	UG/L
AROCLOR-1260	6.2	U	UG/L
BETA-BHC	1	U	UG/L
CHLORDANE	12.5	U	UG/L
DELTA-BHC	1	U	UG/L
DIELDRIN	2	U	UG/L
ENDOSULFAN I	1	U	UG/L
ENDOSULFAN II	2	U	UG/L
ENDOSULFAN SULFATE	2	U	UG/L
ENDRIN	2	U	UG/L
ENDRIN ALDEHYDE	2	U	UG/L
GAMMA-BHC (LINDANE)	1	U	UG/L
HEPTACHLOR	1	U	UG/L
HEPTACHLOR EPOXIDE	1	U	UG/L
METHOXYCHLOR	10	U	UG/L
PARATHION	2.5	U	UG/L
PARATHION, METHYL	2.5	U	UG/L
PHORATE	2.5	U	UG/L
TOXAPHENE	50	U	UG/L

Sample Number: I8KMW-14
Sample Date: 8/11/96
Laboratory ID: 9608319-03
QC Type: NORMAL
% Moisture: 0
Location: I8KWM-14

	RESULT	QUAL	UNIT
2,4,5-T	0.098	U	UG/L
2,4,5-TP (SILVEX)	0.098	U	UG/L
2,4-D	0.098	U	UG/L
4,4'-DDD	0.04	U	UG/L
4,4'-DDE	0.04	U	UG/L
4,4'-DDT	0.04	U	UG/L
ALDRIN	0.02	U	UG/L
ALPHA-BHC	0.02	U	UG/L
AROCLOR-1016	0.12	U	UG/L
AROCLOR-1221	0.12	U	UG/L
AROCLOR-1232	0.12	U	UG/L
AROCLOR-1242	0.12	U	UG/L
AROCLOR-1248	0.12	U	UG/L
AROCLOR-1254	0.12	U	UG/L
AROCLOR-1260	0.12	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.25	U	UG/L
DELTA-BHC	0.02	U	UG/L
DIELDRIN	0.04	U	UG/L
ENDOSULFAN I	0.02	U	UG/L
ENDOSULFAN II	0.04	U	UG/L
ENDOSULFAN SULFATE	0.04	U	UG/L
ENDRIN	0.04	U	UG/L
ENDRIN ALDEHYDE	0.04	U	UG/L
GAMMA-BHC (LINDANE)	0.02	U	UG/L
HEPTACHLOR	0.02	U	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.05	U	UG/L
PARATHION, METHYL	0.05	U	UG/L
PHORATE	0.05	U	UG/L
TOXAPHENE	1	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 68319W

PESTICIDES/PCBs

Sample Number: I8KMW-15
Sample Date: 8/11/96
Laboratory ID: 9608319-04
QC Type: NORMAL
% Moisture: 0
Location: I8KWM-15

	RESULT	QUAL	UNITS
2,4,5-T	0.099	U	UG/L
2,4,5-TP (SILVEX)	0.099	U	UG/L
2,4-D	0.099	U	UG/L

Sample Number: I8KMW-15DL1
Sample Date: 8/11/96
Laboratory ID: 9608319-04
QC Type: NORMAL
% Moisture: 0
Location: I8KWM-15

	RESULT	QUAL	UNITS
4,4'-DDD	0.4	U	UG/L
4,4'-DDE	0.4	U	UG/L
4,4'-DDT	0.4	U	UG/L
ALDRIN	0.2	U	UG/L
ALPHA-BHC	0.2	U	UG/L
AROCLOR-1016	1.2	U	UG/L
AROCLOR-1221	1.2	U	UG/L
AROCLOR-1232	1.2	U	UG/L
AROCLOR-1242	1.2	U	UG/L
AROCLOR-1248	1.2	U	UG/L
AROCLOR-1254	1.2	U	UG/L
AROCLOR-1260	1.2	U	UG/L
BETA-BHC	0.2	U	UG/L
CHLORDANE	2.5	U	UG/L
DELTA-BHC	0.2	U	UG/L
DIELDRIN	0.4	U	UG/L
ENDOSULFAN I	0.2	U	UG/L
ENDOSULFAN II	0.4	U	UG/L
ENDOSULFAN SULFATE	0.4	U	UG/L
ENDRIN	0.4	U	UG/L
ENDRIN ALDEHYDE	0.4	U	UG/L
GAMMA-BHC (LINDANE)	0.2	U	UG/L
HEPTACHLOR	0.2	U	UG/L
HEPTACHLOR EPOXIDE	0.2	U	UG/L
METHOXYCHLOR	2	U	UG/L
PARATHION	0.5	U	UG/L
PARATHION, METHYL	0.5	U	UG/L
PHORATE	0.5	U	UG/L
TOXAPHENE	10	U	UG/L

Sample Number: I8KMW-16RDL1
Sample Date: 8/11/96
Laboratory ID: 9608319-05
QC Type: NORMAL
% Moisture: 0
Location: I8KWM-16R

	RESULT	QUAL	UNIT
4,4'-DDD	0.2	U	UG/
4,4'-DDE	0.2	U	UG/
4,4'-DDT	0.2	U	UG/
ALDRIN	0.1	U	UG/
ALPHA-BHC	0.1	U	UG/
AROCLOR-1016	0.62	U	UG/
AROCLOR-1221	0.62	U	UG/
AROCLOR-1232	0.62	U	UG/
AROCLOR-1242	0.62	U	UG/
AROCLOR-1248	0.62	U	UG/
AROCLOR-1254	0.62	U	UG/
AROCLOR-1260	0.62	U	UG/
BETA-BHC	0.1	U	UG/
CHLORDANE	1.2	U	UG/
DELTA-BHC	0.1	U	UG/
DIELDRIN	0.2	U	UG/
ENDOSULFAN I	0.1	U	UG/L
ENDOSULFAN II	0.2	U	UG/L
ENDOSULFAN SULFATE	0.2	U	UG/L
ENDRIN	0.2	U	UG/L
ENDRIN ALDEHYDE	0.2	U	UG/L
GAMMA-BHC (LINDANE)	0.1	U	UG/L
HEPTACHLOR	0.1	U	UG/L
HEPTACHLOR EPOXIDE	0.1	U	UG/L
METHOXYCHLOR	1	U	UG/L
PARATHION	0.25	U	UG/L
PARATHION, METHYL	0.25	U	UG/L
PHORATE	0.25	U	UG/L
TOXAPHENE	5	U	UG/L

SDG: 68319W

PESTICIDES/PCBs

Sample Number: I8MW8-1
Sample Date: 8/12/96
Laboratory ID: 9608319-08
QC Type: NORMAL
% Moisture: 0
Location: I8MW8-1

	RESULT	QUAL	UNITS
2,4,5-T	0.099	U	UG/L
2,4,5-TP (SILVEX)	0.099	U	UG/L
2,4-D	0.099	U	UG/L

Sample Number: I8MW8-1DL1
Sample Date: 8/12/96
Laboratory ID: 9608319-08
QC Type: NORMAL
% Moisture: 0
Location: I8MW8-1

	RESULT	QUAL	UNITS
4,4'-DDD	0.8	U	UG/L
4,4'-DDE	0.8	U	UG/L
4,4'-DDT	0.8	U	UG/L
ALDRIN	0.4	U	UG/L
ALPHA-BHC	0.4	U	UG/L
AROCLOR-1016	2.5	U	UG/L
AROCLOR-1221	2.5	U	UG/L
AROCLOR-1232	2.5	U	UG/L
AROCLOR-1242	2.5	U	UG/L
AROCLOR-1248	2.5	U	UG/L
AROCLOR-1254	2.5	U	UG/L
AROCLOR-1260	2.5	U	UG/L
BETA-BHC	0.4	U	UG/L
CHLORDANE	5	U	UG/L
DELTA-BHC	0.4	U	UG/L
DIELDRIN	0.8	U	UG/L
ENDOSULFAN I	0.4	U	UG/L
ENDOSULFAN II	0.8	U	UG/L
ENDOSULFAN SULFATE	0.8	U	UG/L
ENDRIN	0.8	U	UG/L
ENDRIN ALDEHYDE	0.8	U	UG/L
GAMMA-BHC (LINDANE)	0.4	U	UG/L
HEPTACHLOR	0.62	J	UG/L
HEPTACHLOR EPOXIDE	0.4	U	UG/L
METHOXYCHLOR	4	U	UG/L
PARATHION	1	U	UG/L
PARATHION, METHYL	1	U	UG/L
PHORATE	1	U	UG/L
TOXAPHENE	20	U	UG/L

Sample Number: I8MW8-2
Sample Date: 8/12/96
Laboratory ID: 9608319-13
QC Type: NORMAL
% Moisture: 0
Location: I8MW8-2

	RESULT	QUAL	UNIT
2,4,5-T	0.099	U	UG/
2,4,5-TP (SILVEX)	0.099	U	UG/
2,4-D	0.099	U	UG/

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PESTICIDES/PCBs

Sample Number: I8MW8-2DL1
Sample Date: 8/12/96
Laboratory ID: 9608319-13
QC Type: NORMAL
% Moisture: 0
Location: I8MW8-2

	RESULT	QUAL	UNITS
4,4'-DDD	0.2	U	UG/L
4,4'-DDE	0.2	U	UG/L
4,4'-DDT	0.2	U	UG/L
ALDRIN	0.1	U	UG/L
ALPHA-BHC	0.1	U	UG/L
AROCLOR-1016	0.62	U	UG/L
AROCLOR-1221	0.62	U	UG/L
AROCLOR-1232	0.62	U	UG/L
AROCLOR-1242	0.62	U	UG/L
AROCLOR-1248	0.62	U	UG/L
AROCLOR-1254	0.62	U	UG/L
AROCLOR-1260	0.62	U	UG/L
BETA-BHC	0.1	U	UG/L
CHLORDANE	1.2	U	UG/L
DELTA-BHC	0.1	U	UG/L
DIELDRIN	0.2	U	UG/L
ENDOSULFAN I	0.1	U	UG/L
ENDOSULFAN II	0.2	U	UG/L
ENDOSULFAN SULFATE	0.2	U	UG/L
ENDRIN	0.2	U	UG/L
ENDRIN ALDEHYDE	0.2	U	UG/L
GAMMA-BHC (LINDANE)	0.1	U	UG/L
HEPTACHLOR	0.1	U	UG/L
HEPTACHLOR EPOXIDE	0.1	U	UG/L
METHOXYCHLOR	1	U	UG/L
PARATHION	0.25	U	UG/L
PARATHION, METHYL	0.25	U	UG/L
PHORATE	0.25	U	UG/L
TOXAPHENE	5	U	UG/L

Sample Number: I8MW8-3
Sample Date: 8/12/96
Laboratory ID: 9608319-06
QC Type: NORMAL
% Moisture: 0
Location: I8MW8-3

	RESULT	QUAL	UNITS
2,4,5-T	0.098	U	UG/L
2,4,5-TP (SILVEX)	0.098	U	UG/L
2,4-D	0.098	U	UG/L

Sample Number: I8MW8-3DL1
Sample Date: 8/12/96
Laboratory ID: 9608319-06
QC Type: NORMAL
% Moisture: 0
Location: I8MW8-3

	RESULT	QUAL	UNIT
4,4'-DDD	0.2	U	UG/l
4,4'-DDE	0.2	U	UG/l
4,4'-DDT	0.2	U	UG/l
ALDRIN	0.1	U	UG/l
ALPHA-BHC	0.1	U	UG/l
AROCLOR-1016	0.62	U	UG/l
AROCLOR-1221	0.62	U	UG/l
AROCLOR-1232	0.62	U	UG/l
AROCLOR-1242	0.62	U	UG/l
AROCLOR-1248	0.62	U	UG/l
AROCLOR-1254	0.62	U	UG/l
AROCLOR-1260	0.62	U	UG/l
BETA-BHC	0.1	U	UG/l
CHLORDANE	1.2	U	UG/L
DELTA-BHC	0.1	U	UG/L
DIELDRIN	0.2	U	UG/L
ENDOSULFAN I	0.1	U	UG/L
ENDOSULFAN II	0.2	U	UG/L
ENDOSULFAN SULFATE	0.2	U	UG/L
ENDRIN	0.2	U	UG/L
ENDRIN ALDEHYDE	0.2	U	UG/L
GAMMA-BHC (LINDANE)	0.1	U	UG/L
HEPTACHLOR	0.1	U	UG/L
HEPTACHLOR EPOXIDE	0.1	U	UG/L
METHOXYCHLOR	1	U	UG/L
PARATHION	0.25	U	UG/L
PARATHION, METHYL	0.25	U	UG/L
PHORATE	0.25	U	UG/L
TOXAPHENE	5	U	UG/L

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PESTICIDES/PCBs

Sample Number: I8MW8-4
Sample Date: 8/12/96
Laboratory ID: 9608319-09
QC Type: NORMAL
% Moisture: 0
Location: I8MW8-4

	RESULT	QUAL	UNITS
2,4,5-T	0.1	U	UG/L
2,4,5-TP (SILVEX)	0.26		UG/L
2,4-D	0.48	J	UG/L

Sample Number: I8MW8-4DL1
Sample Date: 8/12/96
Laboratory ID: 9608319-09
QC Type: NORMAL
% Moisture: 0
Location: I8MW8-4

	RESULT	QUAL	UNITS
4,4'-DDD	0.4	U	UG/L
4,4'-DDE	0.4	U	UG/L
4,4'-DDT	0.4	U	UG/L
ALDRIN	0.2	U	UG/L
ALPHA-BHC	0.2	U	UG/L
AROCLOR-1016	1.2	U	UG/L
AROCLOR-1221	1.2	U	UG/L
AROCLOR-1232	1.2	U	UG/L
AROCLOR-1242	1.2	U	UG/L
AROCLOR-1248	1.2	U	UG/L
AROCLOR-1254	1.2	U	UG/L
AROCLOR-1260	1.2	U	UG/L
BETA-BHC	0.2	U	UG/L
CHLORDANE	2.5	U	UG/L
DELTA-BHC	0.2	U	UG/L
DIELDRIN	0.4	U	UG/L
ENDOSULFAN I	0.2	U	UG/L
ENDOSULFAN II	0.4	U	UG/L
ENDOSULFAN SULFATE	0.4	U	UG/L
ENDRIN	0.4	U	UG/L
ENDRIN ALDEHYDE	0.4	U	UG/L
GAMMA-BHC (LINDANE)	0.2	U	UG/L
HEPTACHLOR	0.2	U	UG/L
HEPTACHLOR EPOXIDE	0.2	U	UG/L
METHOXYCHLOR	2	U	UG/L
PARATHION	0.5	U	UG/L
PARATHION, METHYL	0.5	U	UG/L
PHORATE	0.5	U	UG/L
TOXAPHENE	10	U	UG/L

Sample Number: I8MW8-5
Sample Date: 8/11/96
Laboratory ID: 9608319-02
QC Type: NORMAL
% Moisture: 0
Location: I8MW8-5

	RESULT	QUAL	UNIT
2,4,5-T	0.097	U	UG/
2,4,5-TP (SILVEX)	0.097	U	UG/
2,4-D	0.097	U	UG/
4,4'-DDD	0.04	U	UG/
4,4'-DDE	0.04	U	UG/
4,4'-DDT	0.04	U	UG/
ALDRIN	0.02	U	UG/
ALPHA-BHC	0.02	U	UG/
AROCLOR-1016	0.12	U	UG/
AROCLOR-1221	0.12	U	UG/
AROCLOR-1232	0.12	U	UG/
AROCLOR-1242	0.12	U	UG/
AROCLOR-1248	0.12	U	UG/
AROCLOR-1254	0.12	U	UG/
AROCLOR-1260	0.12	U	UG/
BETA-BHC	0.02	U	UG/
CHLORDANE	0.25	U	UG/
DELTA-BHC	0.02	U	UG/
DIELDRIN	0.04	U	UG/
ENDOSULFAN I	0.02	U	UG/
ENDOSULFAN II	0.04	U	UG/
ENDOSULFAN SULFATE	0.04	U	UG/
ENDRIN	0.04	U	UG/
ENDRIN ALDEHYDE	0.04	U	UG/
GAMMA-BHC (LINDANE)	0.02	U	UG/
HEPTACHLOR	0.02	U	UG/
HEPTACHLOR EPOXIDE	0.02	U	UG/
METHOXYCHLOR	0.2	U	UG/
PARATHION	0.05	U	UG/
PARATHION, METHYL	0.05	U	UG/
PHORATE	0.05	U	UG/
TOXAPHENE	1	U	UG/

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PESTICIDES/PCBs

Sample Number: I8MW8-6
Sample Date: 8/12/96
Laboratory ID: 9608319-12
QC Type: NORMAL
% Moisture: 0
Location: I8MW8-6

	RESULT	QUAL	UNITS
2,4,5-T	0.099	U	UG/L
2,4,5-TP (SILVEX)	0.099	U	UG/L
2,4-D	0.099	U	UG/L

Sample Number: I8MW8-6DL1
Sample Date: 8/12/96
Laboratory ID: 9608319-12
QC Type: NORMAL
% Moisture: 0
Location: I8MW8-6

	RESULT	QUAL	UNITS
4,4'-DDD	0.2	U	UG/L
4,4'-DDE	0.2	U	UG/L
4,4'-DDT	0.2	U	UG/L
ALDRIN	0.1	U	UG/L
ALPHA-BHC	0.1	U	UG/L
AROCLOR-1016	0.62	U	UG/L
AROCLOR-1221	0.62	U	UG/L
AROCLOR-1232	0.62	U	UG/L
AROCLOR-1242	0.62	U	UG/L
AROCLOR-1248	0.62	U	UG/L
AROCLOR-1254	0.62	U	UG/L
AROCLOR-1260	0.62	U	UG/L
BETA-BHC	0.1	U	UG/L
CHLORDANE	1.2	U	UG/L
DELTA-BHC	0.1	U	UG/L
DIELDRIN	0.2	U	UG/L
ENDOSULFAN I	0.1	U	UG/L
ENDOSULFAN II	0.2	U	UG/L
ENDOSULFAN SULFATE	0.2	U	UG/L
ENDRIN	0.2	U	UG/L
ENDRIN ALDEHYDE	0.2	U	UG/L
GAMMA-BHC (LINDANE)	0.1	U	UG/L
HEPTACHLOR	0.1	U	UG/L
HEPTACHLOR EPOXIDE	0.1	U	UG/L
METHOXYCHLOR	1	U	UG/L
PARATHION	0.25	U	UG/L
PARATHION, METHYL	0.25	U	UG/L
PHORATE	0.25	U	UG/L
TOXAPHENE	5	U	UG/L

Sample Number: RB01-080996
Sample Date: 8/9/96
Laboratory ID: 9608319-01
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNIT
2,4,5-T	0.099	U	UG/
2,4,5-TP (SILVEX)	0.099	U	UG/
2,4-D	0.099	U	UG/
4,4'-DDD	0.04	U	UG/
4,4'-DDE	0.04	U	UG/
4,4'-DDT	0.04	U	UG/
ALDRIN	0.02	U	UG/
ALPHA-BHC	0.02	U	UG/
BETA-BHC	0.02	U	UG/
CHLORDANE	0.25	U	UG/
DELTA-BHC	0.02	U	UG/
DIELDRIN	0.04	U	UG/
ENDOSULFAN I	0.02	U	UG/
ENDOSULFAN II	0.04	U	UG/
ENDOSULFAN SULFATE	0.04	U	UG/
ENDRIN	0.04	U	UG/
ENDRIN ALDEHYDE	0.04	U	UG/
GAMMA-BHC	0.02	U	UG/
HEPTACHLOR	0.02	U	UG/
HEPTACHLOR EPOXIDE	0.02	U	UG/
METHOXYCHLOR	0.2	U	UG/
PARATHION	0.05	U	UG/
PARATHION, METHYL	0.05	U	UG/
PCB-1016	0.12	U	UG/
PCB-1221	0.12	U	UG/
PCB-1232	0.12	U	UG/
PCB-1242	0.12	U	UG/
PCB-1248	0.12	U	UG/
PCB-1254	0.12	U	UG/
PCB-1260	0.12	U	UG/
PHORATE	0.05	U	UG/
TOXAPHENE	1	U	UG/

INORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 17, 1997**
FROM:	**JULEA F. BRADLEY**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA REVIEW – TAL METALS AND CYANIDE**
CTO 007 – KEY WEST, FLORIDA
SDG – 68422S/W

SAMPLES: 2/aqueous:

FB01082096 RB02081996

11/soil:

I8SS-10	I8SS-9	I8SS-8	I8SS-7
I8SS-5	I8SS-4	I8SS-6	I8SS-1
I8SS-2	I8SS-3	I8DPSS-01	

Overview

The sample set for CTO 007, Key West, SDG 68422S/W, consists of thirteen (13) environmental samples, two (2) aqueous and eleven (11) soil. One (1) field duplicate pair (I8DPSS-01/I8SS-3) is included within this SDG.

The aqueous samples were analyzed for Target Analyte List (TAL) metals and cyanide. The soil samples were analyzed for TAL metals only. The samples were collected by Brown and Root Environmental on August 18, 19, and 20, 1996 and analyzed by General Engineering Laboratory under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

aqueous:
- Data Completeness
- Holding Times
- * Calibration Verifications
- * Laboratory Blank Analyses

soil:
- Data Completeness
- * Holding Times
- * Calibration Verifications
- * Laboratory Blank Analyses
- Field Duplicate Results
- * Matrix Spike Results

* Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/preparation/field quality control blanks at the following maximum concentrations and were used to qualify the soil data:

Analyte	Maximum Concentration	Action Level (soil)
aluminum**	55.8 ug/L	55.8 mg/kg
antimony**	4.4 ug/L	4.4 mg/kg
barium**	17.5 ug/L	17.5 mg/kg
beryllium	0.3 ug/L	0.3 mg/kg
cadmium	0.3 ug/L	0.3 mg/kg
calcium **	40,800 ug/L	40,800 mg/kg
chromium**	1.4 ug/L	1.4 mg/kg
copper**	6.6 ug/L	6.6 mg/kg
iron**	13.4 ug/L	13.4 mg/kg
lead*	0.412 mg/kg	2.06 mg/kg
magnesium**	4,630 ug/L	4,630 mg/kg
manganese**	1.6 ug/L	1.6 mg/kg
potassium**	13,600 ug/L	13,600 mg/kg
selenium	2.6 ug/L	2.6 mg/kg
silver	1.7 ug/L	1.7 mg/kg
sodium**	24,700 ug/L	24,700 mg/kg
thallium **	4.7 ug/L	4.7 mg/kg
vanadium**	1.9 ug/L	1.9 mg/kg
zinc***	1.109 ug/L	1.109 mg/kg

* The maximum concentration found in a soil preparation blank.

** The maximum concentration found in a field quality control blank.

*** The maximum concentration found in an aqueous preparation blank.

Samples affected: All

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for antimony, barium, cadmium, calcium, copper, magnesium, potassium, selenium, sodium, and vanadium have been qualified as nondetected, "U". No action was taken for the remaining analytes since either the results were greater than the action level or were nondetects. It should be noted that field quality control samples are not qualified for field quality control blank contamination for analytes footnoted as "**."

Initial and Continuing Calibration Verifications

Aqueous - The Initial Calibration Verification (ICV) percent recovery (%R) was very low for cyanide (9.2%). Positive aqueous results for cyanide were rejected, (R).

Soil - The Continuing Calibration Verification (CCV) percent recoveries (%Rs) were above quality control limits for calcium, iron, and magnesium. Positive results reported for these analytes were rejected, "R."

CCV %Rs for potassium and sodium were very low. Positive results reported for potassium and sodium were rejected. "R".

Matrix Spike Results

The Matrix Spike (MS) Percent Recovery (%Rs) were below the quality control limits for antimony (15.6%), arsenic (-0.1%), beryllium (2.2%), cadmium (2.0%), chromium (5.1%), cobalt (20.4%), copper (3.1%), lead (19.5%), manganese (-10.5%), selenium (0.2%), silver (2.4%), thallium (0.8%), vanadium (22.7%), and zinc (-101.9%). Results below the detection limit for these analytes reported for soil samples were rejected, "UR."

Notes

It was noted that holding times were exceeded for mercury in all soil samples. Therefore, positive results and nondetects for mercury were qualified as estimated, "J" and "UJ," respectively.

A comparison of field duplicate pair I8DPSS-01/I8SS-3 can be found in Appendix C. However, no validation actions are required for field duplicate imprecision.

The Contract Required Control Limit (CRDL) Standard percent recoveries (%Rs) for chromium, cobalt, manganese, nickel, vanadium, and zinc were outside quality control limits for soil analyses. However, no validation actions were taken for CRDL Standard %Rs.

It was noted that all soil samples were analyzed at a 100 fold dilution for calcium. Samples I8SS-8 and I8SS-7 required a 100 fold dilution for iron analyses, and I8SS-5 required a 100 fold dilution for zinc analysis.

It was noted that, for aqueous analyses, the Continuing Calibration Verification (CCV) %R exceeded the quality control limit for sodium. However, this noncompliance was not great enough to warrant action.

It was noted that, for aqueous analyses, the mercury %R for AA CRDL was below the quality control limit. However, no actions were taken for CRDL %Rs.

It was noted, for soil analyses, that the CCV %Rs for arsenic, barium, cadmium, chromium, cobalt, lead, manganese, nickel, selenium, silver, thallium, vanadium, and zinc exceeded the quality control limits. However, these noncompliances were not great enough to warrant action.

It was noted that MS %R was below the quality control limit for nickel. However, this noncompliance was not great enough to warrant action.

It was noted that several analytes were not included in the matrix spike sample results: calcium, iron, magnesium, potassium, and sodium.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method/ preparation/ field quality control blanks. CCV %Rs were outside control limits for calcium, iron, magnesium, potassium, and sodium for soil analyses. The holding time was exceeded for mercury for all soil samples.

Other Factors Affecting Data Quality: Several analytes were present in the field quality control samples. MS %Rs were outside quality control limits for several analytes.

The data for these analyses were reviewed in accordance with the "National Functional Guidelines for Inorganic Review", February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide " (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality. "I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Julea F Bradley
Brown & Root Environmental
Julea F. Bradley
Environmental Scientist/Data Validator

Teresa M Hudson
Brown & Root Environmental
for Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation.

KEY WEST
SDG – 68422S/W

TABLE 1 - RECOMMENDATION SUMMARY

Aluminum			Magnesium	A^1	R^1
Antimony	A^1	R^3	Manganese		R^3
Arsenic		R^3	Mercury	J^1	
Barium	A^1		Nickel		
Beryllium		R^3	Potassium	A^1	R^2
Cadmium	A^1	R^3	Selenium	A^1	R^3
Calcium	A^1	R^1	Silver		R^3
Chromium		R^3	Sodium	A^1	R^2
Cobalt		R^3	Thallium		R^3
Copper	A^1	R^3	Vanadium	A^1	R^3
Iron		R^1	Zinc	A^1	R^3
Lead		R^3	Cyanide		R^4

If the field is left blank, the qualifier is A - Accept all data.

A^1 - Accept data but qualify as nondetected, "U," as a result of laboratory blank contamination.

J^1 - Accept data but qualify positive results and nondetects as estimated, "J" and "UJ," respectively, as a result of exceeded holding times.

R^1 - Reject positive soil results, "R," as a result of high CCV %Rs.

R^2 - Reject positve soil results, "R," as a result of extremely low CCV %R.

R^3 - Reject nondetected soil data, "UR," as a result of extremely low MS %R.

R^4 - Reject positive aqueous results, "R," as a result of extremely low ICV %R.

APPENDIX A
Qualified Analytical Results

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 68422S

INORGANICS

Sample Number: I8DPSS-01
Sample Date: 8/18/96
Laboratory ID: 9608422-11
QC Type: NORMAL
% Moisture: 43
Location: I8DPSS-01

	RESULT	QUAL	UNITS
ALUMINUM	197		MG/KG
ANTIMONY	0.69	UR	MG/KG
ARSENIC	1.6		MG/KG
BARIUM	8.9	U	MG/KG
BERYLLIUM	0.03	UR	MG/KG
CADMIUM	0.07	UR	MG/KG
CALCIUM	348000	U	MG/KG
CHROMIUM	3.2		MG/KG
COBALT	0.34	UR	MG/KG
COPPER	15.7		MG/KG
IRON	580	R	MG/KG
LEAD	32.1		MG/KG
MAGNESIUM	3720	U	MG/KG
MANGANESE	5.7		MG/KG
MERCURY	0.09	J	MG/KG
NICKEL	1.1		MG/KG
POTASSIUM	472	U	MG/KG
SELENIUM	0.69	UR	MG/KG
SILVER	0.34	UR	MG/KG
SODIUM	11000	U	MG/KG
THALLIUM	0.69	UR	MG/KG
VANADIUM	2.3	UR	MG/KG
ZINC	15.5		MG/KG

Sample Number: I8SS-1
Sample Date: 8/18/96
Laboratory ID: 9608422-08
QC Type: NORMAL
% Moisture: 43
Location: I8SS-1

	RESULT	QUAL	UNITS
ALUMINUM	226		MG/KG
ANTIMONY	0.67	UR	MG/KG
ARSENIC	1.6		MG/KG
BARIUM	8	U	MG/KG
BERYLLIUM	0.03	UR	MG/KG
CADMIUM	0.07	UR	MG/KG
CALCIUM	429000	U	MG/KG
CHROMIUM	3.4		MG/KG
COBALT	0.33	UR	MG/KG
COPPER	14.5		MG/KG
IRON	538	R	MG/KG
LEAD	18.5		MG/KG
MAGNESIUM	3780	U	MG/KG
MANGANESE	6.2		MG/KG
MERCURY	0.06	J	MG/KG
NICKEL	1.2		MG/KG
POTASSIUM	414	U	MG/KG
SELENIUM	0.67	UR	MG/KG
SILVER	0.33	UR	MG/KG
SODIUM	8870	U	MG/KG
THALLIUM	0.67	UR	MG/KG
VANADIUM	2.6	UR	MG/KG
ZINC	0.33	UR	MG/KG

Sample Number: I8SS-10
Sample Date: 8/18/96
Laboratory ID: 9608422-01
QC Type: NORMAL
% Moisture: 21
Location: I8SS-10

	RESULT	QUAL	UNIT
ALUMINUM	1720		MG/K
ANTIMONY	0.49	UR	MG/K
ARSENIC	2.2		MG/K
BARIUM	5.4	U	MG/K
BERYLLIUM	0.02	UR	MG/K
CADMIUM	0.06	UR	MG/K
CALCIUM	378000	U	MG/K
CHROMIUM	4.3		MG/K
COBALT	0.37		MG/K
COPPER	13		MG/K
IRON	5020	R	MG/K
LEAD	16.5		MG/K
MAGNESIUM	2970	U	MG/K
MANGANESE	33.8		MG/K
MERCURY	0.02	UJ	MG/K
NICKEL	2.6		MG/K
POTASSIUM	189	U	MG/K
SELENIUM	0.49	UR	MG/K
SILVER	0.24	UR	MG/K
SODIUM	4290	U	MG/K
THALLIUM	0.49	UR	MG/K
VANADIUM	3.9		MG/K
ZINC	5.2		MG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 68422S

INORGANICS

Sample Number: I8SS-2
Sample Date: 8/18/96
Laboratory ID: 9608422-09
QC Type: NORMAL
% Moisture: 37
Location: I8SS-2

	RESULT	QUAL	UNITS
ALUMINUM	159		MG/KG
ANTIMONY	0.62	UR	MG/KG
ARSENIC	1.3		MG/KG
BARIUM	7.2	U	MG/KG
BERYLLIUM	0.03	UR	MG/KG
CADMIUM	0.06	UR	MG/KG
CALCIUM	384000	U	MG/KG
CHROMIUM	2.3		MG/KG
COBALT	0.31	UR	MG/KG
COPPER	12.7		MG/KG
IRON	279	R	MG/KG
LEAD	18.2		MG/KG
MAGNESIUM	2710	U	MG/KG
MANGANESE	4.7		MG/KG
MERCURY	0.06	J	MG/KG
NICKEL	1.4		MG/KG
POTASSIUM	362	U	MG/KG
SELENIUM	0.62	UR	MG/KG
SILVER	0.31	UR	MG/KG
SODIUM	7910	U	MG/KG
THALLIUM	0.62	UR	MG/KG
VANADIUM	2.9	UR	MG/KG
ZINC	0.31	UR	MG/KG

Sample Number: I8SS-3
Sample Date: 8/18/96
Laboratory ID: 9608422-10
QC Type: NORMAL
% Moisture: 46
Location: I8SS-3

	RESULT	QUAL	UNITS
ALUMINUM	216		MG/KG
ANTIMONY	0.71	UR	MG/KG
ARSENIC	1.7		MG/KG
BARIUM	9.2	U	MG/KG
BERYLLIUM	0.04	UR	MG/KG
CADMIUM	0.07	UR	MG/KG
CALCIUM	349000	U	MG/KG
CHROMIUM	4		MG/KG
COBALT	0.36	UR	MG/KG
COPPER	14.7		MG/KG
IRON	619	R	MG/KG
LEAD	43.3		MG/KG
MAGNESIUM	3900	U	MG/KG
MANGANESE	6.5		MG/KG
MERCURY	0.06	J	MG/KG
NICKEL	1.1		MG/KG
POTASSIUM	479	U	MG/KG
SELENIUM	0.71	UR	MG/KG
SILVER	0.36	UR	MG/KG
SODIUM	11100	U	MG/KG
THALLIUM	0.71	UR	MG/KG
VANADIUM	2.5	UR	MG/KG
ZINC	11.7		MG/KG

Sample Number: I8SS-4
Sample Date: 8/18/96
Laboratory ID: 9608422-06
QC Type: NORMAL
% Moisture: 29
Location: I8SS-4

	RESULT	QUAL	UNIT
ALUMINUM	586		MG/K
ANTIMONY	0.55	UR	MG/K
ARSENIC	1.9		MG/K
BARIUM	7.5	U	MG/K
BERYLLIUM	0.03	UR	MG/K
CADMIUM	0.08	UR	MG/K
CALCIUM	363000	U	MG/K
CHROMIUM	3		MG/K
COBALT	0.27	UR	MG/K
COPPER	7.6	UR	MG/K
IRON	744	R	MG/K
LEAD	15.6		MG/K
MAGNESIUM	2480	U	MG/K
MANGANESE	76.3		MG/K
MERCURY	0.02	UJ	MG/K
NICKEL	1.1		MG/K
POTASSIUM	344	U	MG/K
SELENIUM	0.55	UR	MG/K
SILVER	0.27	UR	MG/K
SODIUM	6290	U	MG/K
THALLIUM	0.55	UR	MG/K
VANADIUM	3.2		MG/K
ZINC	18.9		MG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 68422S

INORGANICS

Sample Number: I8SS-5
Sample Date: 8/18/96
Laboratory ID: 9608422-05
QC Type: NORMAL
% Moisture: 23
Location: I8SS-5

	RESULT	QUAL	UNITS
ALUMINUM	195		MG/KG
ANTIMONY	0.51	UR	MG/KG
ARSENIC	8		MG/KG
BARIUM	6.6	U	MG/KG
BERYLLIUM	0.03	UR	MG/KG
CADMIUM	0.21		MG/KG
CALCIUM	341000	U	MG/KG
CHROMIUM	32.5		MG/KG
COBALT	2.3		MG/KG
COPPER	38.1		MG/KG
IRON	44100	R	MG/KG
LEAD	21.9		MG/KG
MAGNESIUM	2390	U	MG/KG
MANGANESE	230		MG/KG
MERCURY	0.02	UJ	MG/KG
NICKEL	24.9		MG/KG
POTASSIUM	247	U	MG/KG
SELENIUM	1.3	UR	MG/KG
SILVER	0.25	UR	MG/KG
SODIUM	5270	U	MG/KG
THALLIUM	0.51	UR	MG/KG
VANADIUM	5.6		MG/KG
ZINC	2180		MG/KG

Sample Number: I8SS-6
Sample Date: 8/18/96
Laboratory ID: 9608422-07
QC Type: NORMAL
% Moisture: 23
Location: I8SS-6

	RESULT	QUAL	UNITS
ALUMINUM	296		MG/KG
ANTIMONY	0.49	UR	MG/KG
ARSENIC	1.9		MG/KG
BARIUM	11.1	U	MG/KG
BERYLLIUM	0.02	UR	MG/KG
CADMIUM	0.11	UR	MG/KG
CALCIUM	322000	U	MG/KG
CHROMIUM	2.9		MG/KG
COBALT	0.4		MG/KG
COPPER	76.9		MG/KG
IRON	4820	R	MG/KG
LEAD	125		MG/KG
MAGNESIUM	2830	U	MG/KG
MANGANESE	14.3		MG/KG
MERCURY	0.04	J	MG/KG
NICKEL	2.1		MG/KG
POTASSIUM	240	U	MG/KG
SELENIUM	0.49	UR	MG/KG
SILVER	0.25	UR	MG/KG
SODIUM	5550	U	MG/KG
THALLIUM	0.49	UR	MG/KG
VANADIUM	4	UR	MG/KG
ZINC	60.9		MG/KG

Sample Number: I8SS-7
Sample Date: 8/18/96
Laboratory ID: 9608422-04
QC Type: NORMAL
% Moisture: 25
Location: I8SS-7

	RESULT	QUAL	UNIT
ALUMINUM	1410		MG/K
ANTIMONY	8.6		MG/K
ARSENIC	33.9		MG/K
BARIUM	47.8		MG/K
BERYLLIUM	0.03	UR	MG/K
CADMIUM	2		MG/K
CALCIUM	227000	U	MG/K
CHROMIUM	52.5		MG/K
COBALT	8.1		MG/K
COPPER	492		MG/K
IRON	221000	R	MG/K
LEAD	371		MG/K
MAGNESIUM	4520	U	MG/K
MANGANESE	546		MG/K
MERCURY	0.06	J	MG/K
NICKEL	248		MG/K
POTASSIUM	287	U	MG/K
SELENIUM	4.8		MG/K
SILVER	0.63		MG/K
SODIUM	5180	U	MG/K
THALLIUM	0.52	UR	MG/K
VANADIUM	25.7		MG/K
ZINC	707		MG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 68422S

INORGANICS

Sample Number: I8SS-8
Sample Date: 8/18/96
Laboratory ID: 9608422-03
QC Type: NORMAL
% Moisture: 25
Location: I8SS-8

	RESULT	QUAL	UNITS
ALUMINUM	1320		MG/KG
ANTIMONY	1.2	UR	MG/KG
ARSENIC	18.3		MG/KG
BARIUM	12.8	U	MG/KG
BERYLLIUM	0.03	UR	MG/KG
CADMIUM	1.4		MG/KG
CALCIUM	336000	U	MG/KG
CHROMIUM	27.2		MG/KG
COBALT	6.5		MG/KG
COPPER	85.3		MG/KG
IRON	94500	R	MG/KG
LEAD	229		MG/KG
MAGNESIUM	2840	U	MG/KG
MANGANESE	286		MG/KG
MERCURY	0.04	J	MG/KG
NICKEL	29.3		MG/KG
POTASSIUM	208	U	MG/KG
SELENIUM	1.7	UR	MG/KG
SILVER	0.26	UR	MG/KG
SODIUM	4920	U	MG/KG
THALLIUM	0.52	UR	MG/KG
VANADIUM	14.4		MG/KG
ZINC	656		MG/KG

Sample Number: I8SS-9
Sample Date: 8/18/96
Laboratory ID: 9608422-02
QC Type: NORMAL
% Moisture: 25
Location: I8SS-9

	RESULT	QUAL	UNITS
ALUMINUM	479		MG/KG
ANTIMONY	0.52	UR	MG/KG
ARSENIC	4.7		MG/KG
BARIUM	5.2	U	MG/KG
BERYLLIUM	0.03	UR	MG/KG
CADMIUM	0.1	UR	MG/KG
CALCIUM	383000	U	MG/KG
CHROMIUM	11.8		MG/KG
COBALT	1		MG/KG
COPPER	10.4		MG/KG
IRON	19700	R	MG/KG
LEAD	22.7		MG/KG
MAGNESIUM	2440	U	MG/KG
MANGANESE	70.6		MG/KG
MERCURY	0.02	UJ	MG/KG
NICKEL	5.2		MG/KG
POTASSIUM	208	U	MG/KG
SELENIUM	0.52	UR	MG/KG
SILVER	0.26	UR	MG/KG
SODIUM	4320	U	MG/KG
THALLIUM	0.52	UR	MG/KG
VANADIUM	4.9		MG/KG
ZINC	7.6		MG/KG

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 68422W

INORGANICS

Sample Number: FB01082096
Sample Date: 8/20/96
Laboratory ID: 9608422-17
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
ALUMINUM	55.8		UG/L
ANTIMONY	2	U	UG/L
ARSENIC	2	U	UG/L
BARIUM	17.5		UG/L
BERYLLIUM	0.1	U	UG/L
CADMIUM	0.2	U	UG/L
CALCIUM	40800		UG/L
CHROMIUM	1	U	UG/L
COBALT	1	U	UG/L
COPPER	6.6		UG/L
CYANIDE, TOTAL	2.8	R	UG/L
IRON	13.4		UG/L
LEAD	1.5	U	UG/L
MAGNESIUM	4630		UG/L
MANGANESE	1.6		UG/L
MERCURY	0.1	J	UG/L
NICKEL	2	U	UG/L
POTASSIUM	13600		UG/L
SELENIUM	2	U	UG/L
SILVER	1	U	UG/L
SODIUM	24700		UG/L
THALLIUM	2		UG/L
VANADIUM	1.9		UG/L
ZINC	1	U	UG/L

Sample Number: RB02081996
Sample Date: 8/19/96
Laboratory ID: 9608422-12
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
ALUMINUM	27.2		UG/L
ANTIMONY	4.4		UG/L
ARSENIC	2	U	UG/L
BARIUM	0.81		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.2	U	UG/L
CALCIUM	69.6		UG/L
CHROMIUM	1.4		UG/L
COBALT	1	U	UG/L
COPPER	6.5		UG/L
CYANIDE, TOTAL	1.4	U	UG/L
IRON	3.7		UG/L
LEAD	1.5	U	UG/L
MAGNESIUM	6	U	UG/L
MANGANESE	1	U	UG/L
MERCURY	0.1	UJ	UG/L
NICKEL	2	U	UG/L
POTASSIUM	31.3		UG/L
SELENIUM	2	U	UG/L
SILVER	1.5	U	UG/L
SODIUM	614		UG/L
THALLIUM	4.7		UG/L
VANADIUM	1		UG/L
ZINC	1	U	UG/L

ORGANIC DATA VALIDATION

INTERNAL CORRESPONDENCE

TO:	CHUCK BRYAN	DATE:	JANUARY 28, 1997
FROM:	EDWARD A. INABINETT	COPIES:	DV FILE

SUBJECT: ORGANIC DATA REVIEW - VOA/SVOA/PEST/PCB/HERB
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG 68422

SAMPLES: 18/Soil/Water:

I8SS-10	I8SS-4	I8DPSS-01	RB02-081996
I8SS-9	I8SS-6	I8SB-4	FB01-082096
I8SS-8	I8SS-1	I8SB-5	TB02-082096
I8SS-7	I8SS-2	I8SB-6	
I8SS-5	I8SS-3	I8SB-7	

The sample set for the CTO 007 NAS Key West site, SDG 68422, consists of fifteen (15) soil/water environmental samples and three (3) field quality control blanks. Samples were analyzed for Appendix IX volatile and semivolatile compounds, plus the samples were also analyzed for Target Compound List (TCL) pesticide/PCB and herbicide organic compounds. One field duplicate pair was included in this SDG(I8DPSS-01/I8SS-3).

The samples were collected by Brown and Root Environmental on August 7th, 18th, 19th, and 20th, 1996 and analyzed by General Engineering Laboratories, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Methods 8240, 8270, 8080, and 8150 analytical and reporting protocols. The data were evaluated according to the following parameters:

- * Holding times
- GC/MS Tuning
- * Initial and continuing calibrations
- * Laboratory and field blank analyses
- * Compound Quantitation
- Field Duplicate Precision

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Volatiles

The laboratory method blank analysis yielded the following contaminant at the maximum concentration indicated.

Compound	Maximum Concentration	Action Level
toluene	0.10 µg/Kg	0.5 µg/Kg

Percent moisture, sample aliquot size, and dilution factors were considered prior to the application of the action level. Positive results for toluene found below the detection limit have been deleted and replaced by the detection limit value, then qualified as undetected, "U".

The holding time from date of collection to date of extraction was exceeded in RB02-081996, FB01-082096, and TB02-082096. Postive and nondetected results were qualified as estimated "J" and "UJ" respectively.

The inital calibration Relative Response Factor (RRF) for 2-chloro-1,3-butadiene was less than 0.05. Failure to meet this quality control criteria indicates that the laboratory's instruments could not achieve satisfactory sensitivity for this compound, and therefore, the associated positive and nondetected results for this compound is severely compromised. Nondetected results were reported for this compound in samples RB02-081996, FB01-082096, and TB02-082096. These nondetects were considered to be unreliable and were rejected, "UR".

The inital and continuing calibration Relative Response Factor (RRF) for isobutyl alcohol was less than 0.05. Failure to meet this quality control criteria indicates that the laboratory's instruments could not achieve satisfactory sensitivity for this compound, and therefore, the associated positive and nondetected results for this compound is severely compromised. Nondetected results were reported for this compound in samples RB02-081996, FB01-082096, and TB02-082096. These nondetects were considered to be unreliable and were rejected, "UR".

No other problems were noted.

Semivolatiles

Continuing calibration data was not reported for several semivolitale compounds. No action was taken based on unavailable continuing calibration data these semivolatile compounds.

No other problems were noted.

Pesticide/PCBs

The laboratory qualifier "P" was removed from all target compound data with a %D above 25% and less than 100% between positive results on columns 1 and 2.

No other problems were noted.

Herbicides

The holding time from date of collection to date of extraction was exceeded in RB02-081996, FB01-082096, and TB02-082096. Postive and nondetected results were qualified as estimated "J" and "UJ" respectively.

Samples I8SS-1, I8SS-4, I8SS-5, I8SS-6, and I8SS-7 had high %Ds (greater than 100%) between positive results on columns 1 and 2 for several herbicide compounds. Positive results for these compounds were qualified as estimated "J" in these aforementioned samples.

No other problems were noted.

Additional Comments

Volitale and semivolitale fractions only contained field quality control blanks.

Executive Summary

Laboratory Performance: The laboratory method blank analysis yielded toluene as a contaminant in the volatile fraction. The calibration RRFs for 2-chloro-1,3-butadiene and isobutyl alcohol were less than 0.05. Holding times were exceeded for volitale and herbicide fractions.

Other Factors Affecting Data Quality: Several samples had high %Ds between columns 1 and 2 when being analyzed for pesticide compounds. Some samples required dilutions prior to analyses.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Brown and Root Environmental

Edward A. Inabinett
Engineer/Data Validator

for
Brown and Root Environmental

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

NAS KEY WEST

SDG 68422

TABLE 1 - RECOMMENDATION SUMMARY

Sample No.	VOA			BNA			PEST/PCB			HERB		
I8SS-10												
18SS-9												
I8SS-8												
I8SS-7											J^5	
I8SS-5											J^5	
I8SS-4											J^5	
I8SS-6											J^5	
I8SS-1											J^5	
I8SS-2												
I8SS-3												
I8DPSS-01												
I8SB-4								$J^{3,4}$				
I8SB-5								$J^{2,3}$				
I8SB-6								J^3				
I8SB-7								$J^{2,3}$				
RB02-081996	A^1	J^1	$R^{1,2}$							J^1		
FB01-082096	A^1	J^1	$R^{1,2}$							J^1		
TB02-082096	A^1	J^1	$R^{1,2}$							J^1		

If the field is left blank, the qualifier is A - Accept all data.

A^1 - Accept data, but change positive results for toluene to a revised detection limit and qualify as nondetected "U" as a result of laboratory method blank contamination.

J^1 - Accept data, but qualify positive and nondetected results for all compounds in the affected sample as estimated "J" and "UJ" as a result of holding times being exceeded.

J^2 - Accept data, but remove the laboratory qualifier "P" for 4,4'-DDE as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^3 - Accept data, but remove the laboratory qualifier "P" for 4,4'-DDT as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^4 - Accept data, but remove the laboratory qualifier "P" for aroclor 1260 as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^5 - Accept data, but qualify positive results for 2,4-D as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

R^1 - Reject "UR" nondetected results for 2-chloro-1,3-butadiene as a result of initial calibration relative response factors less than 0.050.

R^2 - Reject "UR" nondetected results for isobutyl alcohol as a result of initial and continuing calibration relative response factors less than 0.050.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

SDG: 68422S

PESTICIDES/PCBs

Sample Number: I8DPSS-01
Sample Date: 8/18/96
Laboratory ID: 9608422-11
QC Type: NORMAL
% Moisture: 43
Location: I8DPSS-01

	RESULT	QUAL	UNITS
2,4,5-T	17.4	U	UG/KG
2,4,5-TP (SILVEX)	17.4	U	UG/KG
2,4-D	22.1		UG/KG
4,4'-DDD	2.3	U	UG/KG
4,4'-DDE	2.3	U	UG/KG
4,4'-DDT	2.3	U	UG/KG
ALDRIN	1.2	U	UG/KG
ALPHA-BHC	1.2	U	UG/KG
AROCLOR-1016	7.3	U	UG/KG
AROCLOR-1221	7.3	U	UG/KG
AROCLOR-1232	7.3	U	UG/KG
AROCLOR-1242	7.3	U	UG/KG
AROCLOR-1248	7.3	U	UG/KG
AROCLOR-1254	7.3	U	UG/KG
AROCLOR-1260	7.3	U	UG/KG
BETA-BHC	1.2	U	UG/KG
CHLORDANE	14.5	U	UG/KG
DELTA-BHC	1.2	U	UG/KG
DIELDRIN	2.3	U	UG/KG
ENDOSULFAN I	1.2	U	UG/KG
ENDOSULFAN II	2.3	U	UG/KG
ENDOSULFAN SULFATE	2.3	U	UG/KG
ENDRIN	2.3	U	UG/KG
ENDRIN ALDEHYDE	2.3	U	UG/KG
GAMMA-BHC (LINDANE)	1.2	U	UG/KG
HEPTACHLOR	1.2	U	UG/KG
HEPTACHLOR EPOXIDE	1.2	U	UG/KG
METHOXYCHLOR	11.6	U	UG/KG
PARATHION	2.9	U	UG/KG
PARATHION, METHYL	2.9	U	UG/KG
PHORATE	2.9	U	UG/KG
TOXAPHENE	58.1	U	UG/KG

Sample Number: I8SB-4
Sample Date: 8/20/96
Laboratory ID: 9608422-13
QC Type: NORMAL
% Moisture: 15
Location: I8SB-4

	RESULT	QUAL	UNITS
2,4,5-T	11.6	U	UG/KG
2,4,5-TP (SILVEX)	11.6	U	UG/KG
2,4-D	11.6	U	UG/KG
4,4'-DDD	1.5	U	UG/KG
4,4'-DDE	0.98	J	UG/KG
4,4'-DDT	2.5	J	UG/KG
ALDRIN	0.77	U	UG/KG
ALPHA-BHC	0.77	U	UG/KG
AROCLOR-1016	4.8	U	UG/KG
AROCLOR-1221	4.8	U	UG/KG
AROCLOR-1232	4.8	U	UG/KG
AROCLOR-1242	4.8	U	UG/KG
AROCLOR-1248	4.8	U	UG/KG
AROCLOR-1254	4.8	U	UG/KG
AROCLOR-1260	15.6		UG/KG
BETA-BHC	0.77	U	UG/KG
CHLORDANE	9.7	U	UG/KG
DELTA-BHC	0.77	U	UG/KG
DIELDRIN	1.5	U	UG/KG
ENDOSULFAN I	0.77	U	UG/KG
ENDOSULFAN II	1.5	U	UG/KG
ENDOSULFAN SULFATE	1.5	U	UG/KG
ENDRIN	1.5	U	UG/KG
ENDRIN ALDEHYDE	1.5	U	UG/KG
GAMMA-BHC (LINDANE)	0.77	U	UG/KG
HEPTACHLOR	0.77	U	UG/KG
HEPTACHLOR EPOXIDE	0.77	U	UG/KG
METHOXYCHLOR	7.7	U	UG/KG
PARATHION	1.9	U	UG/KG
PARATHION, METHYL	1.9	U	UG/KG
PHORATE	1.9	U	UG/KG
TOXAPHENE	38.7	U	UG/KG

Sample Number: I8SB-5
Sample Date: 8/20/96
Laboratory ID: 9608422-14
QC Type: NORMAL
% Moisture: 22
Location: I8SB-5

	RESULT	QUAL	UNIT
2,4,5-T	12.8	U	UG/K
2,4,5-TP (SILVEX)	12.8	U	UG/K
2,4-D	12.8	U	UG/K
4,4'-DDD	1.7	U	UG/K
4,4'-DDE	2.8		UG/K
4,4'-DDT	2.8		UG/K
ALDRIN	0.84	U	UG/K
ALPHA-BHC	0.84	U	UG/K
AROCLOR-1016	5.3	U	UG/K
AROCLOR-1221	5.3	U	UG/K
AROCLOR-1232	5.3	U	UG/K
AROCLOR-1242	5.3	U	UG/K
AROCLOR-1248	5.3	U	UG/K
AROCLOR-1254	5.3	U	UG/K
AROCLOR-1260	5.3	U	UG/K
BETA-BHC	0.84	U	UG/K
CHLORDANE	10.6	U	UG/K
DELTA-BHC	0.84	U	UG/K
DIELDRIN	1.7	U	UG/K
ENDOSULFAN I	0.84	U	UG/K
ENDOSULFAN II	1.7	U	UG/K
ENDOSULFAN SULFATE	1.7	U	UG/K
ENDRIN	1.7	U	UG/K
ENDRIN ALDEHYDE	1.7	U	UG/K
GAMMA-BHC (LINDANE)	0.84	U	UG/K
HEPTACHLOR	0.84	U	UG/K
HEPTACHLOR EPOXIDE	0.84	U	UG/K
METHOXYCHLOR	8.4	U	UG/K
PARATHION	2.1	U	UG/K
PARATHION, METHYL	2.1	U	UG/K
PHORATE	2.1	U	UG/K
TOXAPHENE	42.3	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 68422S

PESTICIDES/PCBs

Sample Number: I8SB-6
Sample Date: 8/20/96
Laboratory ID: 9608422-15
QC Type: NORMAL
% Moisture: 14
Location: I8SB-6

	RESULT	QUAL	UNITS
2,4,5-T	11.6	U	UG/KG
2,4,5-TP (SILVEX)	11.6	U	UG/KG
2,4-D	11.6	U	UG/KG
4,4'-DDD	61.5		UG/KG
4,4'-DDE	51.8		UG/KG
4,4'-DDT	120		UG/KG
ALDRIN	7.7	U	UG/KG
ALPHA-BHC	7.7	U	UG/KG
AROCLOR-1016	48.1	U	UG/KG
AROCLOR-1221	48.1	U	UG/KG
AROCLOR-1232	48.1	U	UG/KG
AROCLOR-1242	48.1	U	UG/KG
AROCLOR-1248	48.1	U	UG/KG
AROCLOR-1254	48.1	U	UG/KG
AROCLOR-1260	48.1	U	UG/KG
BETA-BHC	7.7	U	UG/KG
CHLORDANE	96.3	U	UG/KG
DELTA-BHC	7.7	U	UG/KG
DIELDRIN	15.4	U	UG/KG
ENDOSULFAN I	7.7	U	UG/KG
ENDOSULFAN II	15.4	U	UG/KG
ENDOSULFAN SULFATE	15.4	U	UG/KG
ENDRIN	15.4	U	UG/KG
ENDRIN ALDEHYDE	15.4	U	UG/KG
GAMMA-BHC (LINDANE)	7.7	U	UG/KG
HEPTACHLOR	7.7	U	UG/KG
HEPTACHLOR EPOXIDE	7.7	U	UG/KG
METHOXYCHLOR	76.9	U	UG/KG
PARATHION	19.2	U	UG/KG
PARATHION, METHYL	19.2	U	UG/KG
PHORATE	19.2	U	UG/KG
TOXAPHENE	385	U	UG/KG

Sample Number: I8SB-7
Sample Date: 8/20/96
Laboratory ID: 9608422-16
QC Type: NORMAL
% Moisture: 15
Location: I8SB-7

	RESULT	QUAL	UNITS
2,4,5-T	11.7	U	UG/KG
2,4,5-TP (SILVEX)	11.7	U	UG/KG
2,4-D	11.7	U	UG/KG
4,4'-DDD	5.7	J	UG/KG
4,4'-DDE	7.7	U	UG/KG
4,4'-DDT	14.2		UG/KG
ALDRIN	3.9	U	UG/KG
ALPHA-BHC	3.9	U	UG/KG
AROCLOR-1016	24.2	U	UG/KG
AROCLOR-1221	24.2	U	UG/KG
AROCLOR-1232	24.2	U	UG/KG
AROCLOR-1242	24.2	U	UG/KG
AROCLOR-1248	24.2	U	UG/KG
AROCLOR-1254	24.2	U	UG/KG
AROCLOR-1260	85		UG/KG
BETA-BHC	3.9	U	UG/KG
CHLORDANE	48.4	U	UG/KG
DELTA-BHC	3.9	U	UG/KG
DIELDRIN	7.7	U	UG/KG
ENDOSULFAN I	3.9	U	UG/KG
ENDOSULFAN II	7.7	U	UG/KG
ENDOSULFAN SULFATE	7.7	U	UG/KG
ENDRIN	7.7	U	UG/KG
ENDRIN ALDEHYDE	7.7	U	UG/KG
GAMMA-BHC (LINDANE)	3.9	U	UG/KG
HEPTACHLOR	3.9	U	UG/KG
HEPTACHLOR EPOXIDE	3.9	U	UG/KG
METHOXYCHLOR	38.7	U	UG/KG
PARATHION	9.7	U	UG/KG
PARATHION, METHYL	9.7	U	UG/KG
PHORATE	9.7	U	UG/KG
TOXAPHENE	193	U	UG/KG

Sample Number: I8SS-1
Sample Date: 8/18/96
Laboratory ID: 9608422-08
QC Type: NORMAL
% Moisture: 43
Location: I8SS-1

	RESULT	QUAL	UNI
2,4,5-T	17.3	U	UG/
2,4,5-TP (SILVEX)	17.3	U	UG/
2,4-D	27.6	J	UG/
4,4'-DDD	46.2	U	UG/
4,4'-DDE	46.2	U	UG/
4,4'-DDT	46.2	U	UG/
ALDRIN	23.1	U	UG/
ALPHA-BHC	23.1	U	UG/
AROCLOR-1016	144	U	UG/
AROCLOR-1221	144	U	UG/
AROCLOR-1232	144	U	UG/
AROCLOR-1242	144	U	UG/
AROCLOR-1248	144	U	UG/
AROCLOR-1254	144	U	UG/
AROCLOR-1260	144	U	UG/
BETA-BHC	23.1	U	UG/
CHLORDANE	289	U	UG/
DELTA-BHC	23.1	U	UG/
DIELDRIN	46.2	U	UG/
ENDOSULFAN I	23.1	U	UG/
ENDOSULFAN II	46.2	U	UG/
ENDOSULFAN SULFATE	46.2	U	UG/
ENDRIN	46.2	U	UG/
ENDRIN ALDEHYDE	46.2	U	UG/
GAMMA-BHC (LINDANE)	23.1	U	UG/
HEPTACHLOR	23.1	U	UG/
HEPTACHLOR EPOXIDE	23.1	U	UG/
METHOXYCHLOR	231	U	UG/
PARATHION	57.8	U	UG/
PARATHION, METHYL	57.8	U	UG/
PHORATE	57.8	U	UG/
TOXAPHENE	1160	U	UG/

CTO 007 - KEY WEST
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SDG: 68422S

PESTICIDES/PCBs

Sample Number: I8SS-10
Sample Date: 8/18/96
Laboratory ID: 9608422-01
QC Type: NORMAL
% Moisture: 21
Location: I8SS-10

	RESULT	QUAL	UNITS
2,4,5-T	12.6	U	UG/KG
2,4,5-TP (SILVEX)	12.6	U	UG/KG
2,4-D	12.6	U	UG/KG
4,4'-DDD	1.7	U	UG/KG
4,4'-DDE	1.7	U	UG/KG
4,4'-DDT	1.7	U	UG/KG
ALDRIN	0.84	U	UG/KG
ALPHA-BHC	0.84	U	UG/KG
AROCLOR-1016	5.3	U	UG/KG
AROCLOR-1221	5.3	U	UG/KG
AROCLOR-1232	5.3	U	UG/KG
AROCLOR-1242	5.3	U	UG/KG
AROCLOR-1248	5.3	U	UG/KG
AROCLOR-1254	5.3	U	UG/KG
AROCLOR-1260	5.3	U	UG/KG
BETA-BHC	0.84	U	UG/KG
CHLORDANE	10.5	U	UG/KG
DELTA-BHC	0.84	U	UG/KG
DIELDRIN	1.7	U	UG/KG
ENDOSULFAN I	0.84	U	UG/KG
ENDOSULFAN II	1.7	U	UG/KG
ENDOSULFAN SULFATE	1.7	U	UG/KG
ENDRIN	1.7	U	UG/KG
ENDRIN ALDEHYDE	1.7	U	UG/KG
GAMMA-BHC (LINDANE)	0.84	U	UG/KG
HEPTACHLOR	0.84	U	UG/KG
HEPTACHLOR EPOXIDE	0.84	U	UG/KG
METHOXYCHLOR	8.4	U	UG/KG
PARATHION	2.1	U	UG/KG
PARATHION, METHYL	2.1	U	UG/KG
PHORATE	2.1	U	UG/KG
TOXAPHENE	42.1	U	UG/KG

Sample Number: I8SS-2
Sample Date: 8/18/96
Laboratory ID: 9608422-09
QC Type: NORMAL
% Moisture: 37
Location: I8SS-2

	RESULT	QUAL	UNITS
2,4,5-T	15.8	U	UG/KG
2,4,5-TP (SILVEX)	15.8	U	UG/KG
2,4-D	15.8	U	UG/KG
4,4'-DDD	42	U	UG/KG
4,4'-DDE	42	U	UG/KG
4,4'-DDT	42	U	UG/KG
ALDRIN	21	U	UG/KG
ALPHA-BHC	21	U	UG/KG
AROCLOR-1016	131	U	UG/KG
AROCLOR-1221	131	U	UG/KG
AROCLOR-1232	131	U	UG/KG
AROCLOR-1242	131	U	UG/KG
AROCLOR-1248	131	U	UG/KG
AROCLOR-1254	131	U	UG/KG
AROCLOR-1260	131	U	UG/KG
BETA-BHC	21	U	UG/KG
CHLORDANE	263	U	UG/KG
DELTA-BHC	21	U	UG/KG
DIELDRIN	42	U	UG/KG
ENDOSULFAN I	21	U	UG/KG
ENDOSULFAN II	42	U	UG/KG
ENDOSULFAN SULFATE	42	U	UG/KG
ENDRIN	42	U	UG/KG
ENDRIN ALDEHYDE	42	U	UG/KG
GAMMA-BHC (LINDANE)	21	U	UG/KG
HEPTACHLOR	21	U	UG/KG
HEPTACHLOR EPOXIDE	21	U	UG/KG
METHOXYCHLOR	210	U	UG/KG
PARATHION	52.5	U	UG/KG
PARATHION, METHYL	52.5	U	UG/KG
PHORATE	52.5	U	UG/KG
TOXAPHENE	1050	U	UG/KG

Sample Number: I8SS-3
Sample Date: 8/18/96
Laboratory ID: 9608422-10
QC Type: NORMAL
% Moisture: 46
Location: I8SS-3

	RESULT	QUAL	UNI
2,4,5-T	18.4	U	UG/
2,4,5-TP (SILVEX)	18.4	U	UG/
2,4-D	18.4	U	UG/
4,4'-DDD	48.7	U	UG/
4,4'-DDE	48.7	U	UG/
4,4'-DDT	48.7	U	UG/
ALDRIN	24.4	U	UG/
ALPHA-BHC	24.4	U	UG/
AROCLOR-1016	152	U	UG/
AROCLOR-1221	152	U	UG/
AROCLOR-1232	152	U	UG/
AROCLOR-1242	152	U	UG/
AROCLOR-1248	152	U	UG/
AROCLOR-1254	152	U	UG/
AROCLOR-1260	152	U	UG/
BETA-BHC	24.4	U	UG/
CHLORDANE	304	U	UG/
DELTA-BHC	24.4	U	UG/
DIELDRIN	48.7	U	UG/
ENDOSULFAN I	24.4	U	UG/
ENDOSULFAN II	48.7	U	UG/
ENDOSULFAN SULFATE	48.7	U	UG/
ENDRIN	48.7	U	UG/
ENDRIN ALDEHYDE	48.7	U	UG/
GAMMA-BHC (LINDANE)	24.4	U	UG/
HEPTACHLOR	24.4	U	UG/
HEPTACHLOR EPOXIDE	24.4	U	UG/
METHOXYCHLOR	244	U	UG/
PARATHION	60.9	U	UG/
PARATHION, METHYL	60.9	U	UG/
PHORATE	60.9	U	UG/
TOXAPHENE	1220	U	UG/

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 68422S

PESTICIDES/PCBs

Sample Number: I8SS-4
Sample Date: 8/18/96
Laboratory ID: 9608422-06
QC Type: NORMAL
% Moisture: 29
Location: I8SS-4

	RESULT	QUAL	UNITS
2,4,5-T	13.9	U	UG/KG
2,4,5-TP (SILVEX)	13.9	U	UG/KG
2,4-D	58.8	J	UG/KG
4,4'-DDD	9.3	U	UG/KG
4,4'-DDE	9.3	U	UG/KG
4,4'-DDT	9.3	U	UG/KG
ALDRIN	4.6	U	UG/KG
ALPHA-BHC	4.6	U	UG/KG
AROCLOR-1016	29.1	U	UG/KG
AROCLOR-1221	29.1	U	UG/KG
AROCLOR-1232	29.1	U	UG/KG
AROCLOR-1242	29.1	U	UG/KG
AROCLOR-1248	29.1	U	UG/KG
AROCLOR-1254	29.1	U	UG/KG
AROCLOR-1260	29.1	U	UG/KG
BETA-BHC	4.6	U	UG/KG
CHLORDANE	58.1	U	UG/KG
DELTA-BHC	4.6	U	UG/KG
DIELDRIN	9.3	U	UG/KG
ENDOSULFAN I	4.6	U	UG/KG
ENDOSULFAN II	9.3	U	UG/KG
ENDOSULFAN SULFATE	9.3	U	UG/KG
ENDRIN	9.3	U	UG/KG
ENDRIN ALDEHYDE	9.3	U	UG/KG
GAMMA-BHC (LINDANE)	4.6	U	UG/KG
HEPTACHLOR	4.6	U	UG/KG
HEPTACHLOR EPOXIDE	4.6	U	UG/KG
METHOXYCHLOR	46.5	U	UG/KG
PARATHION	11.6	U	UG/KG
PARATHION, METHYL	11.6	U	UG/KG
PHORATE	11.6	U	UG/KG
TOXAPHENE	232	U	UG/KG

Sample Number: I8SS-5
Sample Date: 8/18/96
Laboratory ID: 9608422-05
QC Type: NORMAL
% Moisture: 23
Location: I8SS-5

	RESULT	QUAL	UNITS
2,4,5-T	13	U	UG/KG
2,4,5-TP (SILVEX)	13	U	UG/KG
2,4-D	11	J	UG/KG
4,4'-DDD	17.2	U	UG/KG
4,4'-DDE	17.2	U	UG/KG
4,4'-DDT	17.2	U	UG/KG
ALDRIN	8.6	U	UG/KG
ALPHA-BHC	8.6	U	UG/KG
AROCLOR-1016	53.9	U	UG/KG
AROCLOR-1221	53.9	U	UG/KG
AROCLOR-1232	53.9	U	UG/KG
AROCLOR-1242	53.9	U	UG/KG
AROCLOR-1248	53.9	U	UG/KG
AROCLOR-1254	53.9	U	UG/KG
AROCLOR-1260	53.9	U	UG/KG
BETA-BHC	8.6	U	UG/KG
CHLORDANE	108	U	UG/KG
DELTA-BHC	8.6	U	UG/KG
DIELDRIN	17.2	U	UG/KG
ENDOSULFAN I	8.6	U	UG/KG
ENDOSULFAN II	17.2	U	UG/KG
ENDOSULFAN SULFATE	17.2	U	UG/KG
ENDRIN	17.2	U	UG/KG
ENDRIN ALDEHYDE	17.2	U	UG/KG
GAMMA-BHC (LINDANE)	8.6	U	UG/KG
HEPTACHLOR	8.6	U	UG/KG
HEPTACHLOR EPOXIDE	8.6	U	UG/KG
METHOXYCHLOR	86.3	U	UG/KG
PARATHION	21.6	U	UG/KG
PARATHION, METHYL	21.6	U	UG/KG
PHORATE	21.6	U	UG/KG
TOXAPHENE	431	U	UG/KG

Sample Number: I8SS-6
Sample Date: 8/18/96
Laboratory ID: 9608422-07
QC Type: NORMAL
% Moisture: 23
Location: I8SS-6

	RESULT	QUAL	UNIT
2,4,5-T	12.8	U	UG/K
2,4,5-TP (SILVEX)	12.8	U	UG/K
2,4-D	20.2	J	UG/K
4,4'-DDD	172	U	UG/K
4,4'-DDE	172	U	UG/K
4,4'-DDT	172	U	UG/K
ALDRIN	86.2	U	UG/K
ALPHA-BHC	86.2	U	UG/K
AROCLOR-1016	539	U	UG/K
AROCLOR-1221	539	U	UG/K
AROCLOR-1232	539	U	UG/K
AROCLOR-1242	539	U	UG/K
AROCLOR-1248	539	U	UG/K
AROCLOR-1254	539	U	UG/K
AROCLOR-1260	539	U	UG/K
BETA-BHC	86.2	U	UG/K
CHLORDANE	1080	U	UG/K
DELTA-BHC	86.2	U	UG/K
DIELDRIN	172	U	UG/K
ENDOSULFAN I	86.2	U	UG/K
ENDOSULFAN II	172	U	UG/K
ENDOSULFAN SULFATE	172	U	UG/K
ENDRIN	172	U	UG/K
ENDRIN ALDEHYDE	172	U	UG/K
GAMMA-BHC (LINDANE)	86.2	U	UG/K
HEPTACHLOR	86.2	U	UG/K
HEPTACHLOR EPOXIDE	86.2	U	UG/K
METHOXYCHLOR	862	U	UG/K
PARATHION	216	U	UG/K
PARATHION, METHYL	216	U	UG/K
PHORATE	216	U	UG/K
TOXAPHENE	4310	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 68422S

PESTICIDES/PCBs

Sample Number: I8SS-7
Sample Date: 8/18/96
Laboratory ID: 9608422-04
QC Type: NORMAL
% Moisture: 25
Location: I8SS-7

	RESULT	QUAL	UNITS
2,4,5-T	13.1	U	UG/KG
2,4,5-TP (SILVEX)	13.1	U	UG/KG
2,4-D	17.9	J	UG/KG
4,4'-DDD	12.7	J	UG/KG
4,4'-DDE	17.7	U	UG/KG
4,4'-DDT	17.7	U	UG/KG
ALDRIN	8.8	U	UG/KG
ALPHA-BHC	8.8	U	UG/KG
AROCLOR-1016	55.3	U	UG/KG
AROCLOR-1221	55.3	U	UG/KG
AROCLOR-1232	55.3	U	UG/KG
AROCLOR-1242	55.3	U	UG/KG
AROCLOR-1248	55.3	U	UG/KG
AROCLOR-1254	55.3	U	UG/KG
AROCLOR-1260	55.3	U	UG/KG
BETA-BHC	8.8	U	UG/KG
CHLORDANE	110	U	UG/KG
DELTA-BHC	8.8	U	UG/KG
DIELDRIN	17.7	U	UG/KG
ENDOSULFAN I	8.8	U	UG/KG
ENDOSULFAN II	17.7	U	UG/KG
ENDOSULFAN SULFATE	17.7	U	UG/KG
ENDRIN	17.7	U	UG/KG
ENDRIN ALDEHYDE	17.7	U	UG/KG
GAMMA-BHC (LINDANE)	8.8	U	UG/KG
HEPTACHLOR	8.8	U	UG/KG
HEPTACHLOR EPOXIDE	8.8	U	UG/KG
METHOXYCHLOR	88.4	U	UG/KG
PARATHION	22.1	U	UG/KG
PARATHION, METHYL	22.1	U	UG/KG
PHORATE	22.1	U	UG/KG
TOXAPHENE	442	U	UG/KG

Sample Number: I8SS-8
Sample Date: 8/18/96
Laboratory ID: 9608422-03
QC Type: NORMAL
% Moisture: 25
Location: I8SS-8

	RESULT	QUAL	UNITS
2,4,5-T	13.3	U	UG/KG
2,4,5-TP (SILVEX)	13.3	U	UG/KG
2,4-D	13.3	U	UG/KG
4,4'-DDD	1.8	U	UG/KG
4,4'-DDE	5.2		UG/KG
4,4'-DDT	9.7		UG/KG
ALDRIN	0.88	U	UG/KG
ALPHA-BHC	0.88	U	UG/KG
AROCLOR-1016	5.5	U	UG/KG
AROCLOR-1221	5.5	U	UG/KG
AROCLOR-1232	5.5	U	UG/KG
AROCLOR-1242	5.5	U	UG/KG
AROCLOR-1248	5.5	U	UG/KG
AROCLOR-1254	26.1		UG/KG
AROCLOR-1260	5.5	U	UG/KG
BETA-BHC	0.88	U	UG/KG
CHLORDANE	11	U	UG/KG
DELTA-BHC	0.88	U	UG/KG
DIELDRIN	1.8	U	UG/KG
ENDOSULFAN I	1.3		UG/KG
ENDOSULFAN II	1.8	U	UG/KG
ENDOSULFAN SULFATE	1.8	U	UG/KG
ENDRIN	1.8	U	UG/KG
ENDRIN ALDEHYDE	1.8	U	UG/KG
GAMMA-BHC (LINDANE)	0.88	U	UG/KG
HEPTACHLOR	0.88	U	UG/KG
HEPTACHLOR EPOXIDE	0.88	U	UG/KG
METHOXYCHLOR	8.8	U	UG/KG
PARATHION	2.2	U	UG/KG
PARATHION, METHYL	2.2	U	UG/KG
PHORATE	2.2	U	UG/KG
TOXAPHENE	43.9	U	UG/KG

Sample Number: I8SS-9
Sample Date: 8/18/96
Laboratory ID: 9608422-02
QC Type: NORMAL
% Moisture: 25
Location: I8SS-9

	RESULT	QUAL	UNIT
2,4,5-T	13.2	U	UG/K
2,4,5-TP (SILVEX)	13.2	U	UG/K
2,4-D	13.2	U	UG/K
4,4'-DDD	1.8	U	UG/K
4,4'-DDE	1.8	U	UG/K
4,4'-DDT	1.8	U	UG/K
ALDRIN	0.88	U	UG/K
ALPHA-BHC	0.88	U	UG/K
AROCLOR-1016	5.5	U	UG/K
AROCLOR-1221	5.5	U	UG/K
AROCLOR-1232	5.5	U	UG/K
AROCLOR-1242	5.5	U	UG/K
AROCLOR-1248	5.5	U	UG/K
AROCLOR-1254	5.5	U	UG/K
AROCLOR-1260	5.5	U	UG/K
BETA-BHC	0.88	U	UG/K
CHLORDANE	11	U	UG/K
DELTA-BHC	0.88	U	UG/K
DIELDRIN	1.8	U	UG/K
ENDOSULFAN I	0.88	U	UG/K
ENDOSULFAN II	1.8	U	UG/K
ENDOSULFAN SULFATE	1.8	U	UG/K
ENDRIN	1.8	U	UG/K
ENDRIN ALDEHYDE	1.8	U	UG/K
GAMMA-BHC (LINDANE)	0.88	U	UG/K
HEPTACHLOR	0.88	U	UG/K
HEPTACHLOR EPOXIDE	0.88	U	UG/K
METHOXYCHLOR	8.8	U	UG/K
PARATHION	2.2	U	UG/K
PARATHION, METHYL	2.2	U	UG/K
PHORATE	2.2	U	UG/K
TOXAPHENE	44.1	U	UG/K

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SEMIVOLATILES

Sample Number: FB01-082096
Sample Date: 8/20/96
Laboratory ID: 9608422-17
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
2-SEC-BUTYL-4,6-DINITROPHENOL	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYL PHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-NITROPHENOL	20	U	UG/L
4-NITROQUINOLINE 1-OXIDE	10	U	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A-,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(GHI)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL) ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	50	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	50	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG
HEXACHLOROBUTADIENE	10	U	UG
HEXACHLOROCYCLOPENTADIENE	10	U	UG
HEXACHLOROETHANE	10	U	UG
HEXACHLOROPROPENE	10	U	UG
INDENO(1,2,3-C,D)PYRENE	10	U	UG
ISODRIN	10	U	UG
ISOPHORONE	10	U	UG
ISOSAFROLE	10	U	UG
KEPONE	10	U	UG
M-DINITROBENZENE	10	U	UG
M-NITROANILINE	10	U	UG
METHAPYRILENE	50	U	UG
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSODIPROPYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O-CRESOL	10	U	UG/L
O-NITROANILINE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-CRESOL	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-NITROANILINE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L

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SEMIVOLATILES

PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEPP	10	U	UG/L
SYM-TRINITROBENZENE	50	U	UG/L
THIONAZIN	10	U	UG/L
TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L

Sample Number: RB02-081996
Sample Date: 8/19/96
Laboratory ID: 9608422-12
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
2-SEC-BUTYL-4,6-DINITROPHENOL	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYL PHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-NITROPHENOL	20	U	UG/L
4-NITROQUINOLINE 1-OXIDE	10	U	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A-,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(GHI)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL) ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	50	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	50	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L

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SEMIVOLATILES

HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-C,D)PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
M-DINITROBENZENE	10	U	UG/L
M-NITROANILINE	10	U	UG/L
METHAPYRILENE	50	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSODIPROPYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O-CRESOL	10	U	UG/L
O-NITROANILINE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-CRESOL	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-NITROANILINE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEPP	10	U	UG/L
SYM-TRINITROBENZENE	50	U	UG/L
THIONAZIN	10	U	UG/L
TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L

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VOLATILES

Sample Number: FB01-082096
Sample Date: 8/20/96
Laboratory ID: 9608422-17
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	UJ	UG/L
1,1,1-TRICHLOROETHANE	2	UJ	UG/L
1,1,2,2-TETRACHLOROETHANE	2	UJ	UG/L
1,1,2-TRICHLOROETHANE	2	UJ	UG/L
1,1-DICHLOROETHANE	2	UJ	UG/L
1,1-DICHLOROETHYLENE	2	UJ	UG/L
1,2,3-TRICHLOROPROPANE	2	UJ	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	UJ	UG/L
1,2-DIBROMOETHANE	2	UJ	UG/L
1,2-DICHLOROETHANE	2	UJ	UG/L
1,2-DICHLOROPROPANE	2	UJ	UG/L
1,2-TRANS-DICHLOROETHYLENE	2	UJ	UG/L
2-BUTANONE	5	UJ	UG/L
2-HEXANONE	5	UJ	UG/L
4-METHYL-2-PENTANONE	5	UJ	UG/L
ACETONE	10	UJ	UG/L
ACETONITRILE	10	UJ	UG/L
ACROLEIN	20	UJ	UG/L
ACRYLONITRILE	20	UJ	UG/L
ALLYL CHLORIDE	10	UJ	UG/L
BENZENE	2	UJ	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	UJ	UG/L
BROMOFORM	10.5	J	UG/L
CARBON DISULFIDE	5	UJ	UG/L
CARBON TETRACHLORIDE	2	UJ	UG/L
CHLOROBENZENE	2	UJ	UG/L
CHLORODIBROMOMETHANE	2.6	J	UG/L
CHLOROETHANE	2	UJ	UG/L
CHLOROFORM	0.82	J	UG/L
CHLOROPRENE	2	UR	UG/L
CIS-1,3-DICHLOROPROPYLENE	2	UJ	UG/L
DIBROMOMETHANE	1.4	J	UG/L
DICHLOROBROMOMETHANE	2.4	J	UG/L
DICHLORODIFLUOROMETHANE	2	UJ	UG/L
ETHYLBENZENE	2	UJ	UG/L
ISOBUTYL ALCOHOL	20	UR	UG/L
METHACRYLONITRILE	10	UJ	UG/L
METHYL BROMIDE	2	UJ	UG/L
METHYL CHLORIDE	2	UJ	UG/L
METHYL IODIDE	5	UJ	UG/L
METHYLENE CHLORIDE	5	UJ	UG/L
PROPIONITRILE	20	UJ	UG/L
STYRENE	2	UJ	UG/L
TETRACHLOROETHYLENE	2	UJ	UG/L
TOLUENE	0.12	U	UG/L
TRANS-1,3-DICHLOROPROPYLENE	2	UJ	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	UJ	UG/L
TRICHLOROETHYLENE	2	UJ	UG/L
TRICHLOROFLUOROMETHANE	2	UJ	UG/L
VINYL ACETATE	5	UJ	UG/L
VINYL CHLORIDE	2	UJ	UG/L
XYLENES (TOTAL)	4	UJ	UG/L

Sample Number: RB02-081996
Sample Date: 8/19/96
Laboratory ID: 9608422-12
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNIT
1,1,1,2-TETRACHLOROETHANE	2	UJ	UG/
1,1,1-TRICHLOROETHANE	2	UJ	UG/
1,1,2,2-TETRACHLOROETHANE	0.52	J	UG/
1,1,2-TRICHLOROETHANE	0.2	J	UG/
1,1-DICHLOROETHANE	2	UJ	UG/
1,1-DICHLOROETHYLENE	2	UJ	UG/
1,2,3-TRICHLOROPROPANE	2	UJ	UG/
1,2-DIBROMO-3-CHLOROPROPANE	2	UJ	UG/
1,2-DIBROMOETHANE	2	UJ	UG/
1,2-DICHLOROETHANE	2	UJ	UG/
1,2-DICHLOROPROPANE	2	UJ	UG/
1,2-TRANS-DICHLOROETHYLENE	2	UJ	UG/
2-BUTANONE	5	UJ	UG/
2-HEXANONE	5	UJ	UG/
4-METHYL-2-PENTANONE	5	UJ	UG/
ACETONE	9.5	J	UG/
ACETONITRILE	10	UJ	UG/
ACROLEIN	20	UJ	UG/
ACRYLONITRILE	20	UJ	UG/
ALLYL CHLORIDE	10	UJ	UG/
BENZENE	2	UJ	UG/
BIS(2-CHLOROISOPROPYL)ETHER	10	UJ	UG/
BROMOFORM	0.32	J	UG/
CARBON DISULFIDE	5	UJ	UG/
CARBON TETRACHLORIDE	2	UJ	UG/
CHLOROBENZENE	2	UJ	UG/
CHLORODIBROMOMETHANE	2	UJ	UG/
CHLOROETHANE	2	UJ	UG/
CHLOROFORM	2	UJ	UG/
CHLOROPRENE	2	UR	UG/
CIS-1,3-DICHLOROPROPYLENE	2	UJ	UG/
DIBROMOMETHANE	2	UJ	UG/
DICHLOROBROMOMETHANE	2	UJ	UG/

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GENERAL ENGINEERING LABS

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VOLATILES

DICHLORODIFLUOROMETHANE	2	UJ	UG/L
ETHYLBENZENE	0.1	J	UG/L
ISOBUTYL ALCOHOL	20	UR	UG/L
METHACRYLONITRILE	10	UJ	UG/L
METHYL BROMIDE	2	UJ	UG/L
METHYL CHLORIDE	2	UJ	UG/L
METHYL IODIDE	5	UJ	UG/L
METHYLENE CHLORIDE	5	UJ	UG/L
PROPIONITRILE	20	UJ	UG/L
STYRENE	2	UJ	UG/L
TETRACHLOROETHYLENE	2	UJ	UG/L
TOLUENE	0.28	U	UG/L
TRANS-1,3-DICHLOROPROPYLENE	2	UJ	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	UJ	UG/L
TRICHLOROETHYLENE	2	UJ	UG/L
TRICHLOROFLUOROMETHANE	2	UJ	UG/L
VINYL ACETATE	5	UJ	UG/L
VINYL CHLORIDE	2	UJ	UG/L
XYLENES (TOTAL)	0.34	J	UG/L

Sample Number: TB02-082096
Sample Date: 8/7/96
Laboratory ID: 9608422-18
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	UJ	UG/L
1,1,1-TRICHLOROETHANE	2	UJ	UG/L
1,1,2,2-TETRACHLOROETHANE	0.64	J	UG/L
1,1,2-TRICHLOROETHANE	0.24	J	UG/L
1,1-DICHLOROETHANE	2	UJ	UG/L
1,1-DICHLOROETHYLENE	2	UJ	UG/L
1,2,3-TRICHLOROPROPANE	10	J	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	UJ	UG/L
1,2-DIBROMOETHANE	2	UJ	UG/L
1,2-DICHLOROETHANE	2	UJ	UG/L
1,2-DICHLOROPROPANE	2	UJ	UG/L
1,2-TRANS-DICHLOROETHYLENE	2	UJ	UG/L
2-BUTANONE	5	UJ	UG/L
2-HEXANONE	5	UJ	UG/L
4-METHYL-2-PENTANONE	1.5	J	UG/L
ACETONE	10	UJ	UG/L
ACETONITRILE	10	UJ	UG/L
ACROLEIN	20	UJ	UG/L
ACRYLONITRILE	1.4	J	UG/L
ALLYL CHLORIDE	10	UJ	UG/L
BENZENE	2	UJ	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	7	J	UG/L
BROMOFORM	0.36	J	UG/L
CARBON DISULFIDE	5	UJ	UG/L
CARBON TETRACHLORIDE	2	UJ	UG/L
CHLOROBENZENE	2	UJ	UG/L
CHLORODIBROMOMETHANE	2	UJ	UG/L
CHLOROETHANE	2	UJ	UG/L
CHLOROFORM	2	UJ	UG/L
CHLOROPRENE	2	UR	UG/L
CIS-1,3-DICHLOROPROPYLENE	2	UJ	UG/L
DIBROMOMETHANE	0.25	J	UG/L
DICHLOROBROMOMETHANE	2	UJ	UG/L
DICHLORODIFLUOROMETHANE	2	UJ	UG
ETHYLBENZENE	2	UJ	UG
ISOBUTYL ALCOHOL	20	UR	UG
METHACRYLONITRILE	10	UJ	UG
METHYL BROMIDE	2	UJ	UG
METHYL CHLORIDE	2	UJ	UG
METHYL IODIDE	5	UJ	UG
METHYL METHACRYLATE	1.4	J	UG
METHYLENE CHLORIDE	1.8	J	UG
PROPIONITRILE	3.7	J	UG
STYRENE	2	UJ	UG
TETRACHLOROETHYLENE	2	UJ	UG
TOLUENE	0.17	U	UG
TRANS-1,3-DICHLOROPROPYLENE	2	UJ	UG
TRANS-1,4-DICHLORO-2-BUTENE	1.3	J	UG
TRICHLOROETHYLENE	2	UJ	UG
TRICHLOROFLUOROMETHANE	2	UJ	UG
VINYL ACETATE	5	UJ	UG
VINYL CHLORIDE	2	UJ	UG
XYLENES (TOTAL)	4	UJ	UG

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 68422W

PESTICIDES/PCBs

Sample Number: FB01-082096
Sample Date: 8/20/96
Laboratory ID: 9608422-17
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
2,4,5-T	0.095	UJ	UG/L
2,4,5-TP(Silvex)	0.095	UJ	UG/L
2,4-D	0.095	UJ	UG/L
4,4'-DDD	0.04	U	UG/L
4,4'-DDE	0.04	U	UG/L
4,4'-DDT	0.04	U	UG/L
ALDRIN	0.02	U	UG/L
ALPHA-BHC	0.02	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.25	U	UG/L
DELTA-BHC	0.02	U	UG/L
DIELDRIN	0.04	U	UG/L
ENDOSULFAN I	0.02	U	UG/L
ENDOSULFAN II	0.04	U	UG/L
ENDOSULFAN SULFATE	0.04	U	UG/L
ENDRIN	0.04	U	UG/L
ENDRIN ALDEHYDE	0.04	U	UG/L
GAMMA-BHC	0.02	U	UG/L
HEPTACHLOR	0.02	U	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.05	U	UG/L
PARATHION, METHYL	0.05	U	UG/L
PCB-1016	0.125	U	UG/L
PCB-1221	0.125	U	UG/L
PCB-1232	0.125	U	UG/L
PCB-1242	0.125	U	UG/L
PCB-1248	0.125	U	UG/L
PCB-1254	0.125	U	UG/L
PCB-1260	0.125	U	UG/L
PHORATE	0.05	U	UG/L
TOXAPHENE	1	U	UG/L

Sample Number: RB02-081996
Sample Date: 8/19/96
Laboratory ID: 9608422-12
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
2,4,5-T	0.095	UJ	UG/L
2,4,5-TP(Silvex)	0.095	UJ	UG/L
2,4-D	0.095	UJ	UG/L
4,4'-DDD	0.04	U	UG/L
4,4'-DDE	0.04	U	UG/L
4,4'-DDT	0.04	U	UG/L
ALDRIN	0.02	U	UG/L
ALPHA-BHC	0.02	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.25	U	UG/L
DELTA-BHC	0.02	U	UG/L
DIELDRIN	0.04	U	UG/L
ENDOSULFAN I	0.02	U	UG/L
ENDOSULFAN II	0.04	U	UG/L
ENDOSULFAN SULFATE	0.04	U	UG/L
ENDRIN	0.04	U	UG/L
ENDRIN ALDEHYDE	0.04	U	UG/L
GAMMA-BHC	0.02	U	UG/L
HEPTACHLOR	0.02	U	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.05	U	UG/L
PARATHION, METHYL	0.05	U	UG/L
PCB-1016	0.125	U	UG/L
PCB-1221	0.125	U	UG/L
PCB-1232	0.125	U	UG/L
PCB-1242	0.125	U	UG/L
PCB-1248	0.125	U	UG/L
PCB-1254	0.125	U	UG/L
PCB-1260	0.125	U	UG/L
PHORATE	0.05	U	UG/L
TOXAPHENE	1	U	UG/L

INORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 24, 1997**
FROM:	**TERESA M. HUDSON**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA REVIEW - TAL METALS AND CYANIDE**
CTO 007 -KEY WEST, FLORIDA
SDG - 69266W

SAMPLES: 20/AQUEOUS/

I7MW-1	I7MW7-6	I1MW1-1	I1DPGW
I7MW7-2	I7MW-3	I1KMW-03	I1MW1-2
I7MW7-4	I7DPGW	I1MW-3	I1MW-5
I7MW-10	I7KMW-12	I1MW-6	I1MW3-1
I7MW7-5	I7MW7-1	I1MW-1	I1KMW-02

Introduction

A validation was performed on the inorganic analytical data from CTO 007, NAS Key West, SDG No.69266W. Twenty (20) aqueous samples were included for TAL metals and cyanide. Two (2) field duplicate pairs (I1MW3-1/I1DPGW and I7MW7-3/I7DPGW) are included within this SDG.

All samples were analyzed for Target Analyte List (TAL) metals and cyanide. The samples were collected by Brown and Root Environmental on September 10, 11, 12, and 13, 1996 and analyzed by General Engineering Laboratory under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- Calibration Verifications
- * Laboratory Blank Analyses
- Matrix Spike Results

* - Quality control criteria were not met for this parameter

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method and preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level (aqueous)
aluminum[1]	25.408 ug/L	127.04 ug/L
arsenic	2.5 ug/L	12.5 ug/L
barium[1]	1.077 ug/L	5.385 ug/L
beryllium[1]	0.652 ug/L	3.26 ug/L
cadmium[1]	0.453 ug/L	2.265 ug/L
calcium[1]	30.51 ug/L	152.55 ug/L
chromium	1.2 ug/L	6 ug/L
copper[1]	3.293 ug/L	16.465 ug/L
cyanide	2.1 ug/L	10.5 ug/L
iron[1]	3.186 ug/L	15.93 ug/L
lead	1.6 ug/L	8 ug/L
silver[1]	2.164 ug/L	10.82 ug/L
thallium[1]	2.698 ug/L	13.49 ug/L
zinc	1.335 ug/L	6.675 ug/L

Samples affected: All.

[1] Maximum concentration found in a field blank.

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for aluminum, arsenic, barium, cadmium, chromium, copper, cyanide, iron, lead, silver, thallium, and zinc have been qualified as nondetected, "U". No action was taken for the remaining analytes since the results were either positive and greater than the action level or nondetect.

Notes

All samples were analyzed at a two (2) fold dilution for aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, iron, lead, manganese, nickel, selenium, silver, thallium, vanadium, and zinc. Calcium, magnesium, sodium, and potassium were analyzed at a 20 fold dilution. There were no dilutions for mercury or cyanide.

The Continuing Calibration Verification (CCV) Percent Recovery (R%) for cyanide was above (115.5'1) the quality control limits. However, no validation actions were warranted.

It was noted that the %R for mercury (180%) exceeded the quality control limit for Contract Required Detection Limit (CRDL) Percent Recoveries (R%) for AA. However, no validation actions were taken for CRDL R%.

It was noted that Matrix Spike (MS) Percent Recovery (R%) for antimony and cyanide were below the quality control limits. MS R% were not low enough to require qualification for these analytes. It was also noted that MS R% for magnesium, potassium, and sodium were extremely high. However, no validation actions were taken.

.. comparison of field duplicate pairs I1MW3-1/I1DPGW and I7MW7-3/I7DPGW can be found in Appendix C. However, no validation actions are required for field duplicate imprecision.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method blank.

Other Factors Affecting Data Quality: None.

No other problems were encountered in this case.

The data for these analyses were reviewed in accordance with the "National Functional Guidelines for Inorganic Review," February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Teresa M. Hudson

Brown and Root Environmental
Teresa M. Hudson
Environmental Scientist/Data Validator

Julia F. Bradley for

Brown and Root Environmental
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation.

KEY WEST
SDG 69266W

TABLE 1 - RECOMMENDATION SUMMARY

Aluminum	A^1	Magnesium	
Antimony		Manganese	
Arsenic	A^1	Mercury	
Barium	A^1	Nickel	
Beryllium		Potassium	
Cadmium	A^1	Selenium	
Calcium		Silver	A^1
Chromium	A^1	Sodium	
Cobalt		Thallium	A^1
Copper	A^1	Vanadium	
Iron	A^1	Zinc	A^1
Lead	A^1	Cyanide	A^1

If the field is left blank, the qualifier is A - Accept all data.

A^1 - Accept data but qualify positive results as nondetected, "U", as a result of laboratory blank contamination.

APPENDIX A
Qualified Analytical Results

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69266W

INORGANICS

Sample Number: I1DPGW
Sample Date: 9/13/96
Laboratory ID: 9609266-16
QC Type: NORMAL
% Moisture: 0
Location: I1DPGW

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	10.1		UG/L
ARSENIC	4	U	UG/L
BARIUM	67.1		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	280000		UG/L
CHROMIUM	2.6	U	UG/L
COBALT	2	U	UG/L
COPPER	59.8		UG/L
CYANIDE, TOTAL	1.4	U	UG/L
IRON	77.2		UG/L
LEAD	5.4	U	UG/L
MAGNESIUM	666000		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	12		UG/L
POTASSIUM	208000		UG/L
SELENIUM	4	U	UG/L
SILVER	2.6	U	UG/L
SODIUM	4760000		UG/L
THALLIUM	5.7	U	UG/L
VANADIUM	2	U	UG/L
ZINC	80.6		UG/L

Sample Number: I1KMW-02
Sample Date: 9/13/96
Laboratory ID: 9609266-20
QC Type: NORMAL
% Moisture: 0
Location: I1KWM-02

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	4	U	UG/L
BARIUM	38.2		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	360000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE, TOTAL	1.4	U	UG/L
IRON	30.1	U	UG/L
LEAD	4.5	U	UG/L
MAGNESIUM	928000		UG/L
MANGANESE	31.3		UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	304000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	6980000		UG/L
THALLIUM	7.5	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: I1KMW-03
Sample Date: 9/12/96
Laboratory ID: 9609266-12
QC Type: NORMAL
% Moisture: 0
Location: I1KWM-03

	RESULT	QUAL	UNIT
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	4	U	UG/L
BARIUM	12.1		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	248000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE, TOTAL	1.4	U	UG/L
IRON	80.5		UG/L
LEAD	3	U	UG/L
MAGNESIUM	502000		UG/L
MANGANESE	3.4		UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	157000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	3520000		UG/L
THALLIUM	5.7	U	UG/L
VANADIUM	15.7		UG/L
ZINC	2	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69266W

INORGANICS

Sample Number: I1MW-1
Sample Date: 9/12/96
Laboratory ID: 9609266-15
QC Type: NORMAL
% Moisture: 0
Location: I1MW-1

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	34.3		UG/L
ARSENIC	4	U	UG/L
BARIUM	19.2		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	106000		UG/L
CHROMIUM	9.1	U	UG/L
COBALT	2	U	UG/L
COPPER	61.1		UG/L
CYANIDE, TOTAL	1.4	U	UG/L
IRON	291		UG/L
LEAD	4.6	U	UG/L
MAGNESIUM	84200		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	29200		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	442000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	3.6		UG/L
ZINC	31.8		UG/L

Sample Number: I1MW-3
Sample Date: 9/12/96
Laboratory ID: 9609266-13
QC Type: NORMAL
% Moisture: 0
Location: I1MW-3

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	5.6		UG/L
ARSENIC	4	U	UG/L
BARIUM	40.3		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	191000		UG/L
CHROMIUM	12.6		UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE, TOTAL	1.4	U	UG/L
IRON	51.4		UG/L
LEAD	3	U	UG/L
MAGNESIUM	480000		UG/L
MANGANESE	137		UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	151000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	3340000		UG/L
THALLIUM	6	U	UG/L
VANADIUM	2		UG/L
ZINC	2	U	UG/L

Sample Number: I1MW-5
Sample Date: 9/13/96
Laboratory ID: 9609266-18
QC Type: NORMAL
% Moisture: 0
Location: I1MW-5

	RESULT	QUAL	UNIT
ALUMINUM	28	U	UG/l
ANTIMONY	4	U	UG/L
ARSENIC	4.3	U	UG/L
BARIUM	36.3		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	330000		UG/L
CHROMIUM	2.4	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE, TOTAL	1.4	U	UG/L
IRON	4	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	1120000		UG/L
MANGANESE	25.7		UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	356000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	8320000		UG/L
THALLIUM	7.5	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69266W

INORGANICS

Sample Number: I1MW-6
Sample Date: 9/12/96
Laboratory ID: 9609266-14
QC Type: NORMAL
% Moisture: 0
Location: I1MW-6

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	4	U	UG/L
BARIUM	9.9	U	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	92800		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE, TOTAL	1.4	U	UG/L
IRON	4	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	101000		UG/L
MANGANESE	3.2		UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	35400		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	366000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	3.4		UG/L
ZINC	2	U	UG/L

Sample Number: I1MW1-1
Sample Date: 9/12/96
Laboratory ID: 9609266-11
QC Type: NORMAL
% Moisture: 0
Location: I1MW1-1

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	44.3		UG/L
ARSENIC	4	U	UG/L
BARIUM	14.6		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	242000		UG/L
CHROMIUM	9.6	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE, TOTAL	1.4	U	UG/L
IRON	4	U	UG/L
LEAD	4	U	UG/L
MAGNESIUM	31000		UG/L
MANGANESE	28.7		UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	96200		UG/L
SELENIUM	54.6		UG/L
SILVER	2	U	UG/L
SODIUM	9420000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	9.3		UG/L
ZINC	2	U	UG/L

Sample Number: I1MW1-2
Sample Date: 9/13/96
Laboratory ID: 9609266-17
QC Type: NORMAL
% Moisture: 0
Location: I1MW1-2

	RESULT	QUAL	UNIT
ALUMINUM	28	U	UG/
ANTIMONY	4	U	UG/
ARSENIC	4	U	UG/
BARIUM	50.4		UG/
BERYLLIUM	0.2	U	UG/
CADMIUM	0.4	U	UG/
CALCIUM	204000		UG/
CHROMIUM	2.1	U	UG/
COBALT	2	U	UG/
COPPER	16.8	U	UG/L
CYANIDE, TOTAL	1.4	U	UG/L
IRON	62.4		UG/L
LEAD	3	U	UG/L
MAGNESIUM	568000		UG/L
MANGANESE	5.5		UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	186000		UG/L
SELENIUM	4.7		UG/L
SILVER	2.2	U	UG/L
SODIUM	4000000		UG/L
THALLIUM	8.1	U	UG/L
VANADIUM	2	U	UG/L
ZINC	52.2		UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69266W

INORGANICS

Sample Number: I1MW1-3
Sample Date: 9/13/96
Laboratory ID: 9609266-19
QC Type: NORMAL
% Moisture: 0
Location: I1MW1-3

	RESULT	QUAL	UNITS
ALUMINUM	155	U	UG/L
ANTIMONY	9.1		UG/L
ARSENIC	4	U	UG/L
BARIUM	64.6		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	278000		UG/L
CHROMIUM	6.5	U	UG/L
COBALT	2	U	UG/L
COPPER	88.4		UG/L
CYANIDE, TOTAL	1.4	U	UG/L
IRON	391		UG/L
LEAD	18.9		UG/L
MAGNESIUM	686000		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.43		UG/L
NICKEL	10.2		UG/L
POTASSIUM	208000		UG/L
SELENIUM	4	U	UG/L
SILVER	3.9	U	UG/L
SODIUM	4740000		UG/L
THALLIUM	5.1	U	UG/L
VANADIUM	2	U	UG/L
ZINC	96.2		UG/L

Sample Number: I7DPGW
Sample Date: 9/11/96
Laboratory ID: 9609266-08
QC Type: NORMAL
% Moisture: 0
Location: I7DPGW

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	36.2		UG/L
BARIUM	50.9		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	1.1	U	UG/L
CALCIUM	430000		UG/L
CHROMIUM	3.6	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE, TOTAL	4.7	U	UG/L
IRON	34.5		UG/L
LEAD	3	U	UG/L
MAGNESIUM	1170000		UG/L
MANGANESE	8		UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	356000		UG/L
SELENIUM	4	U	UG/L
SILVER	2.2	U	UG/L
SODIUM	8560000		UG/L
THALLIUM	8.1	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: I7KWM-12
Sample Date: 9/11/96
Laboratory ID: 9609266-09
QC Type: NORMAL
% Moisture: 0
Location: I7KWM-12

	RESULT	QUAL	UNI
ALUMINUM	168	U	UG/
ANTIMONY	4	U	UG/
ARSENIC	4	U	UG/
BARIUM	47.7		UG/
BERYLLIUM	0.2	U	UG/
CADMIUM	0.4	U	UG/
CALCIUM	524000		UG/
CHROMIUM	3	U	UG/
COBALT	2	U	UG/
COPPER	32.3	U	UG/
CYANIDE, TOTAL	1.4	U	UG/
IRON	1400		UG/
LEAD	35.3		UG/
MAGNESIUM	1170000		UG/
MANGANESE	2	U	UG/
MERCURY	0.1	U	UG/
NICKEL	4	U	UG/
POTASSIUM	356000		UG/
SELENIUM	4	U	UG/
SILVER	2	U	UG/
SODIUM	8540000		UG/
THALLIUM	7	U	UG/
VANADIUM	2	U	UG/
ZINC	107		UG/

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69266W

INORGANICS

Sample Number: I7MW-1
Sample Date: 9/10/96
Laboratory ID: 9609266-01
QC Type: NORMAL
% Moisture: 0
Location: I7MW-1

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	4	U	UG/L
BARIUM	35.2		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	446000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4.7	U	UG/L
CYANIDE, TOTAL	1.4	U	UG/L
IRON	164		UG/L
LEAD	4	U	UG/L
MAGNESIUM	1420000		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	424000		UG/L
SELENIUM	4	U	UG/L
SILVER	2.3	U	UG/L
SODIUM	10200000		UG/L
THALLIUM	9.9	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: I7MW7-1
Sample Date: 9/11/96
Laboratory ID: 9609266-10
QC Type: NORMAL
% Moisture: 0
Location: I7MW7-1

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	5.4		UG/L
ARSENIC	4	U	UG/L
BARIUM	149		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	332000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	39.6		UG/L
CYANIDE, TOTAL	1.4	U	UG/L
IRON	36.6		UG/L
LEAD	3	U	UG/L
MAGNESIUM	864000		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	6.7		UG/L
POTASSIUM	25800		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	6280000		UG/L
THALLIUM	5.7	U	UG/L
VANADIUM	2	U	UG/L
ZINC	54.6		UG/L

Sample Number: I7MW7-10
Sample Date: 9/10/96
Laboratory ID: 9609266-04
QC Type: NORMAL
% Moisture: 0
Location: I7MW7-10

	RESULT	QUAL	UNI
ALUMINUM	28	U	UG/
ANTIMONY	16.2		UG/
ARSENIC	4.3	U	UG/
BARIUM	52.6		UG/
BERYLLIUM	0.2	U	UG/
CADMIUM	1.4	U	UG/
CALCIUM	422000		UG/
CHROMIUM	2	U	UG/
COBALT	2	U	UG/
COPPER	21.5	U	UG/
CYANIDE, TOTAL	1.4	U	UG/
IRON	4	U	UG/
LEAD	4.5	U	UG/
MAGNESIUM	1220000		UG/
MANGANESE	2	U	UG/
MERCURY	0.11		UG/
NICKEL	29.3		UG/
POTASSIUM	372000		UG/
SELENIUM	4	U	UG/
SILVER	2.9	U	UG/
SODIUM	8840000		UG/
THALLIUM	5.9	U	UG/
VANADIUM	2	U	UG/
ZINC	120		UG/

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69266W

INORGANICS

Sample Number: I7MW7-2
Sample Date: 9/10/96
Laboratory ID: 9609266-02
QC Type: NORMAL
% Moisture: 0
Location: I7MW7-2

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	4	U	UG/L
BARIUM	51		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	372000		UG/L
CHROMIUM	2.7	U	UG/L
COBALT	2	U	UG/L
COPPER	15	U	UG/L
CYANIDE, TOTAL	1.4	U	UG/L
IRON	4	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	1160000		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.11		UG/L
NICKEL	8.1		UG/L
POTASSIUM	356000		UG/L
SELENIUM	4	U	UG/L
SILVER	4.5	U	UG/L
SODIUM	8420000		UG/L
THALLIUM	6.1	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: I7MW7-3
Sample Date: 9/11/96
Laboratory ID: 9609266-07
QC Type: NORMAL
% Moisture: 0
Location: I7MW7-3

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	5.2		UG/L
ARSENIC	57.8		UG/L
BARIUM	44.3		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	446000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE, TOTAL	8.9	U	UG/L
IRON	4	U	UG/L
LEAD	3.8	U	UG/L
MAGNESIUM	1270000		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.18		UG/L
NICKEL	4	U	UG/L
POTASSIUM	394000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	9400000		UG/L
THALLIUM	5.4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: I7MW7-4
Sample Date: 9/10/96
Laboratory ID: 9609266-03
QC Type: NORMAL
% Moisture: 0
Location: I7MW7-4

	RESULT	QUAL	UNIT
ALUMINUM	28	U	UG/
ANTIMONY	4	U	UG/l
ARSENIC	4	U	UG/l
BARIUM	102		UG/l
BERYLLIUM	0.2	U	UG/l
CADMIUM	0.4	U	UG/l
CALCIUM	368000		UG/l
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4.5	U	UG/L
CYANIDE, TOTAL	1.4	U	UG/L
IRON	4	U	UG/L
LEAD	3.9	U	UG/L
MAGNESIUM	826000		UG/L
MANGANESE	18.5		UG/L
MERCURY	0.39		UG/L
NICKEL	4	U	UG/L
POTASSIUM	256000		UG/L
SELENIUM	4	U	UG/L
SILVER	2.5	U	UG/L
SODIUM	5960000		UG/L
THALLIUM	4.4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69266W

INORGANICS

Sample Number: I7MW7-5
Sample Date: 9/10/96
Laboratory ID: 9609266-05
QC Type: NORMAL
% Moisture: 0
Location: I7MW7-5

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4		UG/L
ARSENIC	16.7	U	UG/L
BARIUM	27.6		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	436000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	5.6	U	UG/L
CYANIDE, TOTAL	4.7	U	UG/L
IRON	193		UG/L
LEAD	3	U	UG/L
MAGNESIUM	1430000		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	482000		UG/L
SELENIUM	4	U	UG/L
SILVER	2.4	U	UG/L
SODIUM	10200000		UG/L
THALLIUM	6.3	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: I7MW7-6
Sample Date: 9/11/96
Laboratory ID: 9609266-06
QC Type: NORMAL
% Moisture: 0
Location: I7MW7-6

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	4	U	UG/L
BARIUM	84.8		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	358000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE, TOTAL	3.1	U	UG/L
IRON	8.4	U	UG/L
LEAD	3.9	U	UG/L
MAGNESIUM	834000		UG/L
MANGANESE	31.5		UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	244000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	5940000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

ORGANIC DATA VALIDATION

INTERNAL CORRESPONDENCE

TO:	CHUCK BRYAN	DATE:	FEBRUARY 3, 1997
FROM:	EDWARD A. INABINETT	COPIES:	DV FILE

SUBJECT: ORGANIC DATA REVIEW - PEST/PCB/HERB
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG 69266W

SAMPLES: 20/Water:

I7MW-1	I7MW7-6	I1MW1-1	I1DPGW
I7MW7-2	I7MW7-3	I1KMW-03	I1MW1-2
I7MW7-4	I7DPGW	I1MW-3	I1MW-5
I7MW7-10	I7KWM-12	I1MW-6	I1MW3-1
I7MW7-5	I7MW7-1	I1MW-1	I1KMW-02

The sample set for the CTO 007 NAS Key West site, SDG 69266W, consists of twenty (20) water environmental samples. All samples were analyzed for Target Compound List (TCL) pesticide/PCB and herbicide organic compounds. Two field duplicate pairs were included in this SDG(I1DPGW/I1MW3-1, I7DPGW/I7MW7-3).

The samples were collected by Brown and Root Environmental on Septemter 10th through 13th, 1996 and analyzed by General Engineering Laboratories, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Methods 8080 and 8150 analytical and reporting protocols. The data were evaluated according to the following parameters:

- * Holding times
- Initial and continuing calibrations
- Laboratory and field blank analyses
- * Compound Quantitation
- * Field Duplicate Precision

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Pesticide/PCBs

The holding time from date of collection to date of extraction was exceeded in samples I7MW-1, I7MW7-2, I7MW7-4, I7MW7-10, I7MW7-5, and I7MW7-6. Postive and nondetected results were qualified as estimated "J" and "UJ" respectively.

Samples I7DPGW, I7MW7-3, I7MW7-4, and I7MW7-6 were analyzed undiluted. However, the concentration for gamma-BHC exceeded the linear calibration range of the instrument. As a result, the laboratory reanalyzed these samples at a 10-fold dilution. The original data, with the exception of the positive result for gamma-BHC was used in validation. The diluted results for gamma-BHC were transposed over to the undiluted results and used in validation. No further action was taken.

Sample I7KWM-12 was analyzed undiluted. However, the concentration for gamma-BHC exceeded the linear calibration range of the instrument. As a result, the laboratory reanalyzed this sample at a 4-fold dilution. The original data, with the exception of the positive result for gamma-BHC was used in validation. The diluted results for gamma-BHC were transposed over to the undiluted results and used in validation. No further action was taken.

Sample I7MW7-5 was analyzed undiluted. However, the concentration for gamma-BHC exceeded the linear calibration range of the instrument. As a result, the laboratory reanalyzed this sample at a 5-fold dilution. The original data, with the exception of the positive result for gamma-BHC was used in validation. The diluted results for gamma-BHC were transposed over to the undiluted results and used in validation. No further action was taken.

The laboratory qualifier "P" was removed from all target compound data with a %D above 25% and less than 100% between positive results on columns 1 and 2.

Several samples had high %Ds (greater than 100%) between positive results on columns 1 and 2 for several pesticide compounds. Positive results for these compounds were qualified as estimated "J" in these samples.

Poor field duplicate precision was noted in the field duplicate pair I7DPGW/I7MW7-3 for alpha-BHC and gamma-BHC. No action is taken based on poor field duplicate precision.

No other problems were noted.

Herbicides

No problems were noted.

Additional Comments

None.

Executive Summary

Laboratory Performance: The holding times were exceeded for several samples being analyzed for pesticide compounds.

Other Factors Affecting Data Quality: Several samples had high %Ds between columns 1 and 2 when being analyzed for pesticide compounds. Gamma-BHC was detected at a high concentration in several samples, requiring dilution and reanalysis.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Edward A. Inabinett
Brown and Root Environmental

Edward A. Inabinett
Engineer/Data Validator

R. Matthew Ray for
Brown and Root Environmental

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

NAS KEY WEST

SDG 69266W

TABLE 1 - RECOMMENDATION SUMMARY

Sample No.	PEST/PCB			HERB		
I7MW-1		J[1,2,3]				
I7MW7-6		J[1,6,7,8]				
I1MW1-1		J[8]				
I1DPGW		J[17]				
I7MW7-2		J[1,3,4]				
I7MW7-3		J[5,7,8,11,12,13]				
I1KMW-03		J[2]				
I1MW1-2		J[6,10]				
I7MW7-4		J[1,2,5,6]				
I7DPGW		J[5,7,8,11,12,14,15,16]				
I1MW-3		J[3]				
I1MW-5		J[3,7]				
I7MW7-10		J[1,5,7]				
I7KWM-12		J[5,6,7,8,17,18]				
I1MW-6						
I1MW3-1		J[3,17]				
I7MW7-5		J[1,5,6,7,8,9,10]				
I7MW7-1		J[7,19]				
I1MW-1						
I1KMW-02		J[3,7]				

If the field is left blank, the qualifier is A - Accept all data.

J[1] - Accept data, but qualify positive and nondetected results pesticide/PCB compounds as estimated "J" and "UJ" as a result holding times being exceeded.

J[2] - Accept data, but remove the laboratory qualifier "P" for gamma-BHC as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J[3] - Accept data, but remove the laboratory qualifier "P" for endosulfan I as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^4 - Accept data, but remove the laboratory qualifier "P" for 4,4'-DDE as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^5 - Accept data, but qualify positive results for delta-BHC as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^6 - Accept data, but qualify positive results for endosulfan I as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^7 - Accept data, but qualify positive results for gamma-BHC as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^8 - Accept data, but qualify positive results for heptachlor as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^9 - Accept data, but remove the laboratory qualifier "P" for dieldrin as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{10} - Accept data, but remove the laboratory qualifier "P" for 4,4'-DDD as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{11} - Accept data, but qualify positive results for alpha-BHC as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{12} - Accept data, but qualify positive results for dieldrin as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{13} - Accept data, but qualify positive results for endosulfan sulfate as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{14} - Accept data, but qualify positive results for aldrin as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{15} - Accept data, but remove the laboratory qualifier "P" for endrin as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{16} - Accept data, but remove the laboratory qualifier "P" for endosulfan sulfate as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{17} - Accept data, but remove the laboratory qualifier "P" for alpha-BHC as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{18} - Accept data, but remove the laboratory qualifier "P" for aldrin as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{19} - Accept data, but remove the laboratory qualifier "P" for delta-BHC as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69266W

PESTICIDES/PCBs

Sample Number: I1DPGW
Sample Date: 9/13/96
Laboratory ID: 9609266-16
QC Type: NORMAL
% Moisture: 0
Location: I1DPGW

	RESULT	QUAL	UNITS
2,4,5-T	0.099	U	UG/L
2,4,5-TP (SILVEX)	0.099	U	UG/L
2,4-D	0.099	U	UG/L
4,4'-DDD	0.039	U	UG/L
4,4'-DDE	0.039	U	UG/L
4,4'-DDT	0.039	U	UG/L
ALDRIN	0.02	U	UG/L
ALPHA-BHC	0.015	J	UG/L
AROCLOR-1016	0.12	U	UG/L
AROCLOR-1221	0.12	U	UG/L
AROCLOR-1232	0.12	U	UG/L
AROCLOR-1242	0.12	U	UG/L
AROCLOR-1248	0.12	U	UG/L
AROCLOR-1254	0.12	U	UG/L
AROCLOR-1260	0.12	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.24	U	UG/L
DELTA-BHC	0.02	U	UG/L
DIELDRIN	0.023	J	UG/L
ENDOSULFAN I	0.02	U	UG/L
ENDOSULFAN II	0.039	U	UG/L
ENDOSULFAN SULFATE	0.039	U	UG/L
ENDRIN	0.039	U	UG/L
ENDRIN ALDEHYDE	0.039	U	UG/L
GAMMA-BHC (LINDANE)	0.02	U	UG/L
HEPTACHLOR	0.02	U	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.049	U	UG/L
PARATHION, METHYL	0.049	U	UG/L
PHORATE	0.049	U	UG/L
TOXAPHENE	0.98	U	UG/L

Sample Number: I1KMW-02
Sample Date: 9/13/96
Laboratory ID: 9609266-20
QC Type: NORMAL
% Moisture: 0
Location: I1KWM-02

	RESULT	QUAL	UNITS
2,4,5-T	0.098	U	UG/L
2,4,5-TP(Silvex)	0.098	U	UG/L
2,4-D	0.098	U	UG/L
4,4'-DDD	0.042	U	UG/L
4,4'-DDE	0.042	U	UG/L
4,4'-DDT	0.042	U	UG/L
ALDRIN	0.021	U	UG/L
ALPHA-BHC	0.021	U	UG/L
AROCLOR-1016	0.13	U	UG/L
AROCLOR-1221	0.13	U	UG/L
AROCLOR-1232	0.13	U	UG/L
AROCLOR-1242	0.13	U	UG/L
AROCLOR-1248	0.13	U	UG/L
AROCLOR-1254	0.13	U	UG/L
AROCLOR-1260	0.13	U	UG/L
BETA-BHC	0.021	U	UG/L
CHLORDANE	0.26	U	UG/L
DELTA-BHC	0.021	U	UG/L
DIELDRIN	0.042	U	UG/L
ENDOSULFAN I	0.013	J	UG/L
ENDOSULFAN II	0.042	U	UG/L
ENDOSULFAN SULFATE	0.042	U	UG/L
ENDRIN	0.042	U	UG/L
ENDRIN ALDEHYDE	0.042	U	UG/L
GAMMA-BHC (LINDANE)	0.087	J	UG/L
HEPTACHLOR	0.021	U	UG/L
HEPTACHLOR EPOXIDE	0.021	U	UG/L
METHOXYCHLOR	0.21	U	UG/L
PARATHION	0.052	U	UG/L
PARATHION, METHYL	0.052	U	UG/L
PHORATE	0.052	U	UG/L
TOXAPHENE	1	U	UG/L

Sample Number: I1KMW-03
Sample Date: 9/12/96
Laboratory ID: 9609266-12
QC Type: NORMAL
% Moisture: 0
Location: I1KWM-03

	RESULT	QUAL	UNIT
2,4,5-T	0.099	U	UG/L
2,4,5-TP (SILVEX)	0.099	U	UG/L
2,4-D	0.099	U	UG/L
4,4'-DDD	0.04	U	UG/L
4,4'-DDE	0.04	U	UG/L
4,4'-DDT	0.04	U	UG/L
ALDRIN	0.02	U	UG/L
ALPHA-BHC	0.02	U	UG/L
AROCLOR-1016	0.12	U	UG/L
AROCLOR-1221	0.12	U	UG/L
AROCLOR-1232	0.12	U	UG/L
AROCLOR-1242	0.12	U	UG/L
AROCLOR-1248	0.12	U	UG/L
AROCLOR-1254	0.12	U	UG/L
AROCLOR-1260	0.12	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.25	U	UG/L
DELTA-BHC	0.02	U	UG/L
DIELDRIN	0.04	U	UG/L
ENDOSULFAN I	0.02	U	UG/L
ENDOSULFAN II	0.04	U	UG/L
ENDOSULFAN SULFATE	0.04	U	UG/L
ENDRIN	0.04	U	UG/L
ENDRIN ALDEHYDE	0.04	U	UG/L
GAMMA-BHC (LINDANE)	0.015	J	UG/L
HEPTACHLOR	0.02	U	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.05	U	UG/L
PARATHION, METHYL	0.05	U	UG/L
PHORATE	0.05	U	UG/L
TOXAPHENE	0.99	U	UG/L

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Sample Number: I1MW-1
Sample Date: 9/12/96
Laboratory ID: 9609266-15
QC Type: NORMAL
% Moisture: 0
Location: I1MW-1

	RESULT	QUAL	UNITS
2,4,5-T	0.099	U	UG/L
2,4,5-TP(Silvex)	0.099	U	UG/L
2,4-D	0.099	U	UG/L
4,4'-DDD	0.04	U	UG/L
4,4'-DDE	0.04	U	UG/L
4,4'-DDT	0.04	U	UG/L
ALDRIN	0.02	U	UG/L
ALPHA-BHC	0.02	U	UG/L
AROCLOR-1016	0.12	U	UG/L
AROCLOR-1221	0.12	U	UG/L
AROCLOR-1232	0.12	U	UG/L
AROCLOR-1242	0.12	U	UG/L
AROCLOR-1248	0.12	U	UG/L
AROCLOR-1254	0.12	U	UG/L
AROCLOR-1260	0.12	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.25	U	UG/L
DELTA-BHC	0.02	U	UG/L
DIELDRIN	0.04	U	UG/L
ENDOSULFAN I	0.019	J	UG/L
ENDOSULFAN II	0.04	U	UG/L
ENDOSULFAN SULFATE	0.04	U	UG/L
ENDRIN	0.04	U	UG/L
ENDRIN ALDEHYDE	0.04	U	UG/L
GAMMA-BHC (LINDANE)	0.02	U	UG/L
HEPTACHLOR	0.02	U	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.05	U	UG/L
PARATHION, METHYL	0.05	U	UG/L
PHORATE	0.05	U	UG/L
TOXAPHENE	0.99	U	UG/L

Sample Number: I1MW-3
Sample Date: 9/12/96
Laboratory ID: 9609266-13
QC Type: NORMAL
% Moisture: 0
Location: I1MW-3

	RESULT	QUAL	UNITS
2,4,5-T	0.099	U	UG/L
2,4,5-TP(Silvex)	0.099	U	UG/L
2,4-D	0.099	U	UG/L
4,4'-DDD	0.039	U	UG/L
4,4'-DDE	0.039	U	UG/L
4,4'-DDT	0.039	U	UG/L
ALDRIN	0.02	U	UG/L
ALPHA-BHC	0.02	U	UG/L
AROCLOR-1016	0.12	U	UG/L
AROCLOR-1221	0.12	U	UG/L
AROCLOR-1232	0.12	U	UG/L
AROCLOR-1242	0.12	U	UG/L
AROCLOR-1248	0.12	U	UG/L
AROCLOR-1254	0.12	U	UG/L
AROCLOR-1260	0.12	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.24	U	UG/L
DELTA-BHC	0.02	U	UG/L
DIELDRIN	0.039	U	UG/L
ENDOSULFAN I	0.013	J	UG/L
ENDOSULFAN II	0.039	U	UG/L
ENDOSULFAN SULFATE	0.039	U	UG/L
ENDRIN	0.039	U	UG/L
ENDRIN ALDEHYDE	0.039	U	UG/L
GAMMA-BHC (LINDANE)	0.02	U	UG/L
HEPTACHLOR	0.02	U	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.049	U	UG/L
PARATHION, METHYL	0.049	U	UG/L
PHORATE	0.049	U	UG/L
TOXAPHENE	0.98	U	UG/L

Sample Number: I1MW-5
Sample Date: 9/13/96
Laboratory ID: 9609266-18
QC Type: NORMAL
% Moisture: 0
Location: I1MW-5

	RESULT	QUAL	UNIT
2,4,5-T	0.098	U	UG/l
2,4,5-TP(Silvex)	0.098	U	UG/l
2,4-D	0.098	U	UG/l
4,4'-DDD	0.041	U	UG/l
4,4'-DDE	0.041	U	UG/l
4,4'-DDT	0.041	U	UG/l
ALDRIN	0.02	U	UG/L
ALPHA-BHC	0.02	U	UG/L
AROCLOR-1016	0.13	U	UG/L
AROCLOR-1221	0.13	U	UG/L
AROCLOR-1232	0.13	U	UG/L
AROCLOR-1242	0.13	U	UG/L
AROCLOR-1248	0.13	U	UG/L
AROCLOR-1254	0.13	U	UG/L
AROCLOR-1260	0.13	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.26	U	UG/L
DELTA-BHC	0.02	U	UG/L
DIELDRIN	0.023	J	UG/L
ENDOSULFAN I	0.02	J	UG/L
ENDOSULFAN II	0.041	U	UG/L
ENDOSULFAN SULFATE	0.041	U	UG/L
ENDRIN	0.041	U	UG/L
ENDRIN ALDEHYDE	0.041	U	UG/L
GAMMA-BHC (LINDANE)	0.16	J	UG/L
HEPTACHLOR	0.02	U	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.051	U	UG/L
PARATHION, METHYL	0.051	U	UG/L
PHORATE	0.051	U	UG/L
TOXAPHENE	1	U	UG/L

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Sample Number: I1MW-6
Sample Date: 9/12/96
Laboratory ID: 9609266-14
QC Type: NORMAL
% Moisture: 0
Location: I1MW-6

	RESULT	QUAL	UNITS
2,4,5-T	0.1	U	UG/L
2,4,5-TP(Silvex)	0.1	U	UG/L
2,4-D	0.1	U	UG/L
4,4'-DDD	0.04	U	UG/L
4,4'-DDE	0.04	U	UG/L
4,4'-DDT	0.04	U	UG/L
ALDRIN	0.02	U	UG/L
ALPHA-BHC	0.02	U	UG/L
AROCLOR-1016	0.12	U	UG/L
AROCLOR-1221	0.12	U	UG/L
AROCLOR-1232	0.12	U	UG/L
AROCLOR-1242	0.12	U	UG/L
AROCLOR-1248	0.12	U	UG/L
AROCLOR-1254	0.12	U	UG/L
AROCLOR-1260	0.12	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.25	U	UG/L
DELTA-BHC	0.02	U	UG/L
DIELDRIN	0.04	U	UG/L
ENDOSULFAN I	0.02	U	UG/L
ENDOSULFAN II	0.04	U	UG/L
ENDOSULFAN SULFATE	0.04	U	UG/L
ENDRIN	0.04	U	UG/L
ENDRIN ALDEHYDE	0.04	U	UG/L
GAMMA-BHC (LINDANE)	0.02	U	UG/L
HEPTACHLOR	0.02	U	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.05	U	UG/L
PARATHION, METHYL	0.05	U	UG/L
PHORATE	0.05	U	UG/L
TOXAPHENE	0.99	U	UG/L

Sample Number: I1MW1-1
Sample Date: 9/12/96
Laboratory ID: 9609266-11
QC Type: NORMAL
% Moisture: 0
Location: I1MW1-1

	RESULT	QUAL	UNITS
2,4,5-T	0.1	U	UG/L
2,4,5-TP(Silvex)	0.1	U	UG/L
2,4-D	0.1	U	UG/L
4,4'-DDD	0.04	U	UG/L
4,4'-DDE	0.04	U	UG/L
4,4'-DDT	0.04	U	UG/L
ALDRIN	0.02	U	UG/L
ALPHA-BHC	0.02	U	UG/L
AROCLOR-1016	0.12	U	UG/L
AROCLOR-1221	0.12	U	UG/L
AROCLOR-1232	0.12	U	UG/L
AROCLOR-1242	0.12	U	UG/L
AROCLOR-1248	0.12	U	UG/L
AROCLOR-1254	0.12	U	UG/L
AROCLOR-1260	0.12	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.25	U	UG/L
DELTA-BHC	0.02	U	UG/L
DIELDRIN	0.022	J	UG/L
ENDOSULFAN I	0.02	U	UG/L
ENDOSULFAN II	0.04	U	UG/L
ENDOSULFAN SULFATE	0.027	J	UG/L
ENDRIN	0.04	U	UG/L
ENDRIN ALDEHYDE	0.04	U	UG/L
GAMMA-BHC (LINDANE)	0.02	U	UG/L
HEPTACHLOR	0.02	U	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.05	U	UG/L
PARATHION, METHYL	0.05	U	UG/L
PHORATE	0.05	U	UG/L
TOXAPHENE	1	U	UG/L

Sample Number: I1MW1-2
Sample Date: 9/13/96
Laboratory ID: 9609266-17
QC Type: NORMAL
% Moisture: 0
Location: I1MW1-2

	RESULT	QUAL	UNIT
2,4,5-T	0.096	U	UG/l
2,4,5-TP(Silvex)	0.096	U	UG/l
2,4-D	0.096	U	UG/l
4,4'-DDD	1.3	J	UG/l
4,4'-DDE	2	U	UG/L
4,4'-DDT	2	U	UG/L
ALDRIN	0.99	U	UG/L
ALPHA-BHC	0.99	U	UG/L
AROCLOR-1016	6.2	U	UG/L
AROCLOR-1221	6.2	U	UG/L
AROCLOR-1232	6.2	U	UG/L
AROCLOR-1242	6.2	U	UG/L
AROCLOR-1248	6.2	U	UG/L
AROCLOR-1254	6.2	U	UG/L
AROCLOR-1260	6.2	U	UG/L
BETA-BHC	0.99	U	UG/L
CHLORDANE	57.9		UG/L
DELTA-BHC	0.99	U	UG/L
DIELDRIN	2	U	UG/L
ENDOSULFAN I	5.9	J	UG/L
ENDOSULFAN II	2	U	UG/L
ENDOSULFAN SULFATE	2	U	UG/L
ENDRIN	2	U	UG/L
ENDRIN ALDEHYDE	2	U	UG/L
GAMMA-BHC (LINDANE)	0.99	U	UG/L
HEPTACHLOR	1		UG/L
HEPTACHLOR EPOXIDE	0.99	U	UG/L
METHOXYCHLOR	9.9	U	UG/L
PARATHION	2.5	U	UG/L
PARATHION, METHYL	2.5	U	UG/L
PHORATE	2.5	U	UG/L
TOXAPHENE	49.5	U	UG/L

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Sample Number: I1MW1-3
Sample Date: 9/13/96
Laboratory ID: 9609266-19
QC Type: NORMAL
% Moisture: 0
Location: I1MW1-3

	RESULT	QUAL	UNITS
2,4,5-TP (SILVEX)	0.1	U	UG/L
4,4'-DDD	0.04	U	UG/L
4,4'-DDE	0.04	U	UG/L
4,4'-DDT	0.04	U	UG/L
ALDRIN	0.02	U	UG/L
ALPHA-BHC	0.015	J	UG/L
AROCLOR-1016	0.12	U	UG/L
AROCLOR-1221	0.12	U	UG/L
AROCLOR-1232	0.12	U	UG/L
AROCLOR-1242	0.12	U	UG/L
AROCLOR-1248	0.12	U	UG/L
AROCLOR-1254	0.12	U	UG/L
AROCLOR-1260	0.12	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.25	U	UG/L
DELTA-BHC	0.02	U	UG/L
DIELDRIN	0.04	U	UG/L
ENDOSULFAN I	0.011	J	UG/L
ENDOSULFAN II	0.04	U	UG/L
ENDOSULFAN SULFATE	0.04	U	UG/L
ENDRIN	0.04	U	UG/L
ENDRIN ALDEHYDE	0.04	U	UG/L
GAMMA-BHC (LINDANE)	0.024		UG/L
HEPTACHLOR	0.02	U	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.05	U	UG/L
PARATHION, METHYL	0.05	U	UG/L
PHORATE	0.05	U	UG/L
TOXAPHENE	0.99	U	UG/L

Sample Number: I1MW3-1
Sample Date: 9/13/96
Laboratory ID: 9609266-19
QC Type: NORMAL
% Moisture: 0
Location: I1MW1-3

	RESULT	QUAL	UNITS
2,4,5-T	0.1	U	UG/L
2,4-D	0.1	U	UG/L

Sample Number: I7DPGW
Sample Date: 9/11/96
Laboratory ID: 9609266-08
QC Type: NORMAL
% Moisture: 0
Location: I7DPGW

	RESULT	QUAL	UNI
2,4,5-T	0.1	U	UG
2,4,5-TP(Silvex)	0.1	U	UG/
2,4-D	0.1	U	UG/
4,4'-DDD	0.04	U	UG/
4,4'-DDE	0.04	U	UG/
4,4'-DDT	0.04	U	UG/
ALDRIN	0.014	J	UG/
ALPHA-BHC	0.02	J	UG/
AROCLOR-1016	0.12	U	UG/
AROCLOR-1221	0.12	U	UG/
AROCLOR-1232	0.12	U	UG/
AROCLOR-1242	0.12	U	UG/
AROCLOR-1248	0.12	U	UG/
AROCLOR-1254	0.12	U	UG/
AROCLOR-1260	0.12	U	UG/
BETA-BHC	0.02	U	UG/
CHLORDANE	0.25	U	UG/
DELTA-BHC	0.017	J	UG/
DIELDRIN	0.028	J	UG/
ENDOSULFAN I	0.02	U	UG/
ENDOSULFAN II	0.04	U	UG/
ENDOSULFAN SULFATE	0.048		UG/
ENDRIN	0.021	J	UG/
ENDRIN ALDEHYDE	0.04	U	UG/
GAMMA-BHC (LINDANE)	1.7	J	UG/
HEPTACHLOR	0.01	J	UG/
HEPTACHLOR EPOXIDE	0.02	U	UG/
METHOXYCHLOR	0.2	U	UG/
PARATHION	0.05	U	UG/
PARATHION, METHYL	0.05	U	UG/
PHORATE	0.05	U	UG/
TOXAPHENE	0.99	U	UG/

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Sample Number: I7KWM-12
Sample Date: 9/11/96
Laboratory ID: 9609266-09
QC Type: NORMAL
% Moisture: 0
Location: I7KWM-12

	RESULT	QUAL	UNITS
2,4,5-T	0.1	U	UG/L
2,4,5-TP (SILVEX)	0.1	U	UG/L
2,4-D	0.1	U	UG/L
4,4'-DDD	0.039	U	UG/L
4,4'-DDE	0.039	U	UG/L
4,4'-DDT	0.039	U	UG/L
ALDRIN	0.016	J	UG/L
ALPHA-BHC	0.015	J	UG/L
AROCLOR-1016	0.12	U	UG/L
AROCLOR-1221	0.12	U	UG/L
AROCLOR-1232	0.12	U	UG/L
AROCLOR-1242	0.12	U	UG/L
AROCLOR-1248	0.12	U	UG/L
AROCLOR-1254	0.12	U	UG/L
AROCLOR-1260	0.12	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.24	U	UG/L
DELTA-BHC	0.016	J	UG/L
DIELDRIN	0.025	J	UG/L
ENDOSULFAN I	0.019	J	UG/L
ENDOSULFAN II	0.039	U	UG/L
ENDOSULFAN SULFATE	0.039	U	UG/L
ENDRIN	0.022	J	UG/L
ENDRIN ALDEHYDE	0.039	U	UG/L
GAMMA-BHC (LINDANE)	0.2	J	UG/L
HEPTACHLOR	0.012	J	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.049	U	UG/L
PARATHION, METHYL	0.049	U	UG/L
PHORATE	0.049	U	UG/L
TOXAPHENE	0.98	U	UG/L

Sample Number: I7MW-1
Sample Date: 9/10/96
Laboratory ID: 9609266-01
QC Type: NORMAL
% Moisture: 0
Location: I7MW-1

	RESULT	QUAL	UNITS
2,4,5-T	0.099	U	UG/L
2,4,5-TP (SILVEX)	0.099	U	UG/L
2,4-D	0.099	U	UG/L
4,4'-DDD	0.04	UJ	UG/L
4,4'-DDE	0.04	UJ	UG/L
4,4'-DDT	0.04	UJ	UG/L
ALDRIN	0.02	UJ	UG/L
ALPHA-BHC	0.018	J	UG/L
AROCLOR-1016	0.12	UJ	UG/L
AROCLOR-1221	0.12	UJ	UG/L
AROCLOR-1232	0.12	UJ	UG/L
AROCLOR-1242	0.12	UJ	UG/L
AROCLOR-1248	0.12	UJ	UG/L
AROCLOR-1254	0.12	UJ	UG/L
AROCLOR-1260	0.12	UJ	UG/L
BETA-BHC	0.02	UJ	UG/L
CHLORDANE	0.25	UJ	UG/L
DELTA-BHC	0.02	UJ	UG/L
DIELDRIN	0.026	J	UG/L
ENDOSULFAN I	0.014	J	UG/L
ENDOSULFAN II	0.04	UJ	UG/L
ENDOSULFAN SULFATE	0.04	UJ	UG/L
ENDRIN	0.04	UJ	UG/L
ENDRIN ALDEHYDE	0.04	UJ	UG/L
GAMMA-BHC (LINDANE)	0.016	J	UG/L
HEPTACHLOR	0.02	UJ	UG/L
HEPTACHLOR EPOXIDE	0.02	UJ	UG/L
METHOXYCHLOR	0.2	UJ	UG/L
PARATHION	0.05	UJ	UG/L
PARATHION, METHYL	0.05	UJ	UG/L
PHORATE	0.05	UJ	UG/L
TOXAPHENE	0.99	UJ	UG/L

Sample Number: I7MW7-1
Sample Date: 9/11/96
Laboratory ID: 9609266-10
QC Type: NORMAL
% Moisture: 0
Location: I7MW7-1

	RESULT	QUAL	UNI
2,4,5-T	0.099	U	UG
2,4,5-TP (SILVEX)	0.099	U	UG
2,4-D	0.099	U	UG
4,4'-DDD	0.04	U	UG
4,4'-DDE	0.04	U	UG
4,4'-DDT	0.04	U	UG
ALDRIN	0.02	U	UG
ALPHA-BHC	0.02	U	UG
AROCLOR-1016	0.12	U	UG
AROCLOR-1221	0.12	U	UG
AROCLOR-1232	0.12	U	UG
AROCLOR-1242	0.12	U	UG
AROCLOR-1248	0.12	U	UG
AROCLOR-1254	0.12	U	UG
AROCLOR-1260	0.12	U	UG
BETA-BHC	0.02	U	UG
CHLORDANE	0.25	U	UG
DELTA-BHC	0.015	J	UG
DIELDRIN	0.04	U	UG
ENDOSULFAN I	0.02	U	UG
ENDOSULFAN II	0.04	U	UG
ENDOSULFAN SULFATE	0.04	U	UG
ENDRIN	0.04	U	UG
ENDRIN ALDEHYDE	0.04	U	UG
GAMMA-BHC (LINDANE)	0.022	J	UG
HEPTACHLOR	0.02	U	UG
HEPTACHLOR EPOXIDE	0.02	U	UG
METHOXYCHLOR	0.2	U	UG
PARATHION	0.05	U	UG
PARATHION, METHYL	0.05	U	UG
PHORATE	0.05	U	UG
TOXAPHENE	1	U	UG

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69266W

PESTICIDES/PCBs

Sample Number: I7MW7-10
Sample Date: 9/10/96
Laboratory ID: 9609266-04
QC Type: NORMAL
% Moisture: 0
Location: I7MW7-10

	RESULT	QUAL	UNITS
2,4,5-T	0.1	U	UG/L
2,4,5-TP (SILVEX)	0.1	U	UG/L
2,4-D	0.1	U	UG/L
4,4'-DDD	0.04	UJ	UG/L
4,4'-DDE	0.04	UJ	UG/L
4,4'-DDT	0.04	UJ	UG/L
ALDRIN	0.02	UJ	UG/L
ALPHA-BHC	0.02	UJ	UG/L
AROCLOR-1016	0.12	UJ	UG/L
AROCLOR-1221	0.12	UJ	UG/L
AROCLOR-1232	0.12	UJ	UG/L
AROCLOR-1242	0.12	UJ	UG/L
AROCLOR-1248	0.12	UJ	UG/L
AROCLOR-1254	0.12	UJ	UG/L
AROCLOR-1260	0.12	UJ	UG/L
BETA-BHC	0.02	UJ	UG/L
CHLORDANE	0.25	UJ	UG/L
DELTA-BHC	0.019	J	UG/L
DIELDRIN	0.03	J	UG/L
ENDOSULFAN I	0.017	J	UG/L
ENDOSULFAN II	0.04	UJ	UG/L
ENDOSULFAN SULFATE	0.04	UJ	UG/L
ENDRIN	0.04	UJ	UG/L
ENDRIN ALDEHYDE	0.04	UJ	UG/L
GAMMA-BHC (LINDANE)	0.14	J	UG/L
HEPTACHLOR	0.02	UJ	UG/L
HEPTACHLOR EPOXIDE	0.02	UJ	UG/L
METHOXYCHLOR	0.2	UJ	UG/L
PARATHION	0.05	UJ	UG/L
PARATHION, METHYL	0.05	UJ	UG/L
PHORATE	0.05	UJ	UG/L
TOXAPHENE	0.99	UJ	UG/L

Sample Number: I7MW7-2
Sample Date: 9/10/96
Laboratory ID: 9609266-02
QC Type: NORMAL
% Moisture: 0
Location: I7MW7-2

	RESULT	QUAL	UNITS
2,4,5-T	0.1	U	UG/L
2,4,5-TP (SILVEX)	0.1	U	UG/L
2,4-D	0.1	U	UG/L
4,4'-DDD	0.029	J	UG/L
4,4'-DDE	0.028	J	UG/L
4,4'-DDT	0.026	J	UG/L
ALDRIN	0.02	UJ	UG/L
ALPHA-BHC	0.02	UJ	UG/L
AROCLOR-1016	0.12	UJ	UG/L
AROCLOR-1221	0.12	UJ	UG/L
AROCLOR-1232	0.12	UJ	UG/L
AROCLOR-1242	0.12	UJ	UG/L
AROCLOR-1248	0.12	UJ	UG/L
AROCLOR-1254	0.12	UJ	UG/L
AROCLOR-1260	0.12	UJ	UG/L
BETA-BHC	0.02	UJ	UG/L
CHLORDANE	0.24	UJ	UG/L
DELTA-BHC	0.02	UJ	UG/L
DIELDRIN	0.028	J	UG/L
ENDOSULFAN I	0.012	J	UG/L
ENDOSULFAN II	0.039	UJ	UG/L
ENDOSULFAN SULFATE	0.039	UJ	UG/L
ENDRIN	0.039	UJ	UG/L
ENDRIN ALDEHYDE	0.039	UJ	UG/L
GAMMA-BHC (LINDANE)	0.02	UJ	UG/L
HEPTACHLOR	0.02	UJ	UG/L
HEPTACHLOR EPOXIDE	0.02	UJ	UG/L
METHOXYCHLOR	0.2	UJ	UG/L
PARATHION	0.049	UJ	UG/L
PARATHION, METHYL	0.049	UJ	UG/L
PHORATE	0.049	UJ	UG/L
TOXAPHENE	0.98	UJ	UG/L

Sample Number: I7MW7-3
Sample Date: 9/11/96
Laboratory ID: 9609266-07
QC Type: NORMAL
% Moisture: 0
Location: I7MW7-3

	RESULT	QUAL	UNIT
2,4,5-T	0.1	U	UG/
2,4,5-TP (SILVEX)	0.1	U	UG/
2,4-D	0.1	U	UG/
4,4'-DDD	0.04	U	UG/
4,4'-DDE	0.04	U	UG/
4,4'-DDT	0.04	U	UG/
ALDRIN	0.02	U	UG/
ALPHA-BHC	0.18	J	UG/
AROCLOR-1016	0.12	U	UG/
AROCLOR-1221	0.12	U	UG/L
AROCLOR-1232	0.12	U	UG/L
AROCLOR-1242	0.12	U	UG/L
AROCLOR-1248	0.12	U	UG/L
AROCLOR-1254	0.12	U	UG/L
AROCLOR-1260	0.12	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.25	U	UG/L
DELTA-BHC	0.017	J	UG/L
DIELDRIN	0.029	J	UG/L
ENDOSULFAN I	0.02	U	UG/L
ENDOSULFAN II	0.04	U	UG/L
ENDOSULFAN SULFATE	0.054	J	UG/L
ENDRIN	0.028	J	UG/L
ENDRIN ALDEHYDE	0.04	U	UG/L
GAMMA-BHC (LINDANE)	0.43	J	UG/L
HEPTACHLOR	0.012	J	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.05	U	UG/L
PARATHION, METHYL	0.05	U	UG/L
PHORATE	0.05	U	UG/L
TOXAPHENE	0.99	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69266W

PESTICIDES/PCBs

Sample Number: I7MW7-4
Sample Date: 9/10/96
Laboratory ID: 9609266-03
QC Type: NORMAL
% Moisture: 0
Location: I7MW7-4

	RESULT	QUAL	UNITS
2,4,5-T	0.1	U	UG/L
2,4,5-TP(Silvex)	0.1	U	UG/L
2,4-D	0.1	U	UG/L
4,4'-DDD	0.04	UJ	UG/L
4,4'-DDE	0.04	UJ	UG/L
4,4'-DDT	0.04	UJ	UG/L
ALDRIN	0.02	UJ	UG/L
ALPHA-BHC	0.02	UJ	UG/L
AROCLOR-1016	0.12	UJ	UG/L
AROCLOR-1221	0.12	UJ	UG/L
AROCLOR-1232	0.12	UJ	UG/L
AROCLOR-1242	0.12	UJ	UG/L
AROCLOR-1248	0.12	UJ	UG/L
AROCLOR-1254	0.12	UJ	UG/L
AROCLOR-1260	0.12	UJ	UG/L
BETA-BHC	0.02	UJ	UG/L
CHLORDANE	0.25	UJ	UG/L
DELTA-BHC	0.016	J	UG/L
DIELDRIN	0.04	UJ	UG/L
ENDOSULFAN I	0.02	J	UG/L
ENDOSULFAN II	0.04	UJ	UG/L
ENDOSULFAN SULFATE	0.04	UJ	UG/L
ENDRIN	0.04	UJ	UG/L
ENDRIN ALDEHYDE	0.04	UJ	UG/L
GAMMA-BHC (LINDANE)	1	J	UG/L
HEPTACHLOR	0.02	UJ	UG/L
HEPTACHLOR EPOXIDE	0.02	UJ	UG/L
METHOXYCHLOR	0.2	UJ	UG/L
PARATHION	0.05	UJ	UG/L
PARATHION, METHYL	0.05	UJ	UG/L
PHORATE	0.05	UJ	UG/L
TOXAPHENE	0.99	UJ	UG/L

Sample Number: I7MW7-5
Sample Date: 9/10/96
Laboratory ID: 9609266-05
QC Type: NORMAL
% Moisture: 0
Location: I7MW7-5

	RESULT	QUAL	UNITS
2,4,5-T	0.099	U	UG/L
2,4,5-TP (SILVEX)	0.099	U	UG/L
2,4-D	0.099	U	UG/L
4,4'-DDD	0.038	J	UG/L
4,4'-DDE	0.04	UJ	UG/L
4,4'-DDT	0.04	UJ	UG/L
ALDRIN	0.02	UJ	UG/L
ALPHA-BHC	0.02	UJ	UG/L
AROCLOR-1016	0.12	UJ	UG/L
AROCLOR-1221	0.12	UJ	UG/L
AROCLOR-1232	0.12	UJ	UG/L
AROCLOR-1242	0.12	UJ	UG/L
AROCLOR-1248	0.12	UJ	UG/L
AROCLOR-1254	0.12	UJ	UG/L
AROCLOR-1260	0.12	UJ	UG/L
BETA-BHC	0.02	UJ	UG/L
CHLORDANE	0.25	UJ	UG/L
DELTA-BHC	0.018	J	UG/L
DIELDRIN	0.033	J	UG/L
ENDOSULFAN I	0.031	J	UG/L
ENDOSULFAN II	0.04	UJ	UG/L
ENDOSULFAN SULFATE	0.04	UJ	UG/L
ENDRIN	0.04	UJ	UG/L
ENDRIN ALDEHYDE	0.04	UJ	UG/L
GAMMA-BHC (LINDANE)	0.28	J	UG/L
HEPTACHLOR	0.011	J	UG/L
HEPTACHLOR EPOXIDE	0.02	UJ	UG/L
METHOXYCHLOR	0.2	UJ	UG/L
PARATHION	0.05	UJ	UG/L
PARATHION, METHYL	0.05	UJ	UG/L
PHORATE	0.05	UJ	UG/L
TOXAPHENE	0.99	UJ	UG/L

Sample Number: I7MW7-6
Sample Date: 9/11/96
Laboratory ID: 9609266-06
QC Type: NORMAL
% Moisture: 0
Location: I7MW7-6

	RESULT	QUAL	UNIT
2,4,5-T	0.099	U	UG/
2,4,5-TP (SILVEX)	0.099	U	UG/
2,4-D	0.099	U	UG/
4,4'-DDD	0.04	UJ	UG/
4,4'-DDE	0.04	UJ	UG/
4,4'-DDT	0.04	UJ	UG/
ALDRIN	0.02	UJ	UG/
ALPHA-BHC	0.02	UJ	UG/
AROCLOR-1016	0.12	UJ	UG/
AROCLOR-1221	0.12	UJ	UG/
AROCLOR-1232	0.12	UJ	UG/
AROCLOR-1242	0.12	UJ	UG/
AROCLOR-1248	0.12	UJ	UG/
AROCLOR-1254	0.12	UJ	UG/
AROCLOR-1260	0.12	UJ	UG/
BETA-BHC	0.02	UJ	UG/
CHLORDANE	0.18	J	UG/
DELTA-BHC	0.02	UJ	UG/
DIELDRIN	0.022	J	UG/
ENDOSULFAN I	0.032	J	UG/
ENDOSULFAN II	0.04	UJ	UG/
ENDOSULFAN SULFATE	0.04	UJ	UG/
ENDRIN	0.027	J	UG/
ENDRIN ALDEHYDE	0.04	UJ	UG/
GAMMA-BHC (LINDANE)	0.41	J	UG/
HEPTACHLOR	0.02	UJ	UG/
HEPTACHLOR EPOXIDE	0.02	UJ	UG/
METHOXYCHLOR	0.2	UJ	UG/
PARATHION	0.05	UJ	UG/
PARATHION, METHYL	0.05	UJ	UG/
PHORATE	0.05	UJ	UG/
TOXAPHENE	0.99	UJ	UG/

INORGANIC DATA VALIDATION

Brown & Root Environmental INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**January 7, 1997**
FROM:	**JULEA F. BRADLEY**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION – TAL METALS AND CYANIDE**
CTO 007 – KEY WEST, FLORIDA
SDG – 69285W

SAMPLES: 18/Aqueous/

ABSW-1	ABSW-2	ABSW-3	ABSW-4
ABSW-5	ABSW-7	ABSW-8	ABSW-9
B4SW	B5SW	I1DPGW-2	I1KWM-01
I1MW-7	S4SW-4	S4DPSW	S4SW-1
S4SW-2	S4SW-3		

Overview

The sample set for CTO 007, Key West, SDG 69285W, consists of eighteen (18) aqueous environmental samples. Two (2) field duplicate pairs (I1MW-7/I1DPGW-2 and S4SW-3/S4DPSW) are included within this SDG.

All samples were analyzed for Target Analyte List (TAL) metals and cyanide. The samples were collected by Brown and Root Environmental on September 13, 14, 15, and 16, 1996, and analyzed by General Engineering Laboratory under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

* • Data Completeness
• Holding Times
• Calibration Verifications
* • Laboratory Blank Analyses
* • ICP Interference Check Sample Results
* • Matrix Spike Results
• Laboratory Duplicate Results
• Laboratory Control Sample Results

* Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the validation recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/preparation/field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration		Action Level (aqueous)	
Arsenic	2.5	ug/L	12.5	ug/L
Barium	0.5	ug/L	2.5	ug/L
Beryllium	0.4	ug/L	2.0	ug/L
Cadmium	0.3	ug/L	1.5	ug/L
Calcium[1]	25.44	ug/L	127.2	ug/L
Chromium	1.1	ug/L	5.5	ug/L
Cyanide	2.1	ug/L	10.5	ug/L
Lead	1.6	ug/L	8	ug/L
Sodium[1]	112.2	ug/L	561	ug/L

Samples affected: All

[1] Maximum concentration found in an aqueous preparation blank.

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for arsenic, barium, chromium, lead, and cyanide have been qualified as nondetected "U." No action was taken for the remaining analytes since either the results were greater than the action level or were nondetects. It should be noted that field quality control samples are not qualified for field quality control blank contamination.

ICP Interference Check Sample Results

The interfering analytes calcium and magnesium were present in samples ABSW-1, ABSW-2, ABSW-3, ABSW-4, ABSW-5, ABSW-7, ABSW-8, ABSW-9, B4SW, B5SW, and I1KWM-01 at concentrations which were comparable to the levels of calcium and magnesium in the Interference Check Sample (ICS) solution. Several analytes namely antimony, arsenic, barium, cadmium, copper, manganese, potassium, selenium, sodium, thallium, vanadium, and zinc were present in the ICS solution at concentrations which exceeded the Instrument Detection Limit (IDL).

Interference affects due to high concentrations of calcium exist for antimony, cadmium, copper, manganese, thallium, and zinc in all of the affected samples listed above. Barium was affected only in ABSW-2, ABSW-4, ABSW-8, ABSW-9, B4SW, and B5SW. Positive results and nondetects reported for these analytes in the affected samples were qualified as estimated, "J" and "UJ," respectively. No validation actions were warranted for the positive results reported for arsenic in samples ABSW-3, ABSW-8, B4SW, and I1KWM-01 as all results were qualified as blank contamination.

Interference affects due to high concentrations of magnesium exist for antimony, barium, cadmium, copper, manganese, thallium, and zinc in the affected samples listed above. Positive results and nondetects reported for these analytes in the affected samples were qualified as estimated, "J" and "UJ," respectively. No validation actions were warranted for the positive results reported for arsenic in samples ABSW-3, ABSW-8, B4SW, and I1KWM-01 as all results were qualified as blank contamination. ICP Interference Check Sample worksheets are provided in Appendix C.

Matrix Spike Results

The Matrix Spike (MS) Percent Recovery (%R) for cyanide (20.8%) was extremely low. Nondetected results reported for the aforementioned analyte were qualified as rejected, "UR."

The MS %R for antimony (69.5%) is below the quality control limit. Positive results and nondetects reported for the aforementioned analyte were qualified as estimated, "J" and "UJ," respectively. The MS %R for selenium (127.1%) were above the quality control limit. Positive results reported for the selenium were qualified as estimated, "J."

The MS %R for magnesium was extremely high (222.8%); however, no validation action was taken because the environmental sample concentration was more than four times the spike concentration.

Notes

The Contract Required Detection Limit (CRDL) Standard Percent Recoveries (%Rs) for lead, mercury, vanadium, and zinc were outside the quality control limits. However, no validation actions were taken for CRDL %Rs.

A comparison of field duplicate pairs I1MW-7/I1DPGW-2 and S4SW-3/S4DPSW can be found in Appendix C. However, no validation actions are required for field duplicate imprecision.

No field blanks or rinsate blanks were reported in this sample delivery group.

Executive Summary

Laboratory Performance: Both initial and continuing calibration verification results were within the control limits for all analytes. Several analytes were present in the laboratory method/ preparation blanks.

Other Factors Affecting Data Quality: The interfering analytes calcium and magnesium were found in several samples. The MS %R for antimony was below the quality control limits, and the MS %R selenium was above the quality control limits.

The data for these analyses were reviewed in accordance with the "National Functional Guidelines for Inorganic Review," February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Brown & Root Environmental
Julea F. Bradley
Environmental Scientist/Data Validator

Brown & Root Environmental
Arnold Lamb
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

KEY WEST
SDG 69285W

TABLE 1 - RECOMMENDATION SUMMARY

Aluminum				Magnesium		
Antimony		J^2		Manganese	J^1	
Arsenic	A^1			Mercury		
Barium	A^1	J^1		Nickel		
Beryllium				Potassium		
Cadmium		J^1		Selenium	J^2	
Calcium				Silver		
Chromium	A^1			Sodium		
Cobalt				Thallium	J^1	
Copper		J^1		Vanadium		
Iron				Zinc	J^1	
Lead	A^1	J^1		Cyanide	A^1	R^1

If the field is left blank, the qualifier is A – Accept all data.

A^1 Accept data but qualify as nondetected, "U," as a result of laboratory blank contamination.

J^1 Accept data but qualify positive results and nondetects as estimated, "J" and "UJ," as a result of ICP interference.

J^2 Accept data but qualify positive results and nondetects as estimated, "J" and "UJ," as a result of low MS %Rs.

R^1 Reject nondetected data "UR," as a result of extremely low MS %R.

APPENDIX A
Qualified Analytical Results

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69285W

INORGANICS

Sample Number: ABSW-1
Sample Date: 9/14/96
Laboratory ID: 9609285-06
QC Type: NORMAL
% Moisture: 0
Location: ABSW-1

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	46.1	J	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	UJ	UG/L
CALCIUM	404000		UG/L
CHROMIUM	2.9	U	UG/L
COBALT	2	U	UG/L
COPPER	9.5	J	UG/L
CYANIDE, TOTAL	1.4	UR	UG/L
IRON	785		UG/L
LEAD	6.4	U	UG/L
MAGNESIUM	1120000		UG/L
MANGANESE	31.6	J	UG/L
MERCURY	0.1	U	UG/L
NICKEL	5.5		UG/L
POTASSIUM	358000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	8260000		UG/L
THALLIUM	4	UJ	UG/L
VANADIUM	2	U	UG/L
ZINC	2	UJ	UG/L

Sample Number: ABSW-2
Sample Date: 9/14/96
Laboratory ID: 9609285-05
QC Type: NORMAL
% Moisture: 0
Location: ABSW-2

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	31.5	J	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	UJ	UG/L
CALCIUM	435000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	9.4	J	UG/L
CYANIDE, TOTAL	1.4	UR	UG/L
IRON	328		UG/L
LEAD	6	U	UG/L
MAGNESIUM	1380000		UG/L
MANGANESE	34.2	J	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	420000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	9870000		UG/L
THALLIUM	4	UJ	UG/L
VANADIUM	2	U	UG/L
ZINC	2	UJ	UG/L

Sample Number: ABSW-3
Sample Date: 9/14/96
Laboratory ID: 9609285-07
QC Type: NORMAL
% Moisture: 0
Location: ABSW-3

	RESULT	QUAL	UNIT
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	5.6	U	UG/L
BARIUM	41	J	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	UJ	UG/L
CALCIUM	394000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	10.3	J	UG/L
CYANIDE, TOTAL	1.4	UR	UG/L
IRON	381		UG/L
LEAD	6	U	UG/L
MAGNESIUM	1160000		UG/L
MANGANESE	48.4	J	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	361000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	8370000		UG/L
THALLIUM	4	UJ	UG/L
VANADIUM	2	U	UG/L
ZINC	2	UJ	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69285W

INORGANICS

Sample Number: ABSW-4
Sample Date: 9/14/96
Laboratory ID: 9609285-02
QC Type: NORMAL
% Moisture: 0
Location: ABSW-4

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	27.3	J	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	UJ	UG/L
CALCIUM	467000		UG/L
CHROMIUM	2.2	U	UG/L
COBALT	2	U	UG/L
COPPER	7.3	J	UG/L
CYANIDE, TOTAL	1.4	UR	UG/L
IRON	1970		UG/L
LEAD	6.7	U	UG/L
MAGNESIUM	1370000		UG/L
MANGANESE	40.3	J	UG/L
MERCURY	0.16		UG/L
NICKEL	4	U	UG/L
POTASSIUM	429000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	9950000		UG/L
THALLIUM	4	UJ	UG/L
VANADIUM	2	U	UG/L
ZINC	2	UJ	UG/L

Sample Number: ABSW-5
Sample Date: 9/14/96
Laboratory ID: 9609285-08
QC Type: NORMAL
% Moisture: 0
Location: ABSW-5

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	45.6	J	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	UJ	UG/L
CALCIUM	501000		UG/L
CHROMIUM	3.1	U	UG/L
COBALT	2		UG/L
COPPER	11.8	J	UG/L
CYANIDE, TOTAL	1.4	UR	UG/L
IRON	900		UG/L
LEAD	7.2	U	UG/L
MAGNESIUM	1470000		UG/L
MANGANESE	42.8	J	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	457000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	10700000		UG/L
THALLIUM	4	UJ	UG/L
VANADIUM	2	U	UG/L
ZINC	2	UJ	UG/L

Sample Number: ABSW-7
Sample Date: 9/14/96
Laboratory ID: 9609285-03
QC Type: NORMAL
% Moisture: 0
Location: ABSW-7

	RESULT	QUAL	UNIT
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	34.4	J	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	UJ	UG/L
CALCIUM	382000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	UJ	UG/L
CYANIDE, TOTAL	1.4	UR	UG/L
IRON	227		UG/L
LEAD	4.8	U	UG/L
MAGNESIUM	1170000		UG/L
MANGANESE	38.3	J	UG/L
MERCURY	1.5		UG/L
NICKEL	41.2		UG/L
POTASSIUM	357000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	8400000		UG/L
THALLIUM	4	UJ	UG/L
VANADIUM	2	U	UG/L
ZINC	2	UJ	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69285W

INORGANICS

Sample Number: ABSW-8
Sample Date: 9/14/96
Laboratory ID: 9609285-09
QC Type: NORMAL
% Moisture: 0
Location: ABSW-8

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	5.6	U	UG/L
BARIUM	34.4	J	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	UJ	UG/L
CALCIUM	461000		UG/L
CHROMIUM	2.3	U	UG/L
COBALT	2	U	UG/L
COPPER	11.9	J	UG/L
CYANIDE, TOTAL	1.4	UR	UG/L
IRON	286		UG/L
LEAD	6.2	U	UG/L
MAGNESIUM	1390000		UG/L
MANGANESE	5.3	J	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	439000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	10200000		UG/L
THALLIUM	4.7	J	UG/L
VANADIUM	2	U	UG/L
ZINC	2	UJ	UG/L

Sample Number: ABSW-9
Sample Date: 9/14/96
Laboratory ID: 9609285-04
QC Type: NORMAL
% Moisture: 0
Location: ABSW-9

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	30.7	J	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	UJ	UG/L
CALCIUM	425000		UG/L
CHROMIUM	2.9	U	UG/L
COBALT	2	U	UG/L
COPPER	8.5	J	UG/L
CYANIDE, TOTAL	1.4	UR	UG/L
IRON	279		UG/L
LEAD	5.8	U	UG/L
MAGNESIUM	1340000		UG/L
MANGANESE	16.5	J	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	405000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	9620000		UG/L
THALLIUM	4	UJ	UG/L
VANADIUM	2	U	UG/L
ZINC	2	UJ	UG/L

Sample Number: B4SW
Sample Date: 9/16/96
Laboratory ID: 9609285-18
QC Type: NORMAL
% Moisture: 0
Location: B4SW

	RESULT	QUAL	UNIT
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	6.1	U	UG/L
BARIUM	6.6	J	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	UJ	UG/L
CALCIUM	416000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	UJ	UG/L
CYANIDE, TOTAL	1.5	UR	UG/L
IRON	4	U	UG/L
LEAD	3.2	U	UG/L
MAGNESIUM	1380000		UG/L
MANGANESE	2	UJ	UG/L
MERCURY	0.36		UG/L
NICKEL	4	U	UG/L
POTASSIUM	397000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	9500000		UG/L
THALLIUM	4	UJ	UG/L
VANADIUM	2	U	UG/L
ZINC	2	UJ	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69285W

INORGANICS

Sample Number: B5SW
Sample Date: 9/16/96
Laboratory ID: 9609285-19
QC Type: NORMAL
% Moisture: 0
Location: B5SW

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	6.5	J	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	UJ	UG/L
CALCIUM	436000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	UJ	UG/L
CYANIDE, TOTAL	1.4	UR	UG/L
IRON	4	U	UG/L
LEAD	5.1	U	UG/L
MAGNESIUM	1440000		UG/L
MANGANESE	2	UJ	UG/L
MERCURY	0.41		UG/L
NICKEL	4	U	UG/L
POTASSIUM	418000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	9910000		UG/L
THALLIUM	4	UJ	UG/L
VANADIUM	2	U	UG/L
ZINC	2	UJ	UG/L

Sample Number: I1DPGW-2
Sample Date: 9/16/96
Laboratory ID: 9609285-17
QC Type: NORMAL
% Moisture: 0
Location: I1DPGW-2

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	8.4	J	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	113000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4.3		UG/L
CYANIDE, TOTAL	1.4	UR	UG/L
IRON	4	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	29100		UG/L
MANGANESE	4.5		UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	12000		UG/L
SELENIUM	4.1	J	UG/L
SILVER	2	U	UG/L
SODIUM	85500		UG/L
THALLIUM	4	U	UG/L
VANADIUM	3.7	J	UG/L
ZINC	2	U	UG/L

Sample Number: I1KWM-01
Sample Date: 9/13/96
Laboratory ID: 9609285-01
QC Type: NORMAL
% Moisture: 0
Location: I1KWM-01

	RESULT	QUAL	UNIT
ALUMINUM	28	U	UG/L
ANTIMONY	10.3	J	UG/L
ARSENIC	5.3	U	UG/L
BARIUM	41.5	J	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	UJ	UG/L
CALCIUM	265000		UG/L
CHROMIUM	3.1	U	UG/L
COBALT	2.9		UG/L
COPPER	11.5	J	UG/L
CYANIDE, TOTAL	1.4	UR	UG/L
IRON	4	U	UG/L
LEAD	7	U	UG/L
MAGNESIUM	688000		UG/L
MANGANESE	8.8	J	UG/L
MERCURY	0.14		UG/L
NICKEL	4	U	UG/L
POTASSIUM	202000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	4670000		UG/L
THALLIUM	4	UJ	UG/L
VANADIUM	4.1	J	UG/L
ZINC	2	UJ	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69285W

INORGANICS

Sample Number: I1MW-7
Sample Date: 9/16/96
Laboratory ID: 9609285-16
QC Type: NORMAL
% Moisture: 0
Location: I1MW-7

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	7	J	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	112000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE, TOTAL	1.4	UR	UG/L
IRON	4	U	UG/L
LEAD	3.7	U	UG/L
MAGNESIUM	28100		UG/L
MANGANESE	4.1		UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	12100		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	91700		UG/L
THALLIUM	4	U	UG/L
VANADIUM	4.1	J	UG/L
ZINC	2	U	UG/L

Sample Number: S4DPSW
Sample Date: 9/15/96
Laboratory ID: 9609285-13
QC Type: NORMAL
% Moisture: 0
Location: S4DPSW

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4.5	U	UG/L
BARIUM	4.1	U	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	65000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE, TOTAL	1.4	, UR	UG/L
IRON	63		UG/L
LEAD	3.6	U	UG/L
MAGNESIUM	154000		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	50000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	975000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: S4SW-1
Sample Date: 9/15/96
Laboratory ID: 9609285-10
QC Type: NORMAL
% Moisture: 0
Location: S4SW-1

	RESULT	QUAL	UNIT
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	3.4	U	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	UJ	UG/L
CALCIUM	57200		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	UJ	UG/L
CYANIDE, TOTAL	1.4	UR	UG/L
IRON	8.5		UG/L
LEAD	3.5	U	UG/L
MAGNESIUM	135000		UG/L
MANGANESE	2	UJ	UG/L
MERCURY	0.6		UG/L
NICKEL	4	U	UG/L
POTASSIUM	43300		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	863000		UG/L
THALLIUM	4	UJ	UG/L
VANADIUM	2	U	UG/L
ZINC	2	UJ	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69285W

INORGANICS

Sample Number: S4SW-2
Sample Date: 9/15/96
Laboratory ID: 9609285-11
QC Type: NORMAL
% Moisture: 0
Location: S4SW-2

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	3.8	U	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	65300		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE, TOTAL	1.4	UR	UG/L
IRON	17.1		UG/L
LEAD	3	U	UG/L
MAGNESIUM	149000		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.53		UG/L
NICKEL	4	U	UG/L
POTASSIUM	51600		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	938000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: S4SW-3
Sample Date: 9/15/96
Laboratory ID: 9609285-12
QC Type: NORMAL
% Moisture: 0
Location: S4SW-3

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	3.6	U	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	69000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE, TOTAL	1.4	UR	UG/L
IRON	35.3		UG/L
LEAD	3	U	UG/L
MAGNESIUM	147000		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	47200		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	942000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: S4SW-4
Sample Date: 9/16/96
Laboratory ID: 9609285-14
QC Type: NORMAL
% Moisture: 0
Location: S4SW-4

	RESULT	QUAL	UNIT
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	2.1	U	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	45600		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE, TOTAL	1.4	UR	UG/L
IRON	4	U	UG/L
LEAD	3.1	U	UG/L
MAGNESIUM	15200		UG/L
MANGANESE	3.9		UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	6820		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	102000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

ORGANIC DATA VALIDATION

TO:	**Chuck Bryan**	**DATE:**	**JANUARY 07, 1997**
FROM:	**R. Marty Ray**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA REVIEW - VOA/SVOA/PEST/PCB/HERB ORGANICS**
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG 69285W

SAMPLES: Waters:

I1KWM-01	ABSW-1	S4SW-2	I1MW-7
ABSW-4	ABSW-3	S4SW-3	I1MW-2
ABSW-7	ABSW-5	S4DPSW	B4SW
ABSW-9	ABSW-8	S4SW-4	B5SW
ABSW-2	S4SW-1	TB03-091696	TB04-091796
S4SW-4CFO	S4SW-2CFO	S4SW-3CFO	

The sample set for the CTO 007 NAS Key West site, SDG 69285W, consists of twenty three (23) water environmental samples. All samples were analyzed for Appendix IX volatile and semivolatile compounds, plus the samples were also analyzed for Target Compound List (TCL) pesticide/PCB and herbicide organic compounds. Two field duplicate pairs were included in this SDG (I1MW-7/I1DPGW-2, and S4SW-3/S4DPSW).

The samples were collected by Brown & Root Environmental on September 16th, and 17th, 1996 and analyzed by General Engineering Laboratories, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Methods 8240, 8270, 8080 and 8150 analytical and reporting protocols. The data were evaluated according to the following parameters:

- Data Completeness
- Holding times
- GC/MS Tuning
- * Initial and continuing calibrations
- * Laboratory and field blank analyses
- * Surrogate spike recoveries
- Matrix Spike/Matrix Spike Duplicate analysis
- Blank Spike/Blank Spike Duplicate results
- * Internal Standards
- Field Duplicate Precision
- Instrument Performance
- Compound Identification
- Compound Quantification
- Detection Limits

Overall assessment of data

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the recommended review qualifications.

Volatiles

Initial and continuing calibration Relative Response Factors (RRF) for acrolein, isobutyl alcohol, methacrylonitrile, and propionitrile were reported less than the 0.050 quality control limit. Both positive and non-detected results are affected by these noncompliances. As a result of this major calibration noncompliance, nondetected results for the aforementioned compounds are considered unreliable and were rejected, (UR), in the affected samples. The affected samples are: S4SW-1, S4DPSW, S4SW-4CFO, and S4SW-2CFO.

The following volatile compounds were detected in the low level laboratory method blank at the maximum concentrations indicated below:

Compound	Maximum Concentration	Action Level
Methylene Chloride	9.8 µg/L	98 µg/L
Acetone	20.0 µg/L	200 µg/L
Toluene	.58 µg/L	2.9 µg/L
1,1,2-Trichloroethane	.28 µg/L	1.4 µg/L
Bromoform	.35 µg/L	1.75 µg/L
4-Methyl-2-pentanone	1.5 µg/L	7.5 µg/L
1,1,2,2-Tetrachloroethane	.62 µg/L	3.1 µg/L
Trans-1,4-Dichloro-2-butene	1.3 µg/L	6.5 µg/L
bis(2-Chloro-isopropyl)ether	5.5 µg/L	27.5 µg/L

Samples Affected: S4SW-1, S4SW-2, S4SW-3, S4DPSW, S4SW-4, TB03-091696, TB04-091796.

Positive results in the affected samples for the above compounds reported at concentrations below the detection limit were replaced with revised detection limits and qualified nondetected, (U). Undetected results for these compounds were qualified as undetected estimate, (UJ) in the affected samples.

It was noted that the laboratory case narrative indicated the laboratory method blank to be contaminated with 1,1,2-trichloromethane not 1,1,2-trichloroethane as it should have been noted.

Surrogate Percent Recoveries (%Rs) were reported above the quality control limits and poor internal standard areas were reported in samples S4SW-3, S4SW3CFO, S4SW-2, S4SW-4, and S4SW4CFO for Dibromofluoromethane. Positive results for Dibromofluoromethane in S4SW-3, and S4SW-3CFO were qualified as estimates (J). None of the other samples were qualified due to no positive results reported.

Initial and continuing calibration RRFs for Isobutyl Alcohol were reported less than the 0.050 quality control limit. A continuing calibration RRF less than 0.050 was reported for Acrolein, and Methacrylonitrile. Both positive and nondetected results are affected by this noncompliance. As a result of this major calibration

noncompliance, nondetected results for these compounds are considered unreliable and were rejected, (UR), in the affected samples. The affected samples are: S4SW-1, S4DPSW, S4SW-4CFO, and S4SW-2CFO.

Continuing calibration RRFs for Methylene Chloride were reported less than the 0.050 quality control limit. No action was taken as it was previously qualified for blank contamination.

Continuing calibration %D for Acetone, Vinyl Acetate, Acrolein, Dichlorodifluoromethane, Acrylonitrile, Methylene chloride, 2-hexanone, 1,2,3-Trichloropropane, Idomethane, Carbon Disulfide, 2-butanone, and bis (2-Chloro-isopropyl) ether were reported greater than the 30% quality control limit. Acetone and Acrolein were not qualified for the %D noncompliance as they were previously rejected due to RRF noncompliance. Positive results for the remaining compounds were qualified as estimated (J). Nondetects sample results were estimated and qualified as (UJ). The affected samples are: S4SW-2, S4SW-3, S4DPSW, S4SW-4, TB03-091696, S4SW-2CFO, AND TB04-091796.

No other problems were noted

Semivolatiles

A poor surrogate %R were reported in two surrogates for acid in samples S4SW-2 and S4SW-3 . The laboratory reanalyzed sample S4SW-2REO and reported improved results. However the original analysis of sample S4SW-2 was chosen for validation since the hold time lapsed by several weeks before sample reanalysis. For S4SW-2 which reported recovery greater than 10% but lower than the lower acceptance limit (LL), detected target compounds were qualified as estimated (J) and non-detected target compounds were estimated as (UJ). For S4SW-3 three acids were reported lower than 10% and all non-detected target compounds were qualified as rejected (UR).

No other problems were noted.

Pesticide/PCBs

Performance evaluation mixtures analyzed at 17:03 on October 1, 1996 reported high %Ds in both columns for 4,4'-DDD. The affected samples are; I1KWM-01, ABSW-4, ABSW-7, ABSW-9, ABSW-2, and ABSW-1. Non-detected results for this compound were qualified as non-detected estimate (UJ) for the affected samples.

For sample ABSW-3 a surrogate % recovery was reported for column two (2) that was slightly below the quality control limits. However, no action was taken due the fact that the % recovery within the quality control limits was reported for column one (1).

Initial calibration data for standard mixture A on October 3, 1996 reports Chlordane (tech) (2), Chlordane (tech) (4), and Chlordane (tech) (5) with R^2 below the quality control limits. No action was taken since Chlordane (tech) (1) and Chlordane (tech) (3) reported R^2 within the quality control limits.

Initial calibration data was not reported for Aroclor-1221, Aroclor-1232, Aroclor 1254, and Aroclor 1242 for the initial calibration conducted on October 3, 1996 for standard mixture A. However no action was taken since acceptable initial calibration data was reported for Aroclor-1016, and Aroclor-1260

Initial calibration data for standard mixture B on October 3, 1996 reports Chlordane (tech) (2), Chlordane (tech) (3), and Chlordane (tech) (4) with R^2 below the quality control limits. No action was taken since Chlordane (tech) (1) and Chlordane (tech) (5) reported R^2 within the quality control limits.

Initial calibration data was not reported for Aroclor-1221, Aroclor-1232, and Aroclor-1242 for the initial calibration conducted on October 3, 1996 for standard mixture B. However no action was taken since acceptable initial calibration data was reported for Aroclor-1016, Aroclor-1248, Aroclor-1254 and Aroclor-1260.

Initial calibration data was not reported for Aroclor-1221, Aroclor-1232, and Aroclor 1242 for the initial calibration conducted on October 23,1996 for standard mixture B. However no action was taken since acceptable initial calibration data was reported for Aroclor-1016, Aroclor-1254, and Aroclor-1260.

No other problems were noted.

Herbicides

No problems were noted.

Executive Summary

Laboratory Performance: Initial and/or continuing calibration RRFs for Isobutyl Alcohol, Acrolein, Methacrylonitrile, and Methylene Chloride were reported less than the 0.050 quality control limit. An initial calibration %RSD greater than the 30% quality control limit was reported for Dibromomethane. A continuing calibration reported a %RSD greater than the 30% quality control limit for Vinyl Acetate, Dichlorodifluoromethane, Acrylonitrile, 2-hexanone, 1,2,3-Trichloropropane, Idomethane, Carbon Disulfide, 2-Butanone, bis (2-Chloro-isopropyl)ether. Methylene Chloride, Acetone, Toluene, 1,1,2-Trichloroethane, Bromoform, 4-Methyl-2-pentanone, 1,1,2,2- tetrachloroethane, Trans-1,4-Dichloro-2-butene, and bis(2-Chloro-isopropyl) ether were reported in volatile laboratory method blank. Low surrogate %R were reported for the semivolatile fraction for samples S4SW-2 and S4SW-3. Performance Evaluation Mixtures reported high %Ds in both columns for 4,4'-DDD which affected samples I1KWM-01, ABSW-4, ABSW-7, ABSW-9, ABSW-2, and ABSW-1. The individual Standard Mixtures A and B contained numerous compounds with %Rs below the lower quality limit.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

R. Marty Ray

Brown & Root Environmental

R. Marty Ray
Environmental Scientist/Data Validator

Brown & Root Environmental

Arnold C. Lamb
District Quality Assurance Manager

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

NAS KEY WEST

SDG 69285W

TABLE 1 - RECOMMENDATION SUMMARY

Sample No.	VOA	BNA	PEST/PCB	HERB
I1KWM-01			J^4	
ABSW-4			J^4	
ABSW-7			J^4	
ABSW-9			J^4	
ABSW-2			J^4	
ABSW-1			J^4	
ABSW-3				
ABSW-5				
ABSW-8				
S4SW-1	A^1 R^1 R^3			
S4SW-2	A^1 R^1 J^2	J^3		
S4SW-3	A^1 J^1 R^1 J^2	R^2		
S4DPSW	A^1 R^1 J^2 R^3			
S4SW-4	A^1 R^1 J^2			
TB03-091696	A^1 R^1 J^2			
I1MW-7				
I1MW-2				
B4SW				
B5SW				
S4SW-4CFO	R^1 R^3			
S4SW-2CFO	R^1 J^2 R^3			
S4SW-3CFO	J^1 R^1			
TB04-091796	A^1 R^1 J^2			

If the field is left blank, the qualifier is A - Accept all data.

A^1 - Accept data, but change positive results for methylene chloride, Acetone, Toluene, 1,1,2-Trichloroethane, Bromoform, 4-Methyl-2-pentanone, 1,1,2,2- tetrachloroethane, Trans-1,4-Dichloro-2-butene, and bis(2-Chloro-isopropyl) ether to a revised detection limit and qualify as nondetected, (U), and change non-detected results to (UJ) as a result of laboratory method blank contamination.

J^1 - Accept data, but qualify positive results reported for Dibromoflouromethane as estimated, (J).

J^2 - Accept data, but qualify positive and nondetected results for Acetone, Vinyl Acetate, Dichlorodifluoromethane, Acrylonitrile, Methelene chloride, 2-hexanone, 1,2,3-Trichloropropane, Idomethane, Carbon Disulfide, 2-butanone, and bis (2-Chloro-isopropyl)

ether as estimated, (J) and (UJ) as result of the continuing calibration %D reported greater than the 30% quality control limit.

J^3 - Accept data, but qualify positive and nondetected results for naphthalene as estimated, (J) and (UJ), as result of poor surrogate %R..

J^4 - Accept data, but qualify positive and nondetected results as estimated, (J) and (UJ), as a result of high %D.

R^1 - Reject, (UR), nondetected results for acrolein, and propionitrile, as a result of initial and continuing calibration RRFs less than 0.050.

R^2 - Reject, (UR), nondetected results for phenols due to all three acid fractions %R out of quality control limits in surrogate recovery and all being less than 10%.

R^3 - Reject, (UR), nondetected results for isobutyl alcohol and methacrylonitrile as a result of continuing calibration RRFs less than 0.050.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69285W

SEMIVOLATILES

Sample Number: B4SW
Sample Date: 9/16/96
Laboratory ID: 9609285-18
QC Type: NORMAL
% Moisture: 0
Location: B4SW

	RESULT	QUAL	UNITS
1-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ANTHRACENE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
CHRYSENE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
INDENO(1,2,3-CD)PYRENE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PYRENE	10	U	UG/L

Sample Number: B5SW
Sample Date: 9/16/96
Laboratory ID: 9609285-19
QC Type: NORMAL
% Moisture: 0
Location: B5SW

	RESULT	QUAL	UNITS
1-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ANTHRACENE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
CHRYSENE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
INDENO(1,2,3-CD)PYRENE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PYRENE	10	U	UG/L

Sample Number: S4DPSW
Sample Date: 9/15/96
Laboratory ID: 9609285-13
QC Type: NORMAL
% Moisture: 0
Location: S4DPSW

	RESULT	QUAL	UNIT
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	50	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
2-SEC-BUTYL-4,6-DINITROPHENOL	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L

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SDG: 69285W

SEMIVOLATILES

4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-METHYLPHENOL	10	U	UG/L
4-NITROANILINE	10	U	UG/L
4-NITROPHENOL	20	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	U	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	50	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	50	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD)PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
M-DINITROBENZENE	10	U	UG/L
M-NITROANILINE	10	U	UG/L
METHAPYRILENE	50	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSODIPROPYLAMINE	9	J	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L
O-NITROANILINE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-NITROANILINE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG
PRONAMIDE	10	U	UG
PYRENE	10	U	UG
PYRIDINE	10	U	UG
SAFROLE	10	U	UG
SULFOTEP	10	U	UG
THIONAZIN	10	U	UG

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SEMIVOLATILES

Sample Number: S4SW-1
Sample Date: 9/15/96
Laboratory ID: 9609285-10
QC Type: NORMAL
% Moisture: 0
Location: S4SW-1

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	50	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
2-SEC-BUTYL-4,6-DINITROPHENOL	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-METHYLPHENOL	10	U	UG/L
4-NITROANILINE	10	U	UG/L
4-NITROPHENOL	20	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	U	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	50	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	50	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD)PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
M-DINITROBENZENE	10	U	UG/L
M-NITROANILINE	10	U	UG/L
METHAPYRILENE	50	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSODIPROPYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L
O-NITROANILINE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-NITROANILINE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L

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SEMIVOLATILES

PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L

Sample Number: S4SW-2
Sample Date: 9/15/96
Laboratory ID: 9609285-11
QC Type: NORMAL
% Moisture: 0
Location: S4SW-2

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	50	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	UJ	UG/L
2,4,6-TRICHLOROPHENOL	10	UJ	UG/L
2,4-DICHLOROPHENOL	10	UJ	UG/L
2,4-DIMETHYLPHENOL	10	UJ	UG/L
2,4-DINITROPHENOL	20	UJ	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	UJ	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	UJ	UG/L
2-METHYL-4,6-DINITROPHENOL	10	UJ	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	UJ	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROPHENOL	10	UJ	UG/L
2-PICOLINE	10	U	UG/L
2-SEC-BUTYL-4,6-DINITROPHENOL	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	UJ	UG/
4-CHLOROANILINE	10	U	UG/
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/
4-METHYLPHENOL	10	UJ	UG/
4-NITROANILINE	10	U	UG/
4-NITROPHENOL	20	UJ	UG/
4-NITROQUINOLINE-1-OXIDE	10	U	UG/
5-NITRO-O-TOLUIDINE	10	U	UG/
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/
ACENAPHTHENE	10	U	UG/
ACENAPHTHYLENE	10	U	UG/
ACETOPHENONE	10	U	UG/
ANILINE	10	U	UG/
ANTHRACENE	10	U	UG/
ARAMITE	10	U	UG/
BENZO(A)ANTHRACENE	10	U	UG/
BENZO(A)PYRENE	10	U	UG/
BENZO(B)FLUORANTHENE	10	U	UG/
BENZO(G,H,I)PERYLENE	10	U	UG/
BENZO(K)FLUORANTHENE	10	U	UG/
BENZYL ALCOHOL	10	U	UG/
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/
BIS(2-CHLOROETHYL)ETHER	10	U	UG/
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/
BUTYL BENZYL PHTHALATE	10	U	UG/
CHLOROBENZILATE	50	U	UG/
CHRYSENE	10	U	UG/
DI-N-BUTYL PHTHALATE	10	U	UG/
DI-N-OCTYL PHTHALATE	10	U	UG/
DIALLATE	10	U	UG/
DIBENZO(A,H)ANTHRACENE	10	U	UG/
DIBENZOFURAN	10	U	UG/
DIETHYL PHTHALATE	10	U	UG/
DIMETHOATE	50	U	UG/
DIMETHYL PHTHALATE	10	U	UG/
DIPHENYLAMINE	10	U	UG/
DISULFOTON	10	U	UG/
ETHYL METHACRYLATE	10	U	UG/
ETHYL METHANESULFONATE	10	U	UG/

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69285W

SEMIVOLATILES

FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD)PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
M-DINITROBENZENE	10	U	UG/L
M-NITROANILINE	10	U	UG/L
METHAPYRILENE	50	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSODIPROPYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L
O-NITROANILINE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-NITROANILINE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	UJ	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L

Sample Number: S4SW-3
Sample Date: 9/15/96
Laboratory ID: 9609285-12
QC Type: NORMAL
% Moisture: 0
Location: S4SW-3

	RESULT	QUAL	UNIT
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/
1,2,4-TRICHLOROBENZENE	10	U	UG/
1,2-DICHLOROBENZENE	10	U	UG/
1,3,5-TRINITROBENZENE	50	U	UG/
1,3-DICHLOROBENZENE	10	U	UG/
1,4-DICHLOROBENZENE	10	U	UG/
1,4-DIOXANE	10	U	UG/
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	UR	UG/L
2,4,5-TRICHLOROPHENOL	10	UR	UG/L
2,4,6-TRICHLOROPHENOL	10	UR	UG/L
2,4-DICHLOROPHENOL	10	UR	UG/L
2,4-DIMETHYLPHENOL	10	UR	UG/L
2,4-DINITROPHENOL	20	UR	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	UR	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	UR	UG/L
2-METHYL-4,6-DINITROPHENOL	10	UR	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	UR	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROPHENOL	10	UR	UG/L
2-PICOLINE	10	U	UG/L
2-SEC-BUTYL-4,6-DINITROPHENOL	10	UR	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

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SEMIVOLATILES

4-CHLORO-3-METHYLPHENOL	10	UR	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-METHYLPHENOL	10	UR	UG/L
4-NITROANILINE	10	U	UG/L
4-NITROPHENOL	20	UR	UG/L
4-NITROQUINOLINE-1-OXIDE	10	U	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	50	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	50	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD)PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
M-DINITROBENZENE	10	U	UG/L
M-NITROANILINE	10	U	UG/L
METHAPYRILENE	50	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSODIPROPYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L
O-NITROANILINE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-NITROANILINE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	UR	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	UR	UG/
PRONAMIDE	10	U	UG/
PYRENE	10	U	UG/
PYRIDINE	10	U	UG/
SAFROLE	10	U	UG/
SULFOTEP	10	U	UG/
THIONAZIN	10	U	UG/

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69285W

SEMIVOLATILES

Sample Number: S4SW-4
Sample Date: 9/16/96
Laboratory ID: 9609285-14
QC Type: NORMAL
% Moisture: 0
Location: S4SW-4

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	50	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
2-SEC-BUTYL-4,6-DINITROPHENOL	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-METHYLPHENOL	10	U	UG/L
4-NITROANILINE	10	U	UG/L
4-NITROPHENOL	20	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	U	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	50	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	50	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG
FLUORANTHENE	10	U	UG
FLUORENE	10	U	UG
HEXACHLOROBENZENE	10	U	UG
HEXACHLOROBUTADIENE	10	U	UG
HEXACHLOROCYCLOPENTADIENE	10	U	UG
HEXACHLOROETHANE	10	U	UG
HEXACHLOROPROPENE	10	U	UG
INDENO(1,2,3-CD)PYRENE	10	U	UG
ISODRIN	10	U	UG
ISOPHORONE	10	U	UG
ISOSAFROLE	10	U	UG
KEPONE	10	U	UG
M-DINITROBENZENE	10	U	UG
M-NITROANILINE	10	U	UG
METHAPYRILENE	50	U	UG
METHYL METHANESULFONATE	10	U	UG
N-NITROSODI-N-BUTYLAMINE	10	U	UG
N-NITROSODIETHYLAMINE	10	U	UG
N-NITROSODIMETHYLAMINE	10	U	UG
N-NITROSODIPHENYLAMINE	10	U	UG
N-NITROSODIPROPYLAMINE	10	U	UG
N-NITROSOMETHYLETHYLAMINE	10	U	UG
N-NITROSOMORPHOLINE	10	U	UG
N-NITROSOPIPERIDINE	10	U	UG
N-NITROSOPYRROLIDINE	10	U	UG
NAPHTHALENE	10	U	UG
NITROBENZENE	10	U	UG
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG
O-NITROANILINE	10	U	UG
O-TOLUIDINE	10	U	UG
P-DIMETHYLAMINOAZOBENZENE	10	U	UG
P-NITROANILINE	10	U	UG
P-PHENYLENEDIAMINE	20	U	UG
PENTACHLOROBENZENE	10	U	UG
PENTACHLOROETHANE	10	U	UG
PENTACHLORONITROBENZENE	10	U	UG
PENTACHLOROPHENOL	10	U	UG
PHENACETIN	10	U	UG
PHENANTHRENE	10	U	UG

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69285W

SEMIVOLATILES

PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L

C.O 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69285W

VOLATILES

Sample Number: B4SW
Sample Date: 9/16/96
Laboratory ID: 9609285-18
QC Type: NORMAL
% Moisture: 0
Location: B4SW

	RESULT	QUAL	UNITS
1,2-DICHLOROBENZENE	2	U	UG/L
1,3-DICHLOROBENZENE	2	U	UG/L
1,4-DICHLOROBENZENE	2	U	UG/L
BENZENE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
TOLUENE	2	U	UG/L
XYLENES (TOTAL)	6	U	UG/L

Sample Number: B5SW
Sample Date: 9/16/96
Laboratory ID: 9609285-19
QC Type: NORMAL
% Moisture: 0
Location: B5SW

	RESULT	QUAL	UNITS
1,2-DICHLOROBENZENE	2	U	UG/L
1,3-DICHLOROBENZENE	2	U	UG/L
1,4-DICHLOROBENZENE	2	U	UG/L
BENZENE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
TOLUENE	2	U	UG/L
XYLENES (TOTAL)	6	U	UG/L

Sample Number: S4DPSW
Sample Date: 9/15/96
Laboratory ID: 9609285-13
QC Type: NORMAL
% Moisture: 0
Location: S4DPSW

	RESULT	QUAL	UNIT
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	UJ	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	10	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/L
BROMOFORM	2	U	UG/L
BROMOMETHANE	2	U	UG/L
CARBON DISULFIDE	5	UJ	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROMETHANE	2	U	UG/L
CHLOROPRENE	2	U	UG/L
CIS-1,3-DICHLOROPROPENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69285W

VOLATILES

DICHLOROBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	2	UJ	UG/L
ETHYLBENZENE	2	U	UG/L
IODOMETHANE	5	UJ	UG/L
ISOBUTYL ALCOHOL	20	UR	UG/L
METHACRYLONITRILE	10	UR	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYLENE CHLORIDE	7	U	UG/L
PROPIONITRILE	20	U	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHENE	2	U	UG/L
TOLUENE	2	U	UG/L
TRANS-1,2-DICHLOROETHENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	UJ	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES (TOTAL)	4	U	UG/L

Sample Number: S4SW-1
Sample Date: 9/15/96
Laboratory ID: 9609285-10
QC Type: NORMAL
% Moisture: 0
Location: S4SW-1

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	10	UJ	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	UR	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/L
BROMOFORM	2	U	UG/L
BROMOMETHANE	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROMETHANE	2	U	UG/L
CHLOROPRENE	2	U	UG/L
CIS-1,3-DICHLOROPROPENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L

DICHLOROBROMOMETHANE	2	U	UG/
DICHLORODIFLUOROMETHANE	2	UJ	UG/
ETHYLBENZENE	2	U	UG/
IODOMETHANE	5	U	UG/
ISOBUTYL ALCOHOL	20	UR	UG/
METHACRYLONITRILE	10	UJ	UG/
METHYLENE CHLORIDE	5	U	UG/
PROPIONITRILE	20	U	UG/
STYRENE	2	U	UG/
TETRACHLOROETHENE	2	U	UG/
TOLUENE	2	U	UG/
TRANS-1,2-DICHLOROETHENE	2	U	UG/
TRANS-1,3-DICHLOROPROPENE	2	U	UG/
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/
TRICHLOROETHENE	2	U	UG/
TRICHLOROFLUOROMETHANE	2	U	UG/
VINYL ACETATE	5	UJ	UG/
VINYL CHLORIDE	2	U	UG/
XYLENES (TOTAL)	4	U	UG/

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VOLATILES

Sample Number: S4SW-2
Sample Date: 9/15/96
Laboratory ID: 9609285-11
QC Type: NORMAL
% Moisture: 0
Location: S4SW-2

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	UJ	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	UJ	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	10	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	UR	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	UJ	UG/L
BROMOFORM	2	U	UG/L
BROMOMETHANE	2	U	UG/L
CARBON DISULFIDE	5	UJ	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROMETHANE	2	U	UG/L
CHLOROPRENE	2	U	UG/L
CIS-1,3-DICHLOROPROPENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLOROBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
IODOMETHANE	5	UJ	UG/L
ISOBUTYL ALCOHOL	20	UR	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYLENE CHLORIDE	5	U	UG/L
PROPIONITRILE	20	UJ	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHENE	2	U	UG/L
TOLUENE	2	U	UG/L
TRANS-1,2-DICHLOROETHENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	UJ	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES (TOTAL)	4	U	UG/L

Sample Number: S4SW-3
Sample Date: 9/15/96
Laboratory ID: 9609285-12
QC Type: NORMAL
% Moisture: 0
Location: S4SW-3

	RESULT	QUAL	UNIT
1,1,1,2-TETRACHLOROETHANE	2	U	UG/
1,1,1-TRICHLOROETHANE	2	U	UG/
1,1,2,2-TETRACHLOROETHANE	2	U	UG/
1,1,2-TRICHLOROETHANE	2	U	UG/
1,1-DICHLOROETHANE	2	U	UG/
1,1-DICHLOROETHENE	2	U	UG/
1,2,3-TRICHLOROPROPANE	2	UJ	UG/
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/
1,2-DIBROMOETHANE	2	U	UG/
1,2-DICHLOROETHANE	2	U	UG/
1,2-DICHLOROPROPANE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	5	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	UR	UG/L
ACRYLONITRILE	20	UJ	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/L
BROMOFORM	3	U	UG/L
BROMOMETHANE	2	U	UG/L
CARBON DISULFIDE	5	UJ	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROMETHANE	2	U	UG/L
CHLOROPRENE	2	U	UG/L
CIS-1,3-DICHLOROPROPENE	2	U	UG/L
DIBROMOMETHANE	2.4	J	UG/L

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VOLATILES

DICHLOROBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	2	UJ	UG/L
ETHYLBENZENE	2	U	UG/L
IODOMETHANE	5	UJ	UG/L
ISOBUTYL ALCOHOL	20	UR	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYLENE CHLORIDE	4.8	U	UG/L
PROPIONITRILE	20	U	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHENE	2	UJ	UG/L
TOLUENE	2	U	UG/L
TRANS-1,2-DICHLOROETHENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	UJ	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES (TOTAL)	4	U	UG/L

Sample Number: S4SW-4
Sample Date: 9/16/96
Laboratory ID: 9609285-14
QC Type: NORMAL
% Moisture: 0
Location: S4SW-4

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	UJ	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	UJ	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	10	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	UR	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	UJ	UG/L
BROMOFORM	2	U	UG/L
BROMOMETHANE	2	U	UG/L
CARBON DISULFIDE	5	UJ	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROMETHANE	2	U	UG/L
CHLOROPRENE	2	U	UG/L
CIS-1,3-DICHLOROPROPENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L

DICHLOROBROMOMETHANE	2	U	UG/
DICHLORODIFLUOROMETHANE	2	U	UG/
ETHYLBENZENE	2	U	UG/
IODOMETHANE	5	UJ	UG/
ISOBUTYL ALCOHOL	20	UR	UG/
METHACRYLONITRILE	10	U	UG/
METHYL METHACRYLATE	10	U	UG/
METHYLENE CHLORIDE	8.2	UJ	UG/
PROPIONITRILE	20	UJ	UG/
STYRENE	2	U	UG/
TETRACHLOROETHENE	2	U	UG/
TOLUENE	2	U	UG/
TRANS-1,2-DICHLOROETHENE	2	U	UG/
TRANS-1,3-DICHLOROPROPENE	2	U	UG/
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/
TRICHLOROETHENE	2	U	UG/
TRICHLOROFLUOROMETHANE	2	U	UG/
VINYL ACETATE	5	UJ	UG/
VINYL CHLORIDE	2	U	UG/
XYLENES (TOTAL)	4	U	UG/

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VOLATILES

Sample Number: TB03-091696
Sample Date: 9/9/96
Laboratory ID: 9609285-15
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHYLENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	UJ	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
1,2-TRANS-DICHLOROETHYLENE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	UJ	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	20		UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	UR	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	UJ	UG/L
BROMOFORM	2	U	UG/L
CARBON DISULFIDE	5	UJ	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROPRENE	2	U	UG/L
CIS-1,3-DICHLOROPROPYLENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLOROBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
ISOBUTYL ALCOHOL	20	UR	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL BROMIDE	2	U	UG/L
METHYL CHLORIDE	2	U	UG/L
METHYL IODIDE	5	UJ	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYLENE CHLORIDE	10	U	UG/L
PROPIONITRILE	20	UJ	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHYLENE	2	U	UG/L
TOLUENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPYLENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHYLENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	UJ	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES (TOTAL)	4	U	UG/L

Sample Number: TB04-091796
Sample Date: 9/9/96
Laboratory ID: 9609285-20
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNIT
1,1,1,2-TETRACHLOROETHANE	2	U	UG/l
1,1,1-TRICHLOROETHANE	2	U	UG/l
1,1,2,2-TETRACHLOROETHANE	2	U	UG/l
1,1,2-TRICHLOROETHANE	2	U	UG/l
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHYLENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	UJ	UG/l
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
1,2-TRANS-DICHLOROETHYLENE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	UJ	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	14.9		UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	UR	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	UJ	UG/L
BROMOFORM	2	U	UG/L
CARBON DISULFIDE	5	UJ	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROPRENE	2	U	UG/L
CIS-1,3-DICHLOROPROPYLENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLOROBROMOMETHANE	2	U	UG/L

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VOLATILES

DICHLORODIFLUOROMETHANE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
ISOBUTYL ALCOHOL	20	UR	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL BROMIDE	2	U	UG/L
METHYL CHLORIDE	2	U	UG/L
METHYL IODIDE	5	UJ	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYLENE CHLORIDE	9.8	U	UG/L
PROPIONITRILE	20	UJ	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHYLENE	2	U	UG/L
TOLUENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPYLENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHYLENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	UJ	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES (TOTAL)	4	U	UG/L

O 007 - KEY WEST
GENERAL ENGINEERING LABS

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PESTICIDES/PCBs

Sample Number: ABSW-1
Sample Date: 9/14/96
Laboratory ID: 9609285-06
QC Type: NORMAL
% Moisture: 0
Location: ABSW-1

	RESULT	QUAL	UNITS
2,4,5-T	0.096	U	UG/L
2,4,5-TP (SILVEX)	0.096	U	UG/L
2,4-D	0.096	U	UG/L
4,4'-DDD	0.04	UJ	UG/L
4,4'-DDE	0.04	U	UG/L
4,4'-DDT	0.04	U	UG/L
ALDRIN	0.02	U	UG/L
ALPHA-BHC	0.02	U	UG/L
AROCLOR-1016	0.12	U	UG/L
AROCLOR-1221	0.12	U	UG/L
AROCLOR-1232	0.12	U	UG/L
AROCLOR-1242	0.12	U	UG/L
AROCLOR-1248	0.12	U	UG/L
AROCLOR-1254	0.12	U	UG/L
AROCLOR-1260	0.12	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.25	U	UG/L
DELTA-BHC	0.02	U	UG/L
DIELDRIN	0.04	U	UG/L
ENDOSULFAN I	0.02	U	UG/L
ENDOSULFAN II	0.04	U	UG/L
ENDOSULFAN SULFATE	0.04	U	UG/L
ENDRIN	0.04	U	UG/L
ENDRIN ALDEHYDE	0.04	U	UG/L
GAMMA-BHC (LINDANE)	0.02	U	UG/L
HEPTACHLOR	0.02	U	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.05	U	UG/L
PARATHION, METHYL	0.05	U	UG/L
PHORATE	0.05	U	UG/L
TOXAPHENE	1	U	UG/L

Sample Number: ABSW-2
Sample Date: 9/14/96
Laboratory ID: 9609285-05
QC Type: NORMAL
% Moisture: 0
Location: ABSW-2

	RESULT	QUAL	UNITS
2,4,5-T	0.099	U	UG/L
2,4,5-TP (SILVEX)	0.099	U	UG/L
2,4-D	0.099	U	UG/L
4,4'-DDD	0.04	UJ	UG/L
4,4'-DDE	0.04	U	UG/L
4,4'-DDT	0.04	U	UG/L
ALDRIN	0.02	U	UG/L
ALPHA-BHC	0.02	U	UG/L
AROCLOR-1016	0.12	U	UG/L
AROCLOR-1221	0.12	U	UG/L
AROCLOR-1232	0.12	U	UG/L
AROCLOR-1242	0.12	U	UG/L
AROCLOR-1248	0.12	U	UG/L
AROCLOR-1254	0.12	U	UG/L
AROCLOR-1260	0.12	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.25	U	UG/L
DELTA-BHC	0.02	U	UG/L
DIELDRIN	0.04	U	UG/L
ENDOSULFAN I	0.02	U	UG/L
ENDOSULFAN II	0.04	U	UG/L
ENDOSULFAN SULFATE	0.04	U	UG/L
ENDRIN	0.04	U	UG/L
ENDRIN ALDEHYDE	0.04	U	UG/L
GAMMA-BHC (LINDANE)	0.02	U	UG/L
HEPTACHLOR	0.02	U	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.05	U	UG/L
PARATHION, METHYL	0.05	U	UG/L
PHORATE	0.05	U	UG/L
TOXAPHENE	1	U	UG/L

Sample Number: ABSW-3
Sample Date: 9/14/96
Laboratory ID: 9609285-07
QC Type: NORMAL
% Moisture: 0
Location: ABSW-3

	RESULT	QUAL	UNI
2,4,5-T	0.096	U	UG
2,4,5-TP (SILVEX)	0.11		UG
2,4-D	0.096	U	UG
4,4'-DDD	0.04	U	UG
4,4'-DDE	0.04	U	UG
4,4'-DDT	0.04	U	UG
ALDRIN	0.02	U	UG
ALPHA-BHC	0.02	U	UG
AROCLOR-1016	0.12	U	UG
AROCLOR-1221	0.12	U	UG
AROCLOR-1232	0.12	U	UG
AROCLOR-1242	0.12	U	UG
AROCLOR-1248	0.12	U	UG
AROCLOR-1254	0.12	U	UG
AROCLOR-1260	0.12	U	UG
BETA-BHC	0.02	U	UG
CHLORDANE	0.25	U	UG
DELTA-BHC	0.02	U	UG
DIELDRIN	0.04	U	UG
ENDOSULFAN I	0.02	U	UG
ENDOSULFAN II	0.04	U	UG
ENDOSULFAN SULFATE	0.04	U	UG
ENDRIN	0.04	U	UG
ENDRIN ALDEHYDE	0.04	U	UG
GAMMA-BHC (LINDANE)	0.02	U	UG
HEPTACHLOR	0.02	U	UG
HEPTACHLOR EPOXIDE	0.02	U	UG
METHOXYCHLOR	0.2	U	UG
PARATHION	0.05	U	UG
PARATHION, METHYL	0.05	U	UG
PHORATE	0.05	U	UG
TOXAPHENE	1	U	UG

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GENERAL ENGINEERING LABS

SDG: 69285W

PESTICIDES/PCBs

Sample Number: ABSW-4
Sample Date: 9/14/96
Laboratory ID: 9609285-02
QC Type: NORMAL
% Moisture: 0
Location: ABSW-4

	RESULT	QUAL	UNITS
2,4,5-T	0.11	U	UG/L
2,4,5-TP (SILVEX)	0.11	U	UG/L
2,4-D	0.11	U	UG/L
4,4'-DDD	0.041	UJ	UG/L
4,4'-DDE	0.041	U	UG/L
4,4'-DDT	0.041	U	UG/L
ALDRIN	0.021	U	UG/L
ALPHA-BHC	0.021	U	UG/L
AROCLOR-1016	0.13	U	UG/L
AROCLOR-1221	0.13	U	UG/L
AROCLOR-1232	0.13	U	UG/L
AROCLOR-1242	0.13	U	UG/L
AROCLOR-1248	0.13	U	UG/L
AROCLOR-1254	0.13	U	UG/L
AROCLOR-1260	0.13	U	UG/L
BETA-BHC	0.021	U	UG/L
CHLORDANE	0.26	U	UG/L
DELTA-BHC	0.021	U	UG/L
DIELDRIN	0.041	U	UG/L
ENDOSULFAN I	0.021	U	UG/L
ENDOSULFAN II	0.041	U	UG/L
ENDOSULFAN SULFATE	0.041	U	UG/L
ENDRIN	0.041	U	UG/L
ENDRIN ALDEHYDE	0.041	U	UG/L
GAMMA-BHC (LINDANE)	0.021	U	UG/L
HEPTACHLOR	0.021	U	UG/L
HEPTACHLOR EPOXIDE	0.021	U	UG/L
METHOXYCHLOR	0.21	U	UG/L
PARATHION	0.052	U	UG/L
PARATHION, METHYL	0.052	U	UG/L
PHORATE	0.052	U	UG/L
TOXAPHENE	1	U	UG/L

Sample Number: ABSW-5
Sample Date: 9/14/96
Laboratory ID: 9609285-08
QC Type: NORMAL
% Moisture: 0
Location: ABSW-5

	RESULT	QUAL	UNITS
2,4,5-T	0.097	U	UG/L
2,4,5-TP (SILVEX)	0.097	U	UG/L
2,4-D	0.097	U	UG/L
4,4'-DDD	0.04	U	UG/L
4,4'-DDE	0.04	U	UG/L
4,4'-DDT	0.04	U	UG/L
ALDRIN	0.02	U	UG/L
ALPHA-BHC	0.02	U	UG/L
AROCLOR-1016	0.12	U	UG/L
AROCLOR-1221	0.12	U	UG/L
AROCLOR-1232	0.12	U	UG/L
AROCLOR-1242	0.12	U	UG/L
AROCLOR-1248	0.12	U	UG/L
AROCLOR-1254	0.12	U	UG/L
AROCLOR-1260	0.12	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.25	U	UG/L
DELTA-BHC	0.02	U	UG/L
DIELDRIN	0.04	U	UG/L
ENDOSULFAN I	0.02	U	UG/L
ENDOSULFAN II	0.04	U	UG/L
ENDOSULFAN SULFATE	0.04	U	UG/L
ENDRIN	0.04	U	UG/L
ENDRIN ALDEHYDE	0.04	U	UG/L
GAMMA-BHC (LINDANE)	0.02	U	UG/L
HEPTACHLOR	0.02	U	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.05	U	UG/L
PARATHION, METHYL	0.05	U	UG/L
PHORATE	0.05	U	UG/L
TOXAPHENE	1	U	UG/L

Sample Number: ABSW-7
Sample Date: 9/14/96
Laboratory ID: 9609285-03
QC Type: NORMAL
% Moisture: 0
Location: ABSW-7

	RESULT	QUAL	UNI
2,4,5-T	0.1	U	UG
2,4,5-TP (SILVEX)	0.1	U	UG
2,4-D	0.1	U	UG
4,4'-DDD	0.041	UJ	UG
4,4'-DDE	0.041	U	UG
4,4'-DDT	0.041	U	UG
ALDRIN	0.02	U	UG
ALPHA-BHC	0.02	U	UG
AROCLOR-1016	0.13	U	UG
AROCLOR-1221	0.13	U	UG
AROCLOR-1232	0.13	U	UG
AROCLOR-1242	0.13	U	UG
AROCLOR-1248	0.13	U	UG
AROCLOR-1254	0.13	U	UG
AROCLOR-1260	0.13	U	UG
BETA-BHC	0.02	U	UG
CHLORDANE	0.25	U	UG
DELTA-BHC	0.02	U	UG
DIELDRIN	0.041	U	UG
ENDOSULFAN I	0.02	U	UG
ENDOSULFAN II	0.041	U	UG
ENDOSULFAN SULFATE	0.041	U	UG
ENDRIN	0.041	U	UG
ENDRIN ALDEHYDE	0.041	U	UG
GAMMA-BHC (LINDANE)	0.02	U	UG
HEPTACHLOR	0.02	U	UG
HEPTACHLOR EPOXIDE	0.02	U	UG
METHOXYCHLOR	0.2	U	UG
PARATHION	0.051	U	UG
PARATHION, METHYL	0.051	U	UG
PHORATE	0.051	U	UG
TOXAPHENE	1	U	UG

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PESTICIDES/PCBs

Sample Number: ABSW-8
Sample Date: 9/14/96
Laboratory ID: 9609285-09
QC Type: NORMAL
% Moisture: 0
Location: ABSW-8

	RESULT	QUAL	UNITS
2,4,5-T	0.1	U	UG/L
2,4,5-TP (SILVEX)	0.1	U	UG/L
2,4-D	0.1	U	UG/L
4,4'-DDD	0.04	U	UG/L
4,4'-DDE	0.04	U	UG/L
4,4'-DDT	0.04	U	UG/L
ALDRIN	0.02	U	UG/L
ALPHA-BHC	0.02	U	UG/L
AROCLOR-1016	0.12	U	UG/L
AROCLOR-1221	0.12	U	UG/L
AROCLOR-1232	0.12	U	UG/L
AROCLOR-1242	0.12	U	UG/L
AROCLOR-1248	0.12	U	UG/L
AROCLOR-1254	0.12	U	UG/L
AROCLOR-1260	0.12	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.25	U	UG/L
DELTA-BHC	0.02	U	UG/L
DIELDRIN	0.04	U	UG/L
ENDOSULFAN I	0.02	U	UG/L
ENDOSULFAN II	0.04	U	UG/L
ENDOSULFAN SULFATE	0.04	U	UG/L
ENDRIN	0.04	U	UG/L
ENDRIN ALDEHYDE	0.04	U	UG/L
GAMMA-BHC (LINDANE)	0.02	U	UG/L
HEPTACHLOR	0.02	U	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.05	U	UG/L
PARATHION, METHYL	0.05	U	UG/L
PHORATE	0.05	U	UG/L
TOXAPHENE	1	U	UG/L

Sample Number: ABSW-9
Sample Date: 9/14/96
Laboratory ID: 9609285-04
QC Type: NORMAL
% Moisture: 0
Location: ABSW-9

	RESULT	QUAL	UNITS
2,4,5-T	0.11	U	UG/L
2,4,5-TP (SILVEX)	0.11	U	UG/L
2,4-D	0.11	U	UG/L
4,4'-DDD	0.041	UJ	UG/L
4,4'-DDE	0.041	U	UG/L
4,4'-DDT	0.041	U	UG/L
ALDRIN	0.02	U	UG/L
ALPHA-BHC	0.02	U	UG/L
AROCLOR-1016	0.13	U	UG/L
AROCLOR-1221	0.13	U	UG/L
AROCLOR-1232	0.13	U	UG/L
AROCLOR-1242	0.13	U	UG/L
AROCLOR-1248	0.13	U	UG/L
AROCLOR-1254	0.13	U	UG/L
AROCLOR-1260	0.13	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.25	U	UG/L
DELTA-BHC	0.02	U	UG/L
DIELDRIN	0.041	U	UG/L
ENDOSULFAN I	0.02	U	UG/L
ENDOSULFAN II	0.041	U	UG/L
ENDOSULFAN SULFATE	0.041	U	UG/L
ENDRIN	0.041	U	UG/L
ENDRIN ALDEHYDE	0.041	U	UG/L
GAMMA-BHC (LINDANE)	0.02	U	UG/L
HEPTACHLOR	0.02	U	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.051	U	UG/L
PARATHION, METHYL	0.051	U	UG/L
PHORATE	0.051	U	UG/L
TOXAPHENE	1	U	UG/L

Sample Number: B4SW
Sample Date: 9/16/96
Laboratory ID: 9609285-18
QC Type: NORMAL
% Moisture: 0
Location: B4SW

	RESULT	QUAL	UNIT
2,4,5-T	0.097	U	UG/
2,4,5-TP (SILVEX)	0.097	U	UG/
2,4-D	0.097	U	UG/
4,4'-DDD	0.04	U	UG/
4,4'-DDE	0.04	U	UG/
4,4'-DDT	0.04	U	UG/
ALDRIN	0.02	U	UG/
ALPHA-BHC	0.02	U	UG/
AROCLOR-1016	0.12	U	UG/
AROCLOR-1221	0.12	U	UG/
AROCLOR-1232	0.12	U	UG/
AROCLOR-1242	0.12	U	UG/
AROCLOR-1248	0.12	U	UG/
AROCLOR-1254	0.12	U	UG/
AROCLOR-1260	0.12	U	UG/
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.25	U	UG/L
DELTA-BHC	0.02	U	UG/L
DIELDRIN	0.04	U	UG/L
ENDOSULFAN I	0.02	U	UG/L
ENDOSULFAN II	0.04	U	UG/L
ENDOSULFAN SULFATE	0.04	U	UG/L
ENDRIN	0.04	U	UG/L
ENDRIN ALDEHYDE	0.04	U	UG/L
GAMMA-BHC (LINDANE)	0.02	U	UG/L
HEPTACHLOR	0.02	U	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.05	U	UG/L
PARATHION, METHYL	0.05	U	UG/L
PHORATE	0.05	U	UG/L
TOXAPHENE	1	U	UG/L

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PESTICIDES/PCBs

Sample Number: B5SW
Sample Date: 9/16/96
Laboratory ID: 9609285-19
QC Type: NORMAL
% Moisture: 0
Location: B5SW

	RESULT	QUAL	UNITS
2,4,5-T	0.096	U	UG/L
2,4,5-TP (SILVEX)	0.096	U	UG/L
2,4-D	0.096	U	UG/L
4,4'-DDD	0.04	U	UG/L
4,4'-DDE	0.04	U	UG/L
4,4'-DDT	0.04	U	UG/L
ALDRIN	0.02	U	UG/L
ALPHA-BHC	0.02	U	UG/L
AROCLOR-1016	0.12	U	UG/L
AROCLOR-1221	0.12	U	UG/L
AROCLOR-1232	0.12	U	UG/L
AROCLOR-1242	0.12	U	UG/L
AROCLOR-1248	0.12	U	UG/L
AROCLOR-1254	0.12	U	UG/L
AROCLOR-1260	0.12	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.25	U	UG/L
DELTA-BHC	0.02	U	UG/L
DIELDRIN	0.04	U	UG/L
ENDOSULFAN I	0.02	U	UG/L
ENDOSULFAN II	0.04	U	UG/L
ENDOSULFAN SULFATE	0.04	U	UG/L
ENDRIN	0.04	U	UG/L
ENDRIN ALDEHYDE	0.04	U	UG/L
GAMMA-BHC (LINDANE)	0.02	U	UG/L
HEPTACHLOR	0.02	U	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.05	U	UG/L
PARATHION, METHYL	0.05	U	UG/L
PHORATE	0.05	U	UG/L
TOXAPHENE	1	U	UG/L

Sample Number: I1DPGW-2
Sample Date: 9/16/96
Laboratory ID: 9609285-17
QC Type: NORMAL
% Moisture: 0
Location: I1DPGW-2

	RESULT	QUAL	UNITS
2,4,5-T	0.1	U	UG/L
2,4,5-TP (SILVEX)	0.1	U	UG/L
2,4-D	0.1	U	UG/L
4,4'-DDD	0.04	U	UG/L
4,4'-DDE	0.04	U	UG/L
4,4'-DDT	0.04	U	UG/L
ALDRIN	0.02	U	UG/L
ALPHA-BHC	0.02	U	UG/L
AROCLOR-1016	0.12	U	UG/L
AROCLOR-1221	0.12	U	UG/L
AROCLOR-1232	0.12	U	UG/L
AROCLOR-1242	0.12	U	UG/L
AROCLOR-1248	0.12	U	UG/L
AROCLOR-1254	0.12	U	UG/L
AROCLOR-1260	0.12	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.25	U	UG/L
DELTA-BHC	0.02	U	UG/L
DIELDRIN	0.04	U	UG/L
ENDOSULFAN I	0.02	U	UG/L
ENDOSULFAN II	0.04	U	UG/L
ENDOSULFAN SULFATE	0.04	U	UG/L
ENDRIN	0.04	U	UG/L
ENDRIN ALDEHYDE	0.04	U	UG/L
GAMMA-BHC (LINDANE)	0.02	U	UG/L
HEPTACHLOR	0.02	U	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.05	U	UG/L
PARATHION, METHYL	0.05	U	UG/L
PHORATE	0.05	U	UG/L
TOXAPHENE	1	U	UG/L

Sample Number: I1KWM-01
Sample Date: 9/13/96
Laboratory ID: 9609285-01
QC Type: NORMAL
% Moisture: 0
Location: I1KWM-01

	RESULT	QUAL	UNI
2,4,5-T	0.1	U	UG
2,4,5-TP (SILVEX)	0.1	U	UG
2,4-D	0.1	U	UG
4,4'-DDD	0.04	UJ	UG
4,4'-DDE	0.04	U	UG
4,4'-DDT	0.04	U	UG
ALDRIN	0.02	U	UG
ALPHA-BHC	0.02	U	UG
AROCLOR-1016	0.12	U	UG
AROCLOR-1221	0.12	U	UG
AROCLOR-1232	0.12	U	UG
AROCLOR-1242	0.12	U	UG
AROCLOR-1248	0.12	U	UG
AROCLOR-1254	0.12	U	UG
AROCLOR-1260	0.12	U	UG
BETA-BHC	0.02	U	UG
CHLORDANE	0.25	U	UG
DELTA-BHC	0.02	U	UG
DIELDRIN	0.011	J	UG
ENDOSULFAN I	0.02	U	UG
ENDOSULFAN II	0.04	U	UG
ENDOSULFAN SULFATE	0.04	U	UG
ENDRIN	0.04	U	UG
ENDRIN ALDEHYDE	0.04	U	UG
GAMMA-BHC (LINDANE)	0.02	U	UG
HEPTACHLOR	0.02	U	UG
HEPTACHLOR EPOXIDE	0.02	U	UG
METHOXYCHLOR	0.2	U	UG
PARATHION	0.05	U	UG
PARATHION, METHYL	0.05	U	UG
PHORATE	0.05	U	UG
TOXAPHENE	1	U	UG

INORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	C. BRYAN	DATE:	JANUARY 14, 1997
FROM:	TERESA M. HUDSON	COPIES:	DV FILE

SUBJECT: INORGANIC DATA VALIDATION - TAL METALS AND CYANIDE
CTO 007 -KEY WEST, FLORIDA
SDG - 69298S

SAMPLES: 20/SOIL/

B4SS-01	B4SS-02	B5SS-01	I1SS-1
I1DPSS	I1SS-6	I1SS-7	ABSS-3
ABSS-5	ABSS-8	ABSS-1	ABDPSS
ABSS-4	ABSS-7	ABSS-9	ABSS-2
I1SS-2	I1SS-3	I1SS-5	I1SS-4

Overview

The sample set for CTO 007, Key West, SDG 69298S, consists of twenty (20) soil environmental samples. Two (2) field duplicate pairs (ABSS-1/ABDPSS and I1SS-1/I1DPSS) and one (1) lab duplicate pair (B5SS-01/B5SS-01D) are included within this SDG.

All samples were analyzed for Target Analyte List (TAL) metals and cyanide. The samples were collected by Brown and Root Environmental on September 16 and 17, 1996 and analyzed by General Engineering Laboratory under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- * Calibration Verifications
- * Laboratory Blank Analyses
- * ICP Interference Check Sample Results
- * Matrix Spike Results
- Laboratory Duplicate Results
- Laboratory Control Sample Results
- Detection Limits
- Field Duplicate Results

* - Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the validation recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/ preparation/ field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level (soil)
aluminum	14.2 ug/L	14.2 MG/KG
antimony	3.7 ug/L	3.7 MG/KG
barium	0.5 ug/L	0.5 MG/KG
beryllium	0.4 ug/L	0.4 MG/KG
cadmium	0.4 ug/L	0.4 MG/KG
calcium[1]	6.92 MG/KG	34.6 MG/KG
cyanide[1]	0.124 MG/KG	0.62 MG/KG
chromium[1]	0.711 MG/KG	3.555 MG/KG
iron	12.0 ug/L	12.0 MG/KG
lead[1]	0.394 MG/KG	1.97 MG/KG
magnesium	7.4 ug/L	7.4 MG/KG
sodium[1]	20.051 MG/KG	100.25 MG/KG

Samples affected: All

1 Maximum concentration found in a soil preparation blank.

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for antimony, barium, beryllium, cadmium, chromium, and cyanide have been qualified as nondetected "U". No action was taken for the remaining analytes since either the results were greater than the action level or were nondetects.

ICP Interference Check Sample Results

The interfering analyte calcium was present in all samples at concentrations which were comparable to the levels of calcium in the Interference Check Sample (ICS) solution. Several analytes, namely antimony, barium, cadmium, lead, manganese, potassium, selenium, sodium, vanadium, and zinc were present in the ICS solution at concentrations which exceeded the Instrument Detection Limit (IDL). Interference affects exist for barium, cadmium, selenium, vanadium, and zinc in the affected samples. Positive results reported for barium, cadmium, and vanadium were qualified as estimated, "J." No validation actions were warranted for antimony due to qualification for blank contamination. No validation actions were warranted for the positive results reported for cadmium as results were qualified for blank contamination in all samples except ABSS-2.

The interfering analyte iron was present in samples I1SS-4, I1SS-6, and ABSS-2 at concentrations which were comparable to the levels of iron in the Interference Check Sample (ICS) solution. Several analytes, namely antimony, barium, cadmium, lead, manganese, potassium, selenium, sodium, vanadium, and zinc were present in the ICS solution at concentrations which exceeded the Instrument Detection Limit (IDL). Interference affects exist for cadmium and selemium. In sample ABSS-2 the positive reslut for cadmium was qualified as estimated, "J." Cadmium was previously qualified for blank contamination in I1SS-4 and I1SS-6. Nondetect results for selenium were qualified as estimated, "UJ."

Matrix Spike Results

The Matrix Spike (MS) Percent Recovery (%R) for potassium (0.7%) was extremely low. Positive results were qualifiec as estimated, "J."

The Matrix Spike (MS) Percent Recoveries (%Rs) for antimony, thallium, and cyanide were below the quality contro limit. Nondetects reported for the aforementioned analytes were qualified as estimated, "UJ". No validation actions were warranted for positive results for antimony and cyanide due to qualification for blank contamination. Nc environmental samples contained positive results for thallium.

Notes

It was noted that samples B4SS-01, B4SS-02, B5SS-01, I1SS-1, I1DPSS, I1SS-6, I1SS-7, ABSS-3, ABSS-5, ABSS-8, I1SS-2, I1SS-3, I1SS-5, AND I1SS-4 were analyzed at a 2X dilution for calcium.

It was noted that zinc exceeded the quality control limit for CRDL standard for ICP.

The Continuing Calibration Verification (CCV) Percent Recovery (%R) for cyanide was outside the quality control limits. However, no validation actions were warranted as samples were either positive detect and already qualified for blank contamination or were nondetect "U".

The Contract Required Detection Limit (CRDL) Percent Recoveries (%Rs) for zinc exceeded the quality control limits. However, no validation actions were taken for CRDL %Rs.

A comparison of field duplicate pairs ABSS-1/ABDPSS and I1SS-1/I1DPSS can be found in Appendix C. However, no validation actions are required for field duplicate imprecision.

Executive Summary

Laboratory Performance: CCV %R for cyanide was outside quality control limits. Several analytes were present in the laboratory method/ preparation blanks.

Other Factors Affecting Data Quality: Several analytes were present in the field quality control blanks. The interfering analyte calcium was found in several samples. The MS %Rs for antimony, cyanide, potassium, and thallium were below the quality control limits.

The data for these analyses were reviewed in accordance with the "National Functional Guidelines for Inorganic Review", February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide " (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Brown and Root Environmental
Teresa M. Hudson
Environmental Scientist/Data Validator

Brown and Root Environmental
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation.

KEY WEST
SDG 69298S

TABLE 1 - RECOMMENDATION SUMMARY

Aluminum			Magnesium		
Antimony	A^1	J^2	Manganese		J^1
Arsenic			Mercury		
Barium	A^1	J^1	Nickel		J^3
Beryllium	A^1		Potassium		
Cadmium	A^1	J^1	Selenium		J^1
Calcium			Silver		
Chromium	A^1		Sodium		
Cobalt			Thallium		J^2
Copper			Vanadium		J^1
Iron			Zinc		J^1
Lead		J^1	Cyanide	A^1	J^2

If the field is left blank, the qualifier is A - Accept all data.

A^1 - Accept data but qualify as nondetected, "U", as a result of laboratory blank contamination.

J^1 - Accept data but qualify positive results and nondetects as estimated, "J" and "UJ", as a result of ICP interference.

J^2 - Accept data but qualify nondetects as estimated, "UJ", as a result of low MS %Rs.

J^3 - Accept data but qualify positive results as estimate, "J", as a result of low MS %R.

APPENDIX A
Qualified Analytical Results

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69298S

INORGANICS

Sample Number: ABDPSS
Sample Date: 9/17/96
Laboratory ID: 9609298-12
QC Type: NORMAL
% Moisture: 43
Location: ABDPSS

	RESULT	QUAL	UNITS
ALUMINUM	3270		MG/KG
ANTIMONY	0.69	UJ	MG/KG
ARSENIC	3		MG/KG
BARIUM	19.1		MG/KG
BERYLLIUM	0.1	U	MG/KG
CADMIUM	0.37	U	MG/KG
CALCIUM	146000		MG/KG
CHROMIUM	12.8		MG/KG
COBALT	0.59		MG/KG
COPPER	63.4		MG/KG
CYANIDE, TOTAL	0.12	UJ	MG/KG
IRON	4890		MG/KG
LEAD	25		MG/KG
MAGNESIUM	4050		MG/KG
MANGANESE	43.7		MG/KG
MERCURY	0.05		MG/KG
NICKEL	9.8		MG/KG
POTASSIUM	728	J	MG/KG
SELENIUM	0.69	UJ	MG/KG
SILVER	0.35	U	MG/KG
SODIUM	9550		MG/KG
THALLIUM	0.69	UJ	MG/KG
VANADIUM	7.9		MG/KG
ZINC	94.1		MG/KG

Sample Number: ABSS-1
Sample Date: 9/17/96
Laboratory ID: 9609298-11
QC Type: NORMAL
% Moisture: 37
Location: ABSS-1

	RESULT	QUAL	UNITS
ALUMINUM	2710		MG/KG
ANTIMONY	0.62	UJ	MG/KG
ARSENIC	3.2		MG/KG
BARIUM	22.8		MG/KG
BERYLLIUM	0.09	U	MG/KG
CADMIUM	0.35	U	MG/KG
CALCIUM	124000		MG/KG
CHROMIUM	11.8		MG/KG
COBALT	0.58		MG/KG
COPPER	30		MG/KG
CYANIDE, TOTAL	0.1	UJ	MG/KG
IRON	4600		MG/KG
LEAD	24		MG/KG
MAGNESIUM	3900		MG/KG
MANGANESE	41.2		MG/KG
MERCURY	0.02		MG/KG
NICKEL	10		MG/KG
POTASSIUM	675	J	MG/KG
SELENIUM	0.71		MG/KG
SILVER	0.31	U	MG/KG
SODIUM	9560		MG/KG
THALLIUM	0.62	UJ	MG/KG
VANADIUM	6.5		MG/KG
ZINC	106		MG/KG

Sample Number: ABSS-2
Sample Date: 9/17/96
Laboratory ID: 9609298-16
QC Type: NORMAL
% Moisture: 36
Location: ABSS-2

	RESULT	QUAL	UNIT
ALUMINUM	2450		MG/K
ANTIMONY	0.94	U	MG/K
ARSENIC	5.6		MG/K
BARIUM	19.6		MG/K
BERYLLIUM	0.07	U	MG/K
CADMIUM	1.9	J	MG/K
CALCIUM	141000		MG/K
CHROMIUM	19.7		MG/K
COBALT	4.4		MG/K
COPPER	60.3		MG/K
CYANIDE, TOTAL	0.1	UJ	MG/K
IRON	38600		MG/K
LEAD	39.5		MG/K
MAGNESIUM	4480		MG/K
MANGANESE	154		MG/K
MERCURY	0.03		MG/K
NICKEL	24.5	J	MG/K
POTASSIUM	634		MG/K
SELENIUM	0.61	UJ	MG/K
SILVER	0.3	U	MG/K
SODIUM	8950		MG/K
THALLIUM	0.61	UJ	MG/K
VANADIUM	7.3		MG/K
ZINC	447		MG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69298S

INORGANICS

Sample Number: ABSS-3
Sample Date: 9/17/96
Laboratory ID: 9609298-08
QC Type: NORMAL
% Moisture: 36
Location: ABSS-3

	RESULT	QUAL	UNITS
ALUMINUM	2250		MG/KG
ANTIMONY	0.6	UJ	MG/KG
ARSENIC	2		MG/KG
BARIUM	15.1		MG/KG
BERYLLIUM	0.07	U	MG/KG
CADMIUM	0.25	U	MG/KG
CALCIUM	137000		MG/KG
CHROMIUM	9.1		MG/KG
COBALT	0.43		MG/KG
COPPER	15.1		MG/KG
CYANIDE, TOTAL	0.11	UJ	MG/KG
IRON	3250		MG/KG
LEAD	20.9		MG/KG
MAGNESIUM	3210		MG/KG
MANGANESE	31.5		MG/KG
MERCURY	0.05		MG/KG
NICKEL	3.9		MG/KG
POTASSIUM	585	J	MG/KG
SELENIUM	0.9		MG/KG
SILVER	0.3	U	MG/KG
SODIUM	8180		MG/KG
THALLIUM	0.6	UJ	MG/KG
VANADIUM	5.8		MG/KG
ZINC	59.9		MG/KG

Sample Number: ABSS-4
Sample Date: 9/17/96
Laboratory ID: 9609298-13
QC Type: NORMAL
% Moisture: 32
Location: ABSS-4

	RESULT	QUAL	UNITS
ALUMINUM	1670		MG/KG
ANTIMONY	0.55	UJ	MG/KG
ARSENIC	2.6		MG/KG
BARIUM	17.1		MG/KG
BERYLLIUM	0.06	U	MG/KG
CADMIUM	0.32	U	MG/KG
CALCIUM	142000		MG/KG
CHROMIUM	8.4		MG/KG
COBALT	0.49		MG/KG
COPPER	35.6		MG/KG
CYANIDE, TOTAL	0.1	UJ	MG/KG
IRON	4570		MG/KG
LEAD	24.7		MG/KG
MAGNESIUM	3590		MG/KG
MANGANESE	36.7		MG/KG
MERCURY	0.07		MG/KG
NICKEL	5		MG/KG
POTASSIUM	507	J	MG/KG
SELENIUM	0.6		MG/KG
SILVER	0.27	U	MG/KG
SODIUM	8190		MG/KG
THALLIUM	0.55	UJ	MG/KG
VANADIUM	5.6	J	MG/KG
ZINC	139		MG/KG

Sample Number: ABSS-5
Sample Date: 9/17/96
Laboratory ID: 9609298-09
QC Type: NORMAL
% Moisture: 51
Location: ABSS-5

	RESULT	QUAL	UNIT
ALUMINUM	2540		MG/K
ANTIMONY	2	U	MG/K
ARSENIC	10.1		MG/K
BARIUM	58.3		MG/K
BERYLLIUM	0.07	U	MG/K
CADMIUM	3.3		MG/K
CALCIUM	145000		MG/K
CHROMIUM	141		MG/K
COBALT	2.9		MG/K
COPPER	80.2		MG/K
CYANIDE, TOTAL	0.42	U	MG/K
IRON	40000		MG/K
LEAD	47.8		MG/K
MAGNESIUM	5880		MG/K
MANGANESE	90.9		MG/K
MERCURY	0.06		MG/K
NICKEL	22.5		MG/K
POTASSIUM	809	J	MG/K
SELENIUM	1.2		MG/K
SILVER	0.7		MG/K
SODIUM	15300		MG/K
THALLIUM	0.79	UJ	MG/K
VANADIUM	9.2		MG/K
ZINC	683		MG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69298S

INORGANICS

Sample Number: ABSS-7
Sample Date: 9/17/96
Laboratory ID: 9609298-14
QC Type: NORMAL
% Moisture: 34
Location: ABSS-7

	RESULT	QUAL	UNITS
ALUMINUM	2260		MG/KG
ANTIMONY	0.58	UJ	MG/KG
ARSENIC	2.1		MG/KG
BARIUM	16.1		MG/KG
BERYLLIUM	0.07	U	MG/KG
CADMIUM	0.4	U	MG/KG
CALCIUM	137000		MG/KG
CHROMIUM	10.1		MG/KG
COBALT	0.6		MG/KG
COPPER	17.8		MG/KG
CYANIDE, TOTAL	0.1	UJ	MG/KG
IRON	5240		MG/KG
LEAD	26.1		MG/KG
MAGNESIUM	7460		MG/KG
MANGANESE	39.1		MG/KG
MERCURY	0.05		MG/KG
NICKEL	6.8		MG/KG
POTASSIUM	562	J	MG/KG
SELENIUM	0.58	UJ	MG/KG
SILVER	0.46		MG/KG
SODIUM	8650		MG/KG
THALLIUM	0.58	UJ	MG/KG
VANADIUM	5.7		MG/KG
ZINC	130		MG/KG

Sample Number: ABSS-8
Sample Date: 9/17/96
Laboratory ID: 9609298-10
QC Type: NORMAL
% Moisture: 50
Location: ABSS-8

	RESULT	QUAL	UNITS
ALUMINUM	3050		MG/KG
ANTIMONY	0.78	UJ	MG/KG
ARSENIC	4.7		MG/KG
BARIUM	17.6		MG/KG
BERYLLIUM	0.1	U	MG/KG
CADMIUM	0.73	U	MG/KG
CALCIUM	136000		MG/KG
CHROMIUM	18.4		MG/KG
COBALT	1.1		MG/KG
COPPER	44.8		MG/KG
CYANIDE, TOTAL	0.14	UJ	MG/KG
IRON	9140		MG/KG
LEAD	43		MG/KG
MAGNESIUM	6620		MG/KG
MANGANESE	54.2		MG/KG
MERCURY	0.03		MG/KG
NICKEL	13.6		MG/KG
POTASSIUM	960	J	MG/KG
SELENIUM	1.3		MG/KG
SILVER	0.39	U	MG/KG
SODIUM	15800		MG/KG
THALLIUM	0.78	UJ	MG/KG
VANADIUM	9		MG/KG
ZINC	306		MG/KG

Sample Number: ABSS-9
Sample Date: 9/17/96
Laboratory ID: 9609298-15
QC Type: NORMAL
% Moisture: 35
Location: ABSS-9

	RESULT	QUAL	UNIT
ALUMINUM	2120		MG/K
ANTIMONY	0.6	UJ	MG/K
ARSENIC	2.4		MG/K
BARIUM	19.3		MG/K
BERYLLIUM	0.07	U	MG/K
CADMIUM	0.45	U	MG/K
CALCIUM	150000		MG/K
CHROMIUM	11		MG/K
COBALT	0.64		MG/K
COPPER	23.1		MG/K
CYANIDE, TOTAL	0.11	UJ	MG/K
IRON	6320		MG/K
LEAD	30.2		MG/K
MAGNESIUM	4820		MG/K
MANGANESE	43.3		MG/K
MERCURY	0.03		MG/K
NICKEL	7.6		MG/K
POTASSIUM	587	J	MG/K
SELENIUM	0.7		MG/K
SILVER	0.3	U	MG/K
SODIUM	8870		MG/K
THALLIUM	0.6	UJ	MG/K
VANADIUM	6.6		MG/K
ZINC	142		MG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69298S

INORGANICS

Sample Number: B4SS-01
Sample Date: 9/16/96
Laboratory ID: 9609298-01
QC Type: NORMAL
% Moisture: 32
Location: B4SS-1

	RESULT	QUAL	UNITS
ALUMINUM	97.7		MG/KG
ANTIMONY	0.57	UJ	MG/KG
ARSENIC	3.4		MG/KG
BARIUM	8.3	J	MG/KG
BERYLLIUM	0.03	U	MG/KG
CADMIUM	0.07	U	MG/KG
CALCIUM	276000		MG/KG
CHROMIUM	1.2	U	MG/KG
COBALT	0.28	U	MG/KG
COPPER	4.6		MG/KG
CYANIDE, TOTAL	0.22	U	MG/KG
IRON	109		MG/KG
LEAD	7		MG/KG
MAGNESIUM	7310		MG/KG
MANGANESE	4		MG/KG
MERCURY	0.02	U	MG/KG
NICKEL	0.57	U	MG/KG
POTASSIUM	405	J	MG/KG
SELENIUM	0.57	UJ	MG/KG
SILVER	0.28	U	MG/KG
SODIUM	9510		MG/KG
THALLIUM	0.57	UJ	MG/KG
VANADIUM	1.6		MG/KG
ZINC	0.57	UJ	MG/KG

Sample Number: B4SS-02
Sample Date: 9/16/96
Laboratory ID: 9609298-02
QC Type: NORMAL
% Moisture: 43
Location: B4SS-2

	RESULT	QUAL	UNITS
ALUMINUM	186		MG/KG
ANTIMONY	0.66	UJ	MG/KG
ARSENIC	1.8		MG/KG
BARIUM	7.6	J	MG/KG
BERYLLIUM	0.03	U	MG/KG
CADMIUM	0.08	U	MG/KG
CALCIUM	361000		MG/KG
CHROMIUM	1.7	U	MG/KG
COBALT	0.33	U	MG/KG
COPPER	5.7		MG/KG
CYANIDE, TOTAL	0.12	UJ	MG/KG
IRON	272		MG/KG
LEAD	8.4		MG/KG
MAGNESIUM	7460		MG/KG
MANGANESE	6.6		MG/KG
MERCURY	0.07		MG/KG
NICKEL	0.66	U	MG/KG
POTASSIUM	450	J	MG/KG
SELENIUM	0.66	UJ	MG/KG
SILVER	0.33	U	MG/KG
SODIUM	10800		MG/KG
THALLIUM	0.66	UJ	MG/KG
VANADIUM	2.4	J	MG/KG
ZINC	0.66	UJ	MG/KG

Sample Number: B5SS-01
Sample Date: 9/16/96
Laboratory ID: 9609298-03
QC Type: NORMAL
% Moisture: 51
Location: B5SS-1

	RESULT	QUAL	UNIT
ALUMINUM	636		MG/K
ANTIMONY	0.81	UJ	MG/K
ARSENIC	2.3		MG/K
BARIUM	13.2	J	MG/K
BERYLLIUM	0.04	U	MG/K
CADMIUM	0.15	U	MG/K
CALCIUM	406000		MG/K
CHROMIUM	4.9	U	MG/K
COBALT	0.4	U	MG/K
COPPER	6.2		MG/K
CYANIDE, TOTAL	0.29	U	MG/K
IRON	528		MG/K
LEAD	6.8		MG/K
MAGNESIUM	11000		MG/K
MANGANESE	12.5		MG/K
MERCURY	0.04		MG/K
NICKEL	1.3		MG/K
POTASSIUM	592	J	MG/K
SELENIUM	0.81	UJ	MG/K
SILVER	0.4	U	MG/K
SODIUM	13700		MG/K
THALLIUM	0.81	UJ	MG/K
VANADIUM	3.4	J	MG/K
ZINC	0.81	UJ	MG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69298S

INORGANICS

Sample Number: I1DPSS
Sample Date: 9/17/96
Laboratory ID: 9609298-05
QC Type: NORMAL
% Moisture: 20
Location: I1DPSS

	RESULT	QUAL	UNITS
ALUMINUM	578		MG/KG
ANTIMONY	3.7	U	MG/KG
ARSENIC	4.5		MG/KG
BARIUM	13	J	MG/KG
BERYLLIUM	0.07	U	MG/KG
CADMIUM	0.4	U	MG/KG
CALCIUM	282000		MG/KG
CHROMIUM	7.7		MG/KG
COBALT	1.5		MG/KG
COPPER	57.5		MG/KG
CYANIDE, TOTAL	0.08	UJ	MG/KG
IRON	14600		MG/KG
LEAD	196		MG/KG
MAGNESIUM	4850		MG/KG
MANGANESE	82.7		MG/KG
MERCURY	0.08		MG/KG
NICKEL	6.1		MG/KG
POTASSIUM	196	J	MG/KG
SELENIUM	0.49	UJ	MG/KG
SILVER	0.25	U	MG/KG
SODIUM	3640		MG/KG
THALLIUM	0.49	UJ	MG/KG
VANADIUM	5.4	J	MG/KG
ZINC	181		MG/KG

Sample Number: I1SS-1
Sample Date: 9/17/96
Laboratory ID: 9609298-04
QC Type: NORMAL
% Moisture: 22
Location: I1SS-1

	RESULT	QUAL	UNITS
ALUMINUM	453		MG/KG
ANTIMONY	2.1	U	MG/KG
ARSENIC	4.3		MG/KG
BARIUM	8.5	J	MG/KG
BERYLLIUM	0.02	U	MG/KG
CADMIUM	0.21	U	MG/KG
CALCIUM	273000		MG/KG
CHROMIUM	16.4		MG/KG
COBALT	1.2		MG/KG
COPPER	45.6		MG/KG
CYANIDE, TOTAL	0.09	UJ	MG/KG
IRON	13000		MG/KG
LEAD	59.1		MG/KG
MAGNESIUM	2510		MG/KG
MANGANESE	58		MG/KG
MERCURY	0.04		MG/KG
NICKEL	5.5		MG/KG
POTASSIUM	246	J	MG/KG
SELENIUM	0.48	UJ	MG/KG
SILVER	0.24	U	MG/KG
SODIUM	4240		MG/KG
THALLIUM	0.48	UJ	MG/KG
VANADIUM	5.9	J	MG/KG
ZINC	91.9		MG/KG

Sample Number: I1SS-2
Sample Date: 9/17/96
Laboratory ID: 9609298-17
QC Type: NORMAL
% Moisture: 40
Location: I1SS-2

	RESULT	QUAL	UNIT
ALUMINUM	326		MG/K
ANTIMONY	0.63	UJ	MG/K
ARSENIC	3		MG/K
BARIUM	8.6	J	MG/K
BERYLLIUM	0.03	U	MG/K
CADMIUM	0.08	U	MG/K
CALCIUM	296000		MG/K
CHROMIUM	5.7	U	MG/K
COBALT	0.32	U	MG/K
COPPER	22.7		MG/K
CYANIDE, TOTAL	0.11	UJ	MG/K
IRON	3380		MG/K
LEAD	42.9		MG/K
MAGNESIUM	7530		MG/K
MANGANESE	21.7		MG/K
MERCURY	0.04		MG/K
NICKEL	1.8		MG/K
POTASSIUM	481	J	MG/K
SELENIUM	0.63	UJ	MG/K
SILVER	0.32	U	MG/K
SODIUM	10000		MG/K
THALLIUM	0.63	UJ	MG/K
VANADIUM	5.1	J	MG/K
ZINC	28.4		MG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69298S

INORGANICS

Sample Number: I1SS-3
Sample Date: 9/17/96
Laboratory ID: 9609298-18
QC Type: NORMAL
% Moisture: 25
Location: I1SS-3

	RESULT	QUAL	UNITS
ALUMINUM	925		MG/KG
ANTIMONY	0.49	UJ	MG/KG
ARSENIC	4.1		MG/KG
BARIUM	7.4	J	MG/KG
BERYLLIUM	0.08	U	MG/KG
CADMIUM	0.09	U	MG/KG
CALCIUM	316000		MG/KG
CHROMIUM	5.5		MG/KG
COBALT	0.25	U	MG/KG
COPPER	21.6		MG/KG
CYANIDE, TOTAL	0.09	UJ	MG/KG
IRON	3090		MG/KG
LEAD	46.8		MG/KG
MAGNESIUM	4700		MG/KG
MANGANESE	18.1		MG/KG
MERCURY	0.04		MG/KG
NICKEL	2.4		MG/KG
POTASSIUM	272	J	MG/KG
SELENIUM	0.49	UJ	MG/KG
SILVER	0.25	U	MG/KG
SODIUM	5330		MG/KG
THALLIUM	0.49	UJ	MG/KG
VANADIUM	7.6	J	MG/KG
ZINC	39		MG/KG

Sample Number: I1SS-4
Sample Date: 9/17/96
Laboratory ID: 9609298-20
QC Type: NORMAL
% Moisture: 19
Location: I1SS-4

	RESULT	QUAL	UNITS
ALUMINUM	615		MG/KG
ANTIMONY	1.2	U	MG/KG
ARSENIC	12.1		MG/KG
BARIUM	7.5	J	MG/KG
BERYLLIUM	0.02	U	MG/KG
CADMIUM	0.31	U	MG/KG
CALCIUM	196000		MG/KG
CHROMIUM	17.2		MG/KG
COBALT	2.4		MG/KG
COPPER	40.3		MG/KG
CYANIDE, TOTAL	0.08	UJ	MG/KG
IRON	32600		MG/KG
LEAD	112		MG/KG
MAGNESIUM	4070		MG/KG
MANGANESE	105		MG/KG
MERCURY	0.11		MG/KG
NICKEL	12		MG/KG
POTASSIUM	318	J	MG/KG
SELENIUM	0.46	UJ	MG/KG
SILVER	0.23	U	MG/KG
SODIUM	4380		MG/KG
THALLIUM	0.46	UJ	MG/KG
VANADIUM	10.2		MG/KG
ZINC	163		MG/KG

Sample Number: I1SS-5
Sample Date: 9/17/96
Laboratory ID: 9609298-19
QC Type: NORMAL
% Moisture: 28
Location: I1SS-5

	RESULT	QUAL	UNIT
ALUMINUM	387		MG/K
ANTIMONY	0.56	UJ	MG/K
ARSENIC	2.7		MG/K
BARIUM	7	J	MG/K
BERYLLIUM	0.03	U	MG/K
CADMIUM	0.07	U	MG/K
CALCIUM	281000		MG/K
CHROMIUM	3.5	U	MG/K
COBALT	0.28	U	MG/K
COPPER	21.8		MG/K
CYANIDE, TOTAL	0.09	UJ	MG/K
IRON	2820		MG/K
LEAD	226		MG/K
MAGNESIUM	13500		MG/K
MANGANESE	29.6		MG/K
MERCURY	0.09		MG/K
NICKEL	1.2		MG/K
POTASSIUM	379	J	MG/K
SELENIUM	0.56	UJ	MG/K
SILVER	0.28	U	MG/K
SODIUM	6050		MG/K
THALLIUM	0.56	UJ	MG/K
VANADIUM	3.9	J	MG/K
ZINC	43.1		MG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69298S

INORGANICS

Sample Number: I1SS-6
Sample Date: 9/17/96
Laboratory ID: 9609298-06
QC Type: NORMAL
% Moisture: 18
Location: I1SS-6

	RESULT	QUAL	UNITS
ALUMINUM	560		MG/KG
ANTIMONY	1.4	U	MG/KG
ARSENIC	10.8		MG/KG
BARIUM	11.8	J	MG/KG
BERYLLIUM	0.15	U	MG/KG
CADMIUM	0.35	U	MG/KG
CALCIUM	151000		MG/KG
CHROMIUM	12.9		MG/KG
COBALT	3.1		MG/KG
COPPER	64.4		MG/KG
CYANIDE, TOTAL	0.08	UJ	MG/KG
IRON	27700		MG/KG
LEAD	96.3		MG/KG
MAGNESIUM	2520		MG/KG
MANGANESE	118		MG/KG
MERCURY	0.06		MG/KG
NICKEL	12		MG/KG
POTASSIUM	194	J	MG/KG
SELENIUM	0.46	UJ	MG/KG
SILVER	0.33		MG/KG
SODIUM	3540		MG/KG
THALLIUM	0.46	UJ	MG/KG
VANADIUM	7.2		MG/KG
ZINC	484		MG/KG

Sample Number: I1SS-7
Sample Date: 9/17/96
Laboratory ID: 9609298-07
QC Type: NORMAL
% Moisture: 66
Location: I1SS-7

	RESULT	QUAL	UNITS
ALUMINUM	72.4		MG/KG
	72.4		MG/KG
ANTIMONY	0.59	UJ	MG/KG
	0.59	UJ	MG/KG
ARSENIC	0.92		MG/KG
	0.92		MG/KG
BARIUM	7.8	J	MG/KG
	7.8	J	MG/KG
BERYLLIUM	0.03	U	MG/KG
	0.03	U	MG/KG
CADMIUM	0.06	U	MG/KG
	0.06	U	MG/KG
CALCIUM	316000		MG/KG
	316000		MG/KG
CHROMIUM	2.9	U	MG/KG
	2.9	U	MG/KG
COBALT	0.3	U	MG/KG
	0.3	U	MG/KG
COPPER	15.2		MG/KG
	15.2		MG/KG
CYANIDE, TOTAL	0.1	UJ	MG/KG
	0.1	UJ	MG/KG
IRON	387		MG/KG
	387		MG/KG
LEAD	19		MG/KG
	19		MG/KG
MAGNESIUM	7770		MG/KG
	7770		MG/KG
MANGANESE	7.3		MG/KG
	7.3		MG/KG
MERCURY	0.02	U	MG/KG
	0.02	U	MG/KG
NICKEL	1		MG/KG
	1		MG/K
POTASSIUM	374	J	MG/K
	374	J	MG/K
SELENIUM	0.59	UJ	MG/K
	0.59	UJ	MG/K
SILVER	0.3	U	MG/K
	0.3	U	MG/K
SODIUM	8790		MG/K
	8790		MG/K
THALLIUM	0.59	UJ	MG/K
	0.59	UJ	MG/K
VANADIUM	0.73	J	MG/K
	0.73	J	MG/K
ZINC	1.1		MG/K
	1.1		MG/K

ORGANIC DATA VALIDATION

INTERNAL CORRESPONDENCE

TO:	CHUCK BRYAN	DATE:	FEBRUARY 10, 1997
FROM:	EDWARD A. INABINETT	COPIES:	DV FILE

SUBJECT: ORGANIC DATA VALIDATION - VOA/SVOA/PEST/PCB/HERB ORGANICS
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG 69298S

SAMPLES: 20/Soil:

ABSS-1	ABSS-7	B4SS-02	I1SS-4
ABSS-2	ABSS-8	B5SS-01	I1SS-5
ABSS-3	ABSS-9	I1SS-1	I1SS-6
ABSS-4	ABDPSS	I1SS-2	I1SS-7
ABSS-5	B4SS-01	I1SS-3	I1DPSS

The sample set for the CTO 007 NAS Key West site, SDG 69298S, consists of twenty (20) soil environmental samples. Three environmental soil samples were analyzed for volatile organic compounds. Eleven environmental soil samples were analyzed for semivolatile organic compounds (polynuclear aromatic hydrocarbons). All samples were analyzed for Target Compound List (TCL) pesticide/PCB and herbicide organic compounds. The field crew designated sample B5SS-01 for Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis. Two field duplicate pairs were included in this SDG(ABDPSS/ABSS-1, and I1DPSS/I1SS-1).

The samples were collected by Brown and Root Environmental on September 16th and 17th, 1996 and analyzed by General Engineering Laboratories, Inc. under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Methods 8020, 8270, 8080 and 8150 analytical and reporting protocols. The data were evaluated according to the following parameters:

- Data completeness
- * Holding times
- GC/MS Tuning
- * Initial and continuing calibrations
- Laboratory and field blank analyses
- * Surrogate spike recoveries
- * Matrix Spike/Matrix Spike Duplicate analysis
- * Blank Spike/Blank Spike Duplicate results
- * Internal Standards
- Field Duplicate Precision
- Instrument Performance
- Compound Identification
- * Compound Quantitation
- Detection limits

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the validation qualifications.

Volatiles

Samples B4SS-01, B4SS-02, and B5SS-01 were analyzed for volatile aromatic compounds.

Continuting calibration of 9/25/96 @ 16:09 had %Ds greater than 15% for M&P-xylene, O-xylene, Xylene (total), 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene. No action was taken.

No other problems were noted.

Semivolatiles

The holding time from date of collection to date of extraction was exceeded in samples B4SS-01, B4SS-02, and B5SS-03. These samples were collected on 9/16/96. The date of extraction was reported on 10/1/96 which exceeds the 14 day holding time by 1 day. The positive/nondetected results reported for the target compounds in these samples are qualified as estimated "J" and "UJ" respectively.

Blank Spike/Blank Spike Duplicate analyses performed on sample SBLK01 yielded low percent recoveries for 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and acenaphthene. Pyrene yielded a high percent recovery. No action is taken based soley on Blank Spike noncompliances.

No other problems were noted.

Pesticide/PCBs

Sample I1SS-6 yielded a surrogate percent recovery higher than the quality control limit. However, the noncompliant recovery occurred in column 2 (DB-602) only. No action was taken since the recovery for this sample was compliant on column 1 (DB-5).

Continuing calibration %RPD greater than 25% for Performance Evaluation Mixture (PEM) 01 was reported for 4,4'-DDD. No action was taken based on a high %RPD for PEM01.

Samples ABSS-1, ABDPSS, ABSS-2, ABSS-3, ABSS-4, ABSS-5, ABSS-7, ABSS-8, ABSS-9, B4SS-02, I1SS-1, I1DPSS, I1SS-2, I1SS-3, I1SS-4, I1SS-5, I1SS-6, and I1SS-7 had high %Ds (greater than 25%) between positive results on columns 1 and 2 for several pesticide compounds. As a result, positive results for the affected single component pesticides were qualified as estimated "J" for those compounds with %Ds not greater than 100%.

Samples ABSS-1 and ABDPSS had a very high %D (greater than 100%) between positive results on columns 1 and 2 for 4,4'-DDT. Positive results for 4,4'-DDT were qualified as estimated "J" in these aforementioned samples.

Sample ABDPSS had a very high %D (greater than 100%) between positive results on columns 1 and 2 for 4,4'-DDE. Positive results for 4,4'-DDE was qualified as estimated "J" in the aforementioned sample.

Sample ABSS-3 had a very high %D (greater than 100%) between positive results on columns 1 and 2 for Endrin. Positive results for Endrin was qualified as estimated "J" in the aforementioned sample.

Samples ABSS-4, I1SS-1, and I1SS-2 had a very high %D (greater than 100%) between positive results on columns 1 and 2 for 4,4'-DDT. After examination of the chromatograms, it is the professional opinion of the data validator that the high %Ds for 4,4'-DDT were caused by interference, due to the presence of Aroclor 1260. As a result, positive results for 4,4'-DDT were rejected "R" in samples ABSS-4, I1SS-1, and I1SS-2.

Samples ABSS-3, ABSS-7, and ABSS-9 had very high %Ds (greater than 100%) between positive results on columns 1 and 2 for Gamma-BHC. Positive results for Gamma-BHC were not considered reliable and were rejected "R" in the aforementioned samples.

Samples I1SS-4 had a very high %D (greater than 100%) between positive results on columns 1 and 2 for Dieldrin. Positive results for Dieldrin were qualified as estimated "J" in the aforementioned samples.

Sample I1SS-3 had a very high %D (greater than 100%) between positive results on columns 1 and 2 for Endosulfan sulfate. Positive results for Endosulfan sulfate were qualified as estimated "J" in the aforementioned sample.

Sample I1SS-4 had a very high %D (greater than 100%) between positive results on columns 1 and 2 for Endrin, 4,4'-DDE, and Endrin aldehyde. After examination of the chromatograms, it is the professional opinion of the data validator that the high %Ds for Endrin, 4,4'-DDE, and Endrin aldehyde were caused by interference, due to the presence of Aroclor 1260. As a result, positive results for Endrin, 4,4'-DDE, and Endrin aldehyde were rejected "R" in sample I1SS-4.

Sample I1SS-5 had a very high %D (greater than 100%) between positive results on columns 1 and 2 for Heptachlor. Positive results for Heptachlor was qualified as estimated "J" in the aforementioned sample.

Samples I1SS-5 and I1SS-7 had a very high %D (greater than 100%) between positive results on columns 1 and 2 for Endosulfan I. Positive results were qualified as estimated "J" in the aforementioned samples.

Sample I1SS-1 was analyzed and a 1000 fold dilution as a result of concentrations for Aroclor 1260 and Endrin exceeding the linear calibration range of the instrument. The results for the aforementioned compounds from the diluted analysis were used to replace the undiluted results and were used in validation.

Sample I1SS-4 was analyzed at a 100 fold dilution as a result of concentrations for Aroclor 1260 exceeding the linear calibration range of the instrument. The results for Aroclor 1260 from the diluted analysis were used to replace the undiluted results and were used in validation.

Poor field duplicate precision was noted in the field duplicate pair I1SS-1/I1DPSS for the following compounds: 4,4'-DDE, Aroclor 1260, Endrin, and Endrin aldehyde. No action was taken based on field duplicate precision.

No other problems were noted.

Herbicides

Low surrogate percent recoveries for 2,4-dichlorophenylacet were reported in both columns for sample B5SS-01. As a result, the laboratory re-extracted and reanlayzed this sample, however the re-

extraction was performed grossly outside of the 14 day holding period. Therefore, the original analyses were chosen for validation. Since the percent recoveries in both columns were below 10 percent, nondetected results in sample B5SS-01 were considered unreliable and were rejected.

Sample ABSS-1 yielded a surrogate percent recovery lower than the quality control limit. However, the noncompliant recovery occurred in column 1 only. No action was taken since the recovery for this sample was compliant on column 2.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) analyses performed on sample B5SS-01 yielded low percent recoveries for 2,4,5-T, and 2,4,5-TP. No action is taken based soley on MS/MSD noncompliances.

No other problems were noted.

Additional Comments

None.

Executive Summary

Laboratory Performance: Many pesticide/PCB compounds had high %Ds between positive results on columns 1 and 2. Some of these positive results were rejected due to Aroclor 1260 interference on the chromatograms.

Other Factors Affecting Data Quality: One environmental sample exhibited low surrogate percent recovery in both columns when being analyzed for herbicides. Re-extraction performed grossly outside holding times resulted in rejection of both original and reanalyses. Two pesticide compounds required dilution prior to analyses.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NFESC guidelines entitled "Navy Installation Restoration Program Laboratory Quality Assurance Guide" (2/96).

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Edward A. Inabinett

Brown and Root Environmental

Edward A. Inabinett
Engineer/Data Validator

Brown and Root Environmental

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

NAS KEY WEST

SDG 69298S

TABLE 1 - RECOMMENDATION SUMMARY

Sample No.	VOA			SVOA			PEST/PCB			HERB		
ABSS-1							J[7,8,14]					
ABDPSS							J[4,7,8,10,12,14]					
ABSS-2							J[4,8,9,12]					
ABSS-3							J[7,8,9,16]	R[4]				
ABSS-4							J[2,5,6,7,12,16]	R[1]				
ABSS-5							J[2,7,9,10,14]					
ABSS-7							J[2,6,7,8,12,14]	R[4]				
ABSS-8							J[2,5,7,10,12,14]					
ABSS-9							J[2,6,7,8,10,15]	R[4]				
B4SS-01					J[1]		J[14]					
B4SS-02					J[1]		J[4,5]					
B5SS-01		J[2]			J[1]							R[3]
I1SS-1							J[6,7]	R[1,5]				
I1DPSS							J[2,8]					
I1SS-2					J[2]		J[5,16]	R[1]				
I1SS-3							J[2,9,10,13,15]	R[6]				
I1SS-4							J[6,14]	R[2]				
I1SS-5							J[4,5,7,8,12,15]					
I1SS-6							J[6,8,12,13,14]					
I1SS-7							J[4,5,6,7,8,9,11,15]					

If the field is left blank, the qualifier is A - Accept all data.

J[1] - Accept data, but qualify nondetected results for acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)flouranthene, benzo(g,h,i)perylene, benzo(k)flouranthene, chrysene, dibenzo(a,h)anthracene, flouranthene, flourene, ideno(1,2,3-cd)pyrene, naphthalene, phenanthrene, pyrene as estimated "UJ" as a result of holding times being exceeded.

J[2] - Accept data, but qualify positive results below the CRQL as estimated "J".

J[3] - Not used.

J^4 - Accept data, but qualify positive results for Gamma-BHC as estimated "J" as a result of %D greater than 25% between positive results on columns 1 and 2.

J^5 - Accept data, but qualify positive results for Heptachlor as estimated "J" as a result of %D greater than 25% between positive results on columns 1 and 2.

J^6 - Accept data, but qualify positive results for Dieldrin as estimated "J" as a result of %D greater than 25% between positive results on columns 1 and 2.

J^7 - Accept data, but qualify positive results for 4,4'-DDE as estimated "J" as a result of %D greater than 25% between positive results on columns 1 and 2.

J^8 - Accept data, but qualify positive results for Endosulfan I as estimated "J" as a result of %D greater than 25% between positive results on columns 1 and 2.

J^9 - Accept data, but qualify positive results for Endrin as estimated "J" as a result of %D greater than 25% between positive results on columns 1 and 2.

J^{10} - Accept data, but qualify positive results for Heptachlor epoxide as estimated "J" as a result of %D greater than 25% between positive results on columns 1 and 2.

J^{11} - Accept data, but qualify positive results for Alpha-BHC as estimated "J" as a result of %D greater than 25% between positive results on columns 1 and 2.

J^{12} - Accept data, but qualify positive results for 4,4'-DDD as estimated "J" as a result of %D greater than 25% between positive results on columns 1 and 2.

J^{13} - Accept data, but qualify positive results for Endosulfan sulfate as estimated "J" as a result of %D greater than 25% between positive results on columns 1 and 2.

J^{14} - Accept data, but qualify positive results for 4,4'-DDT as estimated "J" as a result of %D greater than 25% between positive results on columns 1 and 2.

J^{15} - Accept data, but qualify positive results for Aroclor 1260 as estimated "J" as a result of %D greater than 25% between positive results on columns 1 and 2.

J^{16} - Accept data, but qualify positive results for Aroclor 1254 as estimated "J" as a result of %D greater than 25% between positive results on columns 1 and 2.

R^1 - Reject "R" positive results for 4,4'-DDT as a result of Aroclor 1260 interference on chromatograms.

R^2 - Reject "R" positive results for Endrin, 4,4'-DDE, and Endrin aldehyde as a result of Aroclor 1260 interference on chromatograms.

R^3 - Reject "UR" nondetected results for 2,4,5-T, 2,4,5-TP(silvex), and 2,4-D as a result of low percent surrogate recoveries in columns 1 and 2.

R^4 - Reject "R" positive results for Gamma-BHC as a result extremely high %Ds between columns 1 and 2.

R^5 - Reject "R" positive results for Dieldrin as a result of extremely high %Ds between columns 1 and 2.

R^6 - Reject "R" positive results for Endosulfan sulfate as a result of extremely high %Ds between columns 1 and 2.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69298S

VOLATILES

Sample Number: B4SS-01
Sample Date: 9/16/96
Laboratory ID: 9609298-01
QC Type: NORMAL
% Moisture: 32
Location: B4SS-1

	RESULT	QUAL	UNITS
1,2-DICHLOROBENZENE	2.9	U	UG/KG
1,3-DICHLOROBENZENE	2.9	U	UG/KG
1,4-DICHLOROBENZENE	2.9	U	UG/KG
BENZENE	2.9	U	UG/KG
CHLOROBENZENE	2.9	U	UG/KG
ETHYLBENZENE	2.9	U	UG/KG
TOLUENE	2.9	U	UG/KG
XYLENES (TOTAL)	8.8	U	UG/KG

Sample Number: B4SS-02
Sample Date: 9/16/96
Laboratory ID: 9609298-02
QC Type: NORMAL
% Moisture: 43
Location: B4SS-2

	RESULT	QUAL	UNITS
1,2-DICHLOROBENZENE	3.5	U	UG/KG
1,3-DICHLOROBENZENE	5.9		UG/KG
1,4-DICHLOROBENZENE	3.5	U	UG/KG
BENZENE	3.5	U	UG/KG
CHLOROBENZENE	3.5	U	UG/KG
ETHYLBENZENE	3.5	U	UG/KG
TOLUENE	16.9		UG/KG
XYLENES (TOTAL)	10.5	U	UG/KG

Sample Number: B5SS-01
Sample Date: 9/16/96
Laboratory ID: 9609298-03
QC Type: NORMAL
% Moisture: 51
Location: B5SS-1

	RESULT	QUAL	UNIT
1,2-DICHLOROBENZENE	4.1	U	UG/K
1,3-DICHLOROBENZENE	4.1	U	UG/K
1,4-DICHLOROBENZENE	4.1	U	UG/K
BENZENE	4.1	U	UG/K
CHLOROBENZENE	4.1	U	UG/K
ETHYLBENZENE	4.1	U	UG/K
TOLUENE	3.5	J	UG/K
XYLENES (TOTAL)	12	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69298S

SEMIVOLATILES

Sample Number: B4SS-01
Sample Date: 9/16/96
Laboratory ID: 9609298-01
QC Type: NORMAL
% Moisture: 32
Location: B4SS-1

	RESULT	QUAL	UNITS
ACENAPHTHENE	487	UJ	UG/KG
ACENAPHTHYLENE	487	UJ	UG/KG
ANTHRACENE	487	UJ	UG/KG
BENZO(A)ANTHRACENE	487	UJ	UG/KG
BENZO(A)PYRENE	487	UJ	UG/KG
BENZO(B)FLUORANTHENE	487	UJ	UG/KG
BENZO(G,H,I)PERYLENE	487	UJ	UG/KG
BENZO(K)FLUORANTHENE	487	UJ	UG/KG
CHRYSENE	487	UJ	UG/KG
DIBENZO(A,H)ANTHRACENE	487	UJ	UG/KG
FLUORANTHENE	487	UJ	UG/KG
FLUORENE	487	UJ	UG/KG
INDENO(1,2,3-CD)PYRENE	487	UJ	UG/KG
NAPHTHALENE	487	UJ	UG/KG
PHENANTHRENE	487	UJ	UG/KG
PYRENE	487	UJ	UG/KG

Sample Number: B4SS-02
Sample Date: 9/16/96
Laboratory ID: 9609298-02
QC Type: NORMAL
% Moisture: 43
Location: B4SS-2

	RESULT	QUAL	UNITS
ACENAPHTHENE	577	UJ	UG/KG
ACENAPHTHYLENE	577	UJ	UG/KG
ANTHRACENE	577	UJ	UG/KG
BENZO(A)ANTHRACENE	577	UJ	UG/KG
BENZO(A)PYRENE	577	UJ	UG/KG
BENZO(B)FLUORANTHENE	577	UJ	UG/KG
BENZO(G,H,I)PERYLENE	577	UJ	UG/KG
BENZO(K)FLUORANTHENE	577	UJ	UG/KG
CHRYSENE	577	UJ	UG/KG
DIBENZO(A,H)ANTHRACENE	577	UJ	UG/KG
FLUORANTHENE	577	UJ	UG/KG
FLUORENE	577	UJ	UG/KG
INDENO(1,2,3-CD)PYRENE	577	UJ	UG/KG
NAPHTHALENE	577	UJ	UG/KG
PHENANTHRENE	577	UJ	UG/KG
PYRENE	577	UJ	UG/KG

Sample Number: B5SS-01
Sample Date: 9/16/96
Laboratory ID: 9609298-03
QC Type: NORMAL
% Moisture: 51
Location: B5SS-1

	RESULT	QUAL	UNIT
1,2,4-TRICHLOROBENZENE	669	UJ	UG/K
2,4-DINITROTOLUENE	669	UJ	UG/K
ACENAPHTHENE	669	UJ	UG/K
ACENAPHTHYLENE	669	UJ	UG/K
ANTHRACENE	669	UJ	UG/K
BENZO(A)ANTHRACENE	669	UJ	UG/K
BENZO(A)PYRENE	669	UJ	UG/K
BENZO(B)FLUORANTHENE	669	UJ	UG/K
BENZO(G,H,I)PERYLENE	669	UJ	UG/K
BENZO(K)FLUORANTHENE	669	UJ	UG/K
CHRYSENE	669	UJ	UG/K
DIBENZO(A,H)ANTHRACENE	669	UJ	UG/K
FLUORANTHENE	669	UJ	UG/K
FLUORENE	669	UJ	UG/K
INDENO(1,2,3-CD)PYRENE	669	UJ	UG/K
N-NITROSODIPROPYLAMINE	669	UJ	UG/K
NAPHTHALENE	669	UJ	UG/K
PHENANTHRENE	669	UJ	UG/K
PYRENE	669	UJ	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69298S

SEMIVOLATILES

Sample Number: I1DPSS
Sample Date: 9/17/96
Laboratory ID: 9609298-05
QC Type: NORMAL
% Moisture: 20
Location: I1DPSS

	RESULT	QUAL	UNITS
ACENAPHTHENE	414	U	UG/KG
ACENAPHTHYLENE	414	U	UG/KG
ANTHRACENE	414	U	UG/KG
BENZO(A)ANTHRACENE	414	U	UG/KG
BENZO(A)PYRENE	414	U	UG/KG
BENZO(B)FLUORANTHENE	414	U	UG/KG
BENZO(G,H,I)PERYLENE	414	U	UG/KG
BENZO(K)FLUORANTHENE	414	U	UG/KG
CHRYSENE	414	U	UG/KG
DIBENZO(A,H)ANTHRACENE	414	U	UG/KG
FLUORANTHENE	414	U	UG/KG
FLUORENE	414	U	UG/KG
INDENO(1,2,3-CD)PYRENE	414	U	UG/KG
NAPHTHALENE	414	U	UG/KG
PHENANTHRENE	414	U	UG/KG
PYRENE	414	U	UG/KG

Sample Number: I1SS-1
Sample Date: 9/17/96
Laboratory ID: 9609298-04
QC Type: NORMAL
% Moisture: 22
Location: I1SS-1

	RESULT	QUAL	UNITS
ACENAPHTHENE	426	U	UG/KG
ACENAPHTHYLENE	426	U	UG/KG
ANTHRACENE	426	U	UG/KG
BENZO(A)ANTHRACENE	426	U	UG/KG
BENZO(A)PYRENE	426	U	UG/KG
BENZO(B)FLUORANTHENE	426	U	UG/KG
BENZO(G,H,I)PERYLENE	426	U	UG/KG
BENZO(K)FLUORANTHENE	426	U	UG/KG
CHRYSENE	426	U	UG/KG
DIBENZO(A,H)ANTHRACENE	426	U	UG/KG
FLUORANTHENE	426	U	UG/KG
FLUORENE	426	U	UG/KG
INDENO(1,2,3-CD)PYRENE	426	U	UG/KG
NAPHTHALENE	426	U	UG/KG
PHENANTHRENE	426	U	UG/KG
PYRENE	426	U	UG/KG

Sample Number: I1SS-2
Sample Date: 9/17/96
Laboratory ID: 9609298-17
QC Type: NORMAL
% Moisture: 40
Location: I1SS-2

	RESULT	QUAL	UNIT
ACENAPHTHENE	556	U	UG/K
ACENAPHTHYLENE	556	U	UG/K
ANTHRACENE	556	U	UG/K
BENZO(A)ANTHRACENE	556	U	UG/K
BENZO(A)PYRENE	556	U	UG/K
BENZO(B)FLUORANTHENE	556	U	UG/K
BENZO(G,H,I)PERYLENE	556	U	UG/K
BENZO(K)FLUORANTHENE	556	U	UG/K
CHRYSENE	556	U	UG/K
DIBENZO(A,H)ANTHRACENE	556	U	UG/K
FLUORANTHENE	289	J	UG/K
FLUORENE	556	U	UG/K
INDENO(1,2,3-CD)PYRENE	556	U	UG/K
NAPHTHALENE	556	U	UG/K
PHENANTHRENE	556	U	UG/K
PYRENE	326	J	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69298S

SEMIVOLATILES

Sample Number: I1SS-3
Sample Date: 9/17/96
Laboratory ID: 9609298-18
QC Type: NORMAL
% Moisture: 25
Location: I1SS-3

	RESULT	QUAL	UNITS
ACENAPHTHENE	443	U	UG/KG
ACENAPHTHYLENE	443	U	UG/KG
ANTHRACENE	443	U	UG/KG
BENZO(A)ANTHRACENE	443	U	UG/KG
BENZO(A)PYRENE	443	U	UG/KG
BENZO(B)FLUORANTHENE	443	U	UG/KG
BENZO(G,H,I)PERYLENE	443	U	UG/KG
BENZO(K)FLUORANTHENE	443	U	UG/KG
CHRYSENE	443	U	UG/KG
DIBENZO(A,H)ANTHRACENE	443	U	UG/KG
FLUORANTHENE	443	U	UG/KG
FLUORENE	443	U	UG/KG
INDENO(1,2,3-CD)PYRENE	443	U	UG/KG
NAPHTHALENE	443	U	UG/KG
PHENANTHRENE	443	U	UG/KG
PYRENE	443	U	UG/KG

Sample Number: I1SS-4
Sample Date: 9/17/96
Laboratory ID: 9609298-20
QC Type: NORMAL
% Moisture: 19
Location: I1SS-4

	RESULT	QUAL	UNITS
ACENAPHTHENE	340	U	UG/KG
ACENAPHTHYLENE	340	U	UG/KG
ANTHRACENE	340	U	UG/KG
BENZO(A)ANTHRACENE	340	U	UG/KG
BENZO(A)PYRENE	340	U	UG/KG
BENZO(B)FLUORANTHENE	340	U	UG/KG
BENZO(G,H,I)PERYLENE	340	U	UG/KG
BENZO(K)FLUORANTHENE	340	U	UG/KG
CHRYSENE	340	U	UG/KG
DIBENZO(A,H)ANTHRACENE	340	U	UG/KG
FLUORANTHENE	340	U	UG/KG
FLUORENE	340	U	UG/KG
INDENO(1,2,3-CD)PYRENE	340	U	UG/KG
NAPHTHALENE	340	U	UG/KG
PHENANTHRENE	340	U	UG/KG
PYRENE	340	U	UG/KG

Sample Number: I1SS-5
Sample Date: 9/17/96
Laboratory ID: 9609298-19
QC Type: NORMAL
% Moisture: 28
Location: I1SS-5

	RESULT	QUAL	UNIT
ACENAPHTHENE	386	U	UG/K
ACENAPHTHYLENE	386	U	UG/K
ANTHRACENE	386	U	UG/K
BENZO(A)ANTHRACENE	386	U	UG/K
BENZO(A)PYRENE	386	U	UG/K
BENZO(B)FLUORANTHENE	386	U	UG/K
BENZO(G,H,I)PERYLENE	386	U	UG/K
BENZO(K)FLUORANTHENE	386	U	UG/K
CHRYSENE	386	U	UG/K
DIBENZO(A,H)ANTHRACENE	386	U	UG/K
FLUORANTHENE	386	U	UG/K
FLUORENE	386	U	UG/K
INDENO(1,2,3-CD)PYRENE	386	U	UG/K
NAPHTHALENE	386	U	UG/K
PHENANTHRENE	386	U	UG/K
PYRENE	386	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69298S

SEMIVOLATILES

Sample Number: I1SS-6
Sample Date: 9/17/96
Laboratory ID: 9609298-06
QC Type: NORMAL
% Moisture: 18
Location: I1SS-6

	RESULT	QUAL	UNITS
ACENAPHTHENE	406	U	UG/KG
ACENAPHTHYLENE	406	U	UG/KG
ANTHRACENE	406	U	UG/KG
BENZO(A)ANTHRACENE	406	U	UG/KG
BENZO(A)PYRENE	406	U	UG/KG
BENZO(B)FLUORANTHENE	406	U	UG/KG
BENZO(G,H,I)PERYLENE	406	U	UG/KG
BENZO(K)FLUORANTHENE	406	U	UG/KG
CHRYSENE	406	U	UG/KG
DIBENZO(A,H)ANTHRACENE	406	U	UG/KG
FLUORANTHENE	406	U	UG/KG
FLUORENE	406	U	UG/KG
INDENO(1,2,3-CD)PYRENE	406	U	UG/KG
NAPHTHALENE	406	U	UG/KG
PHENANTHRENE	406	U	UG/KG
PYRENE	406	U	UG/KG

Sample Number: I1SS-7
Sample Date: 9/17/96
Laboratory ID: 9609298-07
QC Type: NORMAL
% Moisture: 66
Location: I1SS-7

	RESULT	QUAL	UNITS
ACENAPHTHENE	402	U	UG/KG
	402	U	UG/KG
ACENAPHTHYLENE	402	U	UG/KG
	402	U	UG/KG
ANTHRACENE	402	U	UG/KG
	402	U	UG/KG
BENZO(A)ANTHRACENE	402	U	UG/KG
	402	U	UG/KG
BENZO(A)PYRENE	402	U	UG/KG
	402	U	UG/KG
BENZO(B)FLUORANTHENE	402	U	UG/KG
	402	U	UG/KG
BENZO(G,H,I)PERYLENE	402	U	UG/KG
	402	U	UG/KG
BENZO(K)FLUORANTHENE	402	U	UG/KG
	402	U	UG/KG
CHRYSENE	402	U	UG/KG
	402	U	UG/KG
DIBENZO(A,H)ANTHRACENE	402	U	UG/KG
	402	U	UG/KG
FLUORANTHENE	402	U	UG/KG
	402	U	UG/KG
FLUORENE	402	U	UG/KG
	402	U	UG/KG
INDENO(1,2,3-CD)PYRENE	402	U	UG/KG
	402	U	UG/KG
NAPHTHALENE	402	U	UG/KG
	402	U	UG/KG
PHENANTHRENE	402	U	UG/KG
	402	U	UG/KG
PYRENE	402	U	UG/KG
	402	U	UG/KG

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GENERAL ENGINEERING LABS

SDG: 69298S

PESTICIDES/PCBs

Sample Number: ABDPSS
Sample Date: 9/17/96
Laboratory ID: 9609298-12
QC Type: NORMAL
% Moisture: 43
Location: ABDPSS

	RESULT	QUAL	UNITS
2,4,5-T	3.5	U	UG/KG
2,4,5-TP (SILVEX)	3.5	U	UG/KG
2,4-D	3.5	U	UG/KG
4,4'-DDD	1.9	J	UG/KG
4,4'-DDE	1.8	J	UG/KG
4,4'-DDT	3.6	J	UG/KG
ALDRIN	1.1	U	UG/KG
ALPHA-BHC	1.1	U	UG/KG
AROCLOR-1016	7.2	U	UG/KG
AROCLOR-1221	7.2	U	UG/KG
AROCLOR-1232	7.2	U	UG/KG
AROCLOR-1242	7.2	U	UG/KG
AROCLOR-1248	7.2	U	UG/KG
AROCLOR-1254	7.2	U	UG/KG
AROCLOR-1260	7.2	U	UG/KG
BETA-BHC	1.1	U	UG/KG
CHLORDANE	14.4	U	UG/KG
DELTA-BHC	1.1	U	UG/KG
DIELDRIN	2.3	U	UG/KG
ENDOSULFAN I	3.7	J	UG/KG
ENDOSULFAN II	2.3	U	UG/KG
ENDOSULFAN SULFATE	2.3	U	UG/KG
ENDRIN	2.3	U	UG/KG
ENDRIN ALDEHYDE	2.3	U	UG/KG
GAMMA-BHC (LINDANE)	1.9	J	UG/KG
HEPTACHLOR	1.2		UG/KG
HEPTACHLOR EPOXIDE	1.2	J	UG/KG
METHOXYCHLOR	11.5	U	UG/KG
PARATHION	2.9	U	UG/KG
PARATHION, METHYL	2.9	U	UG/KG
PHORATE	2.9	U	UG/KG
TOXAPHENE	57.4	U	UG/KG

Sample Number: ABSS-1
Sample Date: 9/17/96
Laboratory ID: 9609298-11
QC Type: NORMAL
% Moisture: 37
Location: ABSS-1

	RESULT	QUAL	UNITS
2,4,5-T	3	U	UG/KG
2,4,5-TP (SILVEX)	3	U	UG/KG
2,4-D	3	U	UG/KG
4,4'-DDD	2.7		UG/KG
4,4'-DDE	2.3	J	UG/KG
4,4'-DDT	3.6	J	UG/KG
ALDRIN	1	U	UG/KG
ALPHA-BHC	1	U	UG/KG
AROCLOR-1016	6.6	U	UG/KG
AROCLOR-1221	6.6	U	UG/KG
AROCLOR-1232	6.6	U	UG/KG
AROCLOR-1242	6.6	U	UG/KG
AROCLOR-1248	6.6	U	UG/KG
AROCLOR-1254	6.6	U	UG/KG
AROCLOR-1260	6.6	U	UG/KG
BETA-BHC	1	U	UG/KG
CHLORDANE	13.1	U	UG/KG
DELTA-BHC	1	U	UG/KG
DIELDRIN	2.1	U	UG/KG
ENDOSULFAN I	2.5	J	UG/KG
ENDOSULFAN II	2.1	U	UG/KG
ENDOSULFAN SULFATE	2.1	U	UG/KG
ENDRIN	2.1	U	UG/KG
ENDRIN ALDEHYDE	2.1	U	UG/KG
GAMMA-BHC (LINDANE)	1	U	UG/KG
HEPTACHLOR	1	U	UG/KG
HEPTACHLOR EPOXIDE	1	U	UG/KG
METHOXYCHLOR	10.5	U	UG/KG
PARATHION	2.6	U	UG/KG
PARATHION, METHYL	2.6	U	UG/KG
PHORATE	2.6	U	UG/KG
TOXAPHENE	[illegible]	U	UG/KG

Sample Number: ABSS-2
Sample Date: 9/17/96
Laboratory ID: 9609298-16
QC Type: NORMAL
% Moisture: 36
Location: ABSS-2

	RESULT	QUAL	UNIT
2,4,5-T	3.1	U	UG/K
2,4,5-TP (SILVEX)	3.1	U	UG/K
2,4-D	3.1	U	UG/K
4,4'-DDD	2.2	J	UG/K
4,4'-DDE	4.4		UG/K
4,4'-DDT	6.3		UG/K
ALDRIN	1	U	UG/K
ALPHA-BHC	1	U	UG/K
AROCLOR-1016	6.5	U	UG/K
AROCLOR-1221	6.5	U	UG/K
AROCLOR-1232	6.5	U	UG/K
AROCLOR-1242	6.5	U	UG/K
AROCLOR-1248	6.5	U	UG/K
AROCLOR-1254	6.5	U	UG/K
AROCLOR-1260	6.5	U	UG/K
BETA-BHC	1	U	UG/K
CHLORDANE	13	U	UG/K
DELTA-BHC	1	U	UG/K
DIELDRIN	2.1	U	UG/K
ENDOSULFAN I	4.9	J	UG/K
ENDOSULFAN II	2.1	U	UG/K
ENDOSULFAN SULFATE	2.1	U	UG/K
ENDRIN	1.7	J	UG/K
ENDRIN ALDEHYDE	2.1	U	UG/K
GAMMA-BHC (LINDANE)	8.7	J	UG/K
HEPTACHLOR	1	U	UG/K
HEPTACHLOR EPOXIDE	1	U	UG/K
METHOXYCHLOR	10.4	U	UG/K
PARATHION	2.6	U	UG/K
PARATHION, METHYL	2.6	U	UG/K
PHORATE	2.6	U	UG/K
TOXAPHENE	51.8	U	UG/K

CTO 007 - KEY WEST
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SDG: 69298S

PESTICIDES/PCBs

Sample Number: ABSS-3
Sample Date: 9/17/96
Laboratory ID: 9609298-08
QC Type: NORMAL
% Moisture: 36
Location: ABSS-3

	RESULT	QUAL	UNITS
2,4,5-T	3.1	U	UG/KG
2,4,5-TP (SILVEX)	3.1	U	UG/KG
2,4-D	3.1	U	UG/KG
4,4'-DDD	3.1		UG/KG
4,4'-DDE	3.4	J	UG/KG
4,4'-DDT	3.9		UG/KG
ALDRIN	1	U	UG/KG
ALPHA-BHC	1	U	UG/KG
AROCLOR-1016	6.5	U	UG/KG
AROCLOR-1221	6.5	U	UG/KG
AROCLOR-1232	6.5	U	UG/KG
AROCLOR-1242	6.5	U	UG/KG
AROCLOR-1248	6.5	U	UG/KG
AROCLOR-1254	6.5	U	UG/KG
AROCLOR-1260	19	J	UG/KG
BETA-BHC	1	U	UG/KG
CHLORDANE	12.9	U	UG/KG
DELTA-BHC	1	U	UG/KG
DIELDRIN	2.1	U	UG/KG
ENDOSULFAN I	6.2	J	UG/KG
ENDOSULFAN II	2.1	U	UG/KG
ENDOSULFAN SULFATE	2.1	U	UG/KG
ENDRIN	1.5	J	UG/KG
ENDRIN ALDEHYDE	2.1	U	UG/KG
GAMMA-BHC (LINDANE)	1.5	R	UG/KG
HEPTACHLOR	1.3		UG/KG
HEPTACHLOR EPOXIDE	3		UG/KG
METHOXYCHLOR	10.3	U	UG/KG
PARATHION	2.6	U	UG/KG
PARATHION, METHYL	2.6	U	UG/KG
PHORATE	2.6	U	UG/KG
TOXAPHENE	51.7	U	UG/KG

Sample Number: ABSS-4
Sample Date: 9/17/96
Laboratory ID: 9609298-13
QC Type: NORMAL
% Moisture: 32
Location: ABSS-4

	RESULT	QUAL	UNITS
2,4,5-T	2.9	U	UG/KG
2,4,5-TP (SILVEX)	2.9	U	UG/KG
2,4-D	2.9	U	UG/KG
4,4'-DDD	12.6	J	UG/KG
4,4'-DDE	15.7	J	UG/KG
4,4'-DDT	25.8	R	UG/KG
ALDRIN	9.7	U	UG/KG
ALPHA-BHC	9.7	U	UG/KG
AROCLOR-1016	60.4	U	UG/KG
AROCLOR-1221	60.4	U	UG/KG
AROCLOR-1232	60.4	U	UG/KG
AROCLOR-1242	60.4	U	UG/KG
AROCLOR-1248	60.4	U	UG/KG
AROCLOR-1254	470	J	UG/KG
AROCLOR-1260	402		UG/KG
BETA-BHC	9.7	U	UG/KG
CHLORDANE	121	U	UG/KG
DELTA-BHC	9.7	U	UG/KG
DIELDRIN	28.8	J	UG/KG
ENDOSULFAN I	19.5		UG/KG
ENDOSULFAN II	19.3	U	UG/KG
ENDOSULFAN SULFATE	19.3	U	UG/KG
ENDRIN	32.5		UG/KG
ENDRIN ALDEHYDE	19.3	U	UG/KG
GAMMA-BHC (LINDANE)	9.7	U	UG/KG
HEPTACHLOR	6.9	J	UG/KG
HEPTACHLOR EPOXIDE	9.7	U	UG/KG
METHOXYCHLOR	96.6	U	UG/KG
PARATHION	24.2	U	UG/KG
PARATHION, METHYL	24.2	U	UG/KG
PHORATE	24.2	U	UG/KG
TOXAPHENE	483	U	UG/KG

Sample Number: ABSS-5
Sample Date: 9/17/96
Laboratory ID: 9609298-09
QC Type: NORMAL
% Moisture: 51
Location: ABSS-5

	RESULT	QUAL	UNIT
2,4,5-T	4	U	UG/K
2,4,5-TP (SILVEX)	4	U	UG/K
2,4-D	4	U	UG/K
4,4'-DDD	3.1		UG/K
4,4'-DDE	4.1	J	UG/K
4,4'-DDT	5.5	J	UG/K
ALDRIN	1.3	U	UG/K
ALPHA-BHC	1.3	U	UG/K
AROCLOR-1016	8.4	U	UG/K
AROCLOR-1221	8.4	U	UG/K
AROCLOR-1232	8.4	U	UG/K
AROCLOR-1242	8.4	U	UG/K
AROCLOR-1248	8.4	U	UG/K
AROCLOR-1254	8.4	U	UG/K
AROCLOR-1260	8.4	U	UG/K
BETA-BHC	1.3	U	UG/K
CHLORDANE	16.8	U	UG/K
DELTA-BHC	1.3	U	UG/K
DIELDRIN	2.7	U	UG/K
ENDOSULFAN I	2.4		UG/K
ENDOSULFAN II	3.1	U	UG/K
ENDOSULFAN SULFATE	2.7	U	UG/K
ENDRIN	1.4	J	UG/K
ENDRIN ALDEHYDE	2.7	U	UG/K
GAMMA-BHC (LINDANE)	1.6		UG/K
HEPTACHLOR	1.3	U	UG/K
HEPTACHLOR EPOXIDE	1.3	J	UG/K
METHOXYCHLOR	13.5	U	UG/K
PARATHION	3.4	U	UG/K
PARATHION, METHYL	3.4	U	UG/K
PHORATE	3.4	U	UG/K
TOXAPHENE	67.4	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69298S

PESTICIDES/PCBs

Sample Number: ABSS-7
Sample Date: 9/17/96
Laboratory ID: 9609298-14
QC Type: NORMAL
% Moisture: 34
Location: ABSS-7

	RESULT	QUAL	UNITS
2,4,5-T	3	U	UG/KG
2,4,5-TP (SILVEX)	3	U	UG/KG
2,4-D	3	U	UG/KG
4,4'-DDD	2.6	J	UG/KG
4,4'-DDE	3.7	J	UG/KG
4,4'-DDT	4.1	J	UG/KG
ALDRIN	1	U	UG/KG
ALPHA-BHC	1	U	UG/KG
AROCLOR-1016	6.3	U	UG/KG
AROCLOR-1221	6.3	U	UG/KG
AROCLOR-1232	6.3	U	UG/KG
AROCLOR-1242	6.3	U	UG/KG
AROCLOR-1248	6.3	U	UG/KG
AROCLOR-1254	6.3	U	UG/KG
AROCLOR-1260	6.3	U	UG/KG
BETA-BHC	1	U	UG/KG
CHLORDANE	12.6	U	UG/KG
DELTA-BHC	1	U	UG/KG
DIELDRIN	2.5	J	UG/KG
ENDOSULFAN I	3.5	J	UG/KG
ENDOSULFAN II	2	U	UG/KG
ENDOSULFAN SULFATE	2	U	UG/KG
ENDRIN	1.4	J	UG/KG
ENDRIN ALDEHYDE	2	U	UG/KG
GAMMA-BHC (LINDANE)	6.8	R	UG/KG
HEPTACHLOR	1	U	UG/KG
HEPTACHLOR EPOXIDE	1.7		UG/KG
METHOXYCHLOR	10.1	U	UG/KG
PARATHION	2.5	U	UG/KG
PARATHION, METHYL	2.5	U	UG/KG
PHORATE	2.5	U	UG/KG
TOXAPHENE	50.5	U	UG/KG

Sample Number: ABSS-8
Sample Date: 9/17/96
Laboratory ID: 9609298-10
QC Type: NORMAL
% Moisture: 50
Location: ABSS-8

	RESULT	QUAL	UNITS
2,4,5-T	3.9	U	UG/KG
2,4,5-TP (SILVEX)	3.9	U	UG/KG
2,4-D	3.9	U	UG/KG
4,4'-DDD	6.1	J	UG/KG
4,4'-DDE	4.8	J	UG/KG
4,4'-DDT	6.4	J	UG/KG
ALDRIN	1.3	U	UG/KG
ALPHA-BHC	1.3	U	UG/KG
AROCLOR-1016	8.3	U	UG/KG
AROCLOR-1221	8.3	U	UG/KG
AROCLOR-1232	8.3	U	UG/KG
AROCLOR-1242	8.3	U	UG/KG
AROCLOR-1248	8.3	U	UG/KG
AROCLOR-1254	8.3	U	UG/KG
AROCLOR-1260	8.3	U	UG/KG
BETA-BHC	1.3	U	UG/KG
CHLORDANE	16.6	U	UG/KG
DELTA-BHC	1.3	U	UG/KG
DIELDRIN	2.6	U	UG/KG
ENDOSULFAN I	4.6		UG/KG
ENDOSULFAN II	2.6	U	UG/KG
ENDOSULFAN SULFATE	2.6	U	UG/KG
ENDRIN	2.6	U	UG/KG
ENDRIN ALDEHYDE	2.6	U	UG/KG
GAMMA-BHC (LINDANE)	1.9		UG/KG
HEPTACHLOR	1.1	J	UG/KG
HEPTACHLOR EPOXIDE	1.8	J	UG/KG
METHOXYCHLOR	13.2	U	UG/KG
PARATHION	3.3	U	UG/KG
PARATHION, METHYL	3.3	U	UG/KG
PHORATE	3.3	U	UG/KG
TOXAPHENE	[illegible]2	U	UG/KG

Sample Number: ABSS-9
Sample Date: 9/17/96
Laboratory ID: 9609298-15
QC Type: NORMAL
% Moisture: 35
Location: ABSS-9

	RESULT	QUAL	UNIT
2,4,5-T	3	U	UG/K
2,4,5-TP (SILVEX)	3	U	UG/K
2,4-D	3	U	UG/K
4,4'-DDD	2.7		UG/K
4,4'-DDE	3	J	UG/K
4,4'-DDT	3.3	J	UG/K
ALDRIN	1	U	UG/K
ALPHA-BHC	1	U	UG/K
AROCLOR-1016	6.3	U	UG/K
AROCLOR-1221	6.3	U	UG/K
AROCLOR-1232	6.3	U	UG/K
AROCLOR-1242	6.3	U	UG/K
AROCLOR-1248	6.3	U	UG/K
AROCLOR-1254	6.3	U	UG/K
AROCLOR-1260	17	J	UG/K
BETA-BHC	1	U	UG/K
CHLORDANE	12.6	U	UG/K
DELTA-BHC	1	U	UG/K
DIELDRIN	2.3	J	UG/K
ENDOSULFAN I	4.6	J	UG/K
ENDOSULFAN II	2	U	UG/K
ENDOSULFAN SULFATE	1.9	J	UG/K
ENDRIN	2	U	UG/K
ENDRIN ALDEHYDE	2	U	UG/K
GAMMA-BHC (LINDANE)	2.1	R	UG/K
HEPTACHLOR	1	J	UG/K
HEPTACHLOR EPOXIDE	1.7	J	UG/K
METHOXYCHLOR	10.1	U	UG/K
PARATHION	2.5	U	UG/K
PARATHION, METHYL	2.5	U	UG/K
PHORATE	2.5	U	UG/K
TOXAPHENE	50.5	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69298S

PESTICIDES/PCBs

Sample Number: B4SS-01
Sample Date: 9/16/96
Laboratory ID: 9609298-01
QC Type: NORMAL
% Moisture: 32
Location: B4SS-1

	RESULT	QUAL	UNITS
2,4,5-T	2.9	U	UG/KG
2,4,5-TP (SILVEX)	2.9	U	UG/KG
2,4-D	2.9	U	UG/KG
4,4'-DDD	1.9	U	UG/KG
4,4'-DDE	1.9	U	UG/KG
4,4'-DDT	1.9	U	UG/KG
ALDRIN	0.96	U	UG/KG
ALPHA-BHC	1.1		UG/KG
AROCLOR-1016	6	U	UG/KG
AROCLOR-1221	6	U	UG/KG
AROCLOR-1232	6	U	UG/KG
AROCLOR-1242	6	U	UG/KG
AROCLOR-1248	6	U	UG/KG
AROCLOR-1254	6	U	UG/KG
AROCLOR-1260	6	U	UG/KG
BETA-BHC	0.96	U	UG/KG
CHLORDANE	12.1	U	UG/KG
DELTA-BHC	0.96	U	UG/KG
DIELDRIN	1.9	U	UG/KG
ENDOSULFAN I	0.96	U	UG/KG
ENDOSULFAN II	1.9	U	UG/KG
ENDOSULFAN SULFATE	1.9	U	UG/KG
ENDRIN	1.9	U	UG/KG
ENDRIN ALDEHYDE	1.9	U	UG/KG
GAMMA-BHC (LINDANE)	0.96	U	UG/KG
HEPTACHLOR	1.1		UG/KG
HEPTACHLOR EPOXIDE	0.96	U	UG/KG
METHOXYCHLOR	9.6	U	UG/KG
PARATHION	2.4	U	UG/KG
PARATHION, METHYL	2.4	U	UG/KG
PHORATE	2.4	U	UG/KG
TOXAPHENE	48.3	U	UG/KG

Sample Number: B4SS-02
Sample Date: 9/16/96
Laboratory ID: 9609298-02
QC Type: NORMAL
% Moisture: 43
Location: B4SS-2

	RESULT	QUAL	UNITS
2,4,5-T	3.4	U	UG/KG
2,4,5-TP (SILVEX)	3.4	U	UG/KG
2,4-D	24.7	J	UG/KG
4,4'-DDD	2.3	U	UG/KG
4,4'-DDE	2.3	U	UG/KG
4,4'-DDT	2.3	U	UG/KG
ALDRIN	1.1	U	UG/KG
ALPHA-BHC	1.2		UG/KG
AROCLOR-1016	7.2	U	UG/KG
AROCLOR-1221	7.2	U	UG/KG
AROCLOR-1232	7.2	U	UG/KG
AROCLOR-1242	7.2	U	UG/KG
AROCLOR-1248	7.2	U	UG/KG
AROCLOR-1254	7.2	U	UG/KG
AROCLOR-1260	7.2	U	UG/KG
BETA-BHC	1.1	U	UG/KG
CHLORDANE	14.4	U	UG/KG
DELTA-BHC	1.1	U	UG/KG
DIELDRIN	2.3	U	UG/KG
ENDOSULFAN I	1.2		UG/KG
ENDOSULFAN II	2.3	U	UG/KG
ENDOSULFAN SULFATE	2.3	U	UG/KG
ENDRIN	2.3	U	UG/KG
ENDRIN ALDEHYDE	2.3	U	UG/KG
GAMMA-BHC (LINDANE)	1.3	J	UG/KG
HEPTACHLOR	1.3	J	UG/KG
HEPTACHLOR EPOXIDE	1.1	U	UG/KG
METHOXYCHLOR	11.5	U	UG/KG
PARATHION	2.9	U	UG/KG
PARATHION, METHYL	2.9	U	UG/KG
PHORATE	2.9	U	UG/KG
TOXAPHENE	57.5	U	UG/KG

Sample Number: B5SS-01
Sample Date: 9/16/96
Laboratory ID: 9609298-03
QC Type: NORMAL
% Moisture: 51
Location: B5SS-1

	RESULT	QUAL	UNIT
2,4,5-T	4	UR	UG/K
2,4,5-TP (SILVEX)	4	UR	UG/K
2,4-D	4	UR	UG/K
4,4'-DDD	2.7	U	UG/K
4,4'-DDE	2.7	U	UG/K
4,4'-DDT	2.7	U	UG/K
ALDRIN	1.3	U	UG/K
ALPHA-BHC	1.5		UG/K
AROCLOR-1016	8.4	U	UG/K
AROCLOR-1221	8.4	U	UG/K
AROCLOR-1232	8.4	U	UG/K
AROCLOR-1242	8.4	U	UG/K
AROCLOR-1248	8.4	U	UG/K
AROCLOR-1254	8.4	U	UG/K
AROCLOR-1260	8.4	U	UG/K
BETA-BHC	1.3	U	UG/K
CHLORDANE	16.7	U	UG/K
DELTA-BHC	1.3	U	UG/K
DIELDRIN	2.7	U	UG/K
ENDOSULFAN I	1.3	U	UG/K
ENDOSULFAN II	2.7	U	UG/K
ENDOSULFAN SULFATE	2.7	U	UG/K
ENDRIN	2.7	U	UG/K
ENDRIN ALDEHYDE	2.7	U	UG/K
GAMMA-BHC (LINDANE)	2.1		UG/K
HEPTACHLOR	1.3	U	UG/K
HEPTACHLOR EPOXIDE	1.3	U	UG/K
METHOXYCHLOR	13.4	U	UG/K
PARATHION	3.3	U	UG/K
PARATHION, METHYL	3.3	U	UG/K
PHORATE	3.3	U	UG/K
TOXAPHENE	66.8	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69298S

PESTICIDES/PCBs

Sample Number: I1DPSS
Sample Date: 9/17/96
Laboratory ID: 9609298-05
QC Type: NORMAL
% Moisture: 20
Location: I1DPSS

	RESULT	QUAL	UNITS
2,4,5-T	2.5	U	UG/KG
2,4,5-TP (SILVEX)	2.5	U	UG/KG
2,4-D	2.5	U	UG/KG
4,4'-DDD	812	U	UG/KG
4,4'-DDE	812	U	UG/KG
4,4'-DDT	711	J	UG/KG
ALDRIN	406	U	UG/KG
ALPHA-BHC	406	U	UG/KG
AROCLOR-1016	2540	U	UG/KG
AROCLOR-1221	2540	U	UG/KG
AROCLOR-1232	2540	U	UG/KG
AROCLOR-1242	2540	U	UG/KG
AROCLOR-1248	2540	U	UG/KG
AROCLOR-1254	2540	U	UG/KG
AROCLOR-1260	4120		UG/KG
BETA-BHC	406	U	UG/KG
CHLORDANE	5080	U	UG/KG
DELTA-BHC	406	U	UG/KG
DIELDRIN	812	U	UG/KG
ENDOSULFAN I	375	J	UG/KG
ENDOSULFAN II	812	U	UG/KG
ENDOSULFAN SULFATE	812	U	UG/KG
ENDRIN	574	J	UG/KG
ENDRIN ALDEHYDE	676	J	UG/KG
GAMMA-BHC (LINDANE)	406	U	UG/KG
HEPTACHLOR	406	U	UG/KG
HEPTACHLOR EPOXIDE	406	U	UG/KG
METHOXYCHLOR	4060	U	UG/KG
PARATHION	1020	U	UG/KG
PARATHION, METHYL	1020	U	UG/KG
PHORATE	1020	U	UG/KG
TOXAPHENE	20300	U	UG/KG

Sample Number: I1SS-1
Sample Date: 9/17/96
Laboratory ID: 9609298-04
QC Type: NORMAL
% Moisture: 22
Location: I1SS-1

	RESULT	QUAL	UNITS
2,4,5-T	2.5	U	UG/KG
2,4,5-TP (SILVEX)	2.5	U	UG/KG
2,4-D	2.5	U	UG/KG
4,4'-DDD	170	U	UG/KG
4,4'-DDE	186	J	UG/KG
4,4'-DDT	1500	R	UG/KG
ALDRIN	85	U	UG/KG
ALPHA-BHC	85	U	UG/KG
AROCLOR-1016	531	U	UG/KG
AROCLOR-1221	531	U	UG/KG
AROCLOR-1232	531	U	UG/KG
AROCLOR-1242	531	U	UG/KG
AROCLOR-1248	531	U	UG/KG
AROCLOR-1254	531	U	UG/KG
AROCLOR-1260	32400		UG/KG
BETA-BHC	85	U	UG/KG
CHLORDANE	1060	U	UG/KG
DELTA-BHC	85	U	UG/KG
DIELDRIN	126	R	UG/KG
ENDOSULFAN I	137		UG/KG
ENDOSULFAN II	170	U	UG/KG
ENDOSULFAN SULFATE	276		UG/KG
ENDRIN	2350		UG/KG
ENDRIN ALDEHYDE	170	U	UG/KG
GAMMA-BHC (LINDANE)	85	U	UG/KG
HEPTACHLOR	85	U	UG/KG
HEPTACHLOR EPOXIDE	85	U	UG/KG
METHOXYCHLOR	850	U	UG/KG
PARATHION	212	U	UG/KG
PARATHION, METHYL	212	U	UG/KG
PHORATE	212	U	UG/KG
TOXAPHENE	4250	U	UG/KG

Sample Number: I1SS-2
Sample Date: 9/17/96
Laboratory ID: 9609298-17
QC Type: NORMAL
% Moisture: 40
Location: I1SS-2

	RESULT	QUAL	UNIT
2,4,5-T	3.3	U	UG/K
2,4,5-TP (SILVEX)	3.3	U	UG/K
2,4-D	3.3	U	UG/K
4,4'-DDD	29.4		UG/K
4,4'-DDE	75.8		UG/K
4,4'-DDT	43.1	R	UG/K
ALDRIN	10.9	U	UG/K
ALPHA-BHC	10.9	U	UG/K
AROCLOR-1016	68.1	U	UG/K
AROCLOR-1221	68.1	U	UG/K
AROCLOR-1232	68.1	U	UG/K
AROCLOR-1242	68.1	U	UG/K
AROCLOR-1248	68.1	U	UG/K
AROCLOR-1254	669	J	UG/K
AROCLOR-1260	905		UG/K
BETA-BHC	10.9	U	UG/K
CHLORDANE	136	U	UG/K
DELTA-BHC	10.9	U	UG/K
DIELDRIN	21.8	U	UG/K
ENDOSULFAN I	25.2		UG/K
ENDOSULFAN II	21.8	U	UG/K
ENDOSULFAN SULFATE	21.8	U	UG/K
ENDRIN	59.5		UG/K
ENDRIN ALDEHYDE	21.8	U	UG/K
GAMMA-BHC (LINDANE)	10.9	U	UG/K
HEPTACHLOR	18.9	J	UG/K
HEPTACHLOR EPOXIDE	10.9	U	UG/K
METHOXYCHLOR	109	U	UG/K
PARATHION	27.2	U	UG/K
PARATHION, METHYL	27.2	U	UG/K
PHORATE	27.2	U	UG/K
TOXAPHENE	545	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69298S

PESTICIDES/PCBs

Sample Number: I1SS-3
Sample Date: 9/17/96
Laboratory ID: 9609298-18
QC Type: NORMAL
% Moisture: 25
Location: I1SS-3

	RESULT	QUAL	UNITS
2,4,5-T	2.6	U	UG/KG
2,4,5-TP (SILVEX)	2.6	U	UG/KG
2,4-D	2.6	U	UG/KG
4,4'-DDD	2.5		UG/KG
4,4'-DDE	4.2		UG/KG
4,4'-DDT	4.6		UG/KG
ALDRIN	0.87	U	UG/KG
ALPHA-BHC	0.87	U	UG/KG
AROCLOR-1016	5.4	U	UG/KG
AROCLOR-1221	5.4	U	UG/KG
AROCLOR-1232	5.4	U	UG/KG
AROCLOR-1242	5.4	U	UG/KG
AROCLOR-1248	5.4	U	UG/KG
AROCLOR-1254	5.4	U	UG/KG
AROCLOR-1260	24.1	J	UG/KG
BETA-BHC	0.87	U	UG/KG
CHLORDANE	10.9	U	UG/KG
DELTA-BHC	0.87	U	UG/KG
DIELDRIN	1.7	U	UG/KG
ENDOSULFAN I	2.7		UG/KG
ENDOSULFAN II	1.7	U	UG/KG
ENDOSULFAN SULFATE	1.6	R	UG/KG
ENDRIN	1.2	J	UG/KG
ENDRIN ALDEHYDE	1.7	U	UG/KG
GAMMA-BHC (LINDANE)	2		UG/KG
HEPTACHLOR	1.2		UG/KG
HEPTACHLOR EPOXIDE	1.5	J	UG/KG
METHOXYCHLOR	8.7	U	UG/KG
PARATHION	2.2	U	UG/KG
PARATHION, METHYL	2.2	U	UG/KG
PHORATE	2.2	U	UG/KG
TOXAPHENE	43.6	U	UG/KG

Sample Number: I1SS-4
Sample Date: 9/17/96
Laboratory ID: 9609298-20
QC Type: NORMAL
% Moisture: 19
Location: I1SS-4

	RESULT	QUAL	UNITS
2,4,5-T	2.4	U	UG/KG
2,4,5-TP (SILVEX)	2.4	U	UG/KG
2,4-D	2.4	U	UG/KG
4,4'-DDD	13.7	R	UG/KG
4,4'-DDE	26.6		UG/KG
4,4'-DDT	118	J	UG/KG
ALDRIN	8.2	U	UG/KG
ALPHA-BHC	8.2	U	UG/KG
AROCLOR-1016	51	U	UG/KG
AROCLOR-1221	51	U	UG/KG
AROCLOR-1232	51	U	UG/KG
AROCLOR-1242	51	U	UG/KG
AROCLOR-1248	51	U	UG/KG
AROCLOR-1254	51	U	UG/KG
AROCLOR-1260	2290		UG/KG
BETA-BHC	8.2	U	UG/KG
CHLORDANE	102	U	UG/KG
DELTA-BHC	8.2	U	UG/KG
DIELDRIN	13.6	J	UG/KG
ENDOSULFAN I	21.9		UG/KG
ENDOSULFAN II	16.3	U	UG/KG
ENDOSULFAN SULFATE	16.3	U	UG/KG
ENDRIN	9	R	UG/KG
ENDRIN ALDEHYDE	34.7	R	UG/KG
GAMMA-BHC (LINDANE)	8.2	U	UG/KG
HEPTACHLOR	7.8	J	UG/KG
HEPTACHLOR EPOXIDE	8.2	U	UG/KG
METHOXYCHLOR	81.5	U	UG/KG
PARATHION	20.4	U	UG/KG
PARATHION, METHYL	20.4	U	UG/KG
PHORATE	20.4	U	UG/KG
TOXAPHENE	408	U	UG/KG

Sample Number: I1SS-5
Sample Date: 9/17/96
Laboratory ID: 9609298-19
QC Type: NORMAL
% Moisture: 28
Location: I1SS-5

	RESULT	QUAL	UNIT
2,4,5-T	2.7	U	UG/K
2,4,5-TP (SILVEX)	2.7	U	UG/K
2,4-D	2.7	U	UG/K
4,4'-DDD	3.1	J	UG/K
4,4'-DDE	5.9	J	UG/K
4,4'-DDT	13.1		UG/K
ALDRIN	0.92	U	UG/K
ALPHA-BHC	0.92	U	UG/K
AROCLOR-1016	5.8	U	UG/K
AROCLOR-1221	5.8	U	UG/K
AROCLOR-1232	5.8	U	UG/K
AROCLOR-1242	5.8	U	UG/K
AROCLOR-1248	5.8	U	UG/K
AROCLOR-1254	5.8	U	UG/K
AROCLOR-1260	79.8	J	UG/K
BETA-BHC	0.92	U	UG/K
CHLORDANE	11.5	U	UG/K
DELTA-BHC	0.92	U	UG/K
DIELDRIN	1.8	U	UG/K
ENDOSULFAN I	2.2	J	UG/K
ENDOSULFAN II	1.8	U	UG/K
ENDOSULFAN SULFATE	1.8	U	UG/K
ENDRIN	6.5		UG/K
ENDRIN ALDEHYDE	1.8	U	UG/K
GAMMA-BHC (LINDANE)	3.3	J	UG/K
HEPTACHLOR	2	J	UG/K
HEPTACHLOR EPOXIDE	0.92	U	UG/K
METHOXYCHLOR	9.2	U	UG/K
PARATHION	2.3	U	UG/K
PARATHION, METHYL	2.3	U	UG/K
PHORATE	2.3	U	UG/K
TOXAPHENE	46.1	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69298S

PESTICIDES/PCBs

Sample Number: I1SS-6
Sample Date: 9/17/96
Laboratory ID: 9609298-06
QC Type: NORMAL
% Moisture: 18
Location: I1SS-6

	RESULT	QUAL	UNITS
2,4,5-T	2.3	U	UG/KG
2,4,5-TP (SILVEX)	2.3	U	UG/KG
2,4-D	2.3	U	UG/KG
4,4'-DDD	4.6	J	UG/KG
4,4'-DDE	9.5		UG/KG
4,4'-DDT	6.5	J	UG/KG
ALDRIN	0.79	U	UG/KG
ALPHA-BHC	0.79	U	UG/KG
AROCLOR-1016	4.9	U	UG/KG
AROCLOR-1221	4.9	U	UG/KG
AROCLOR-1232	4.9	U	UG/KG
AROCLOR-1242	4.9	U	UG/KG
AROCLOR-1248	4.9	U	UG/KG
AROCLOR-1254	4.9	U	UG/KG
AROCLOR-1260	66.6		UG/KG
BETA-BHC	0.79	U	UG/KG
CHLORDANE	9.9	U	UG/KG
DELTA-BHC	1		UG/KG
DIELDRIN	2.4	J	UG/KG
ENDOSULFAN I	1.7	J	UG/KG
ENDOSULFAN II	1.6	U	UG/KG
ENDOSULFAN SULFATE	0.84	J	UG/KG
ENDRIN	3.3		UG/KG
ENDRIN ALDEHYDE	1.6	U	UG/KG
GAMMA-BHC (LINDANE)	0.78	J	UG/KG
HEPTACHLOR	0.79	U	UG/KG
HEPTACHLOR EPOXIDE	0.79	U	UG/KG
METHOXYCHLOR	7.9	U	UG/KG
PARATHION	2	U	UG/KG
PARATHION, METHYL	2	U	UG/KG
PHORATE	2	U	UG/KG
TOXAPHENE	39.5	U	UG/KG

Sample Number: I1SS-7
Sample Date: 9/17/96
Laboratory ID: 9609298-07
QC Type: NORMAL
% Moisture: 66
Location: I1SS-7

	RESULT	QUAL	UNITS
2,4,5-T	3	U	UG/KG
	3	U	UG/KG
2,4,5-TP (SILVEX)	3	U	UG/KG
	3	U	UG/KG
2,4-D	21.4	J	UG/KG
	21.4	J	UG/KG
4,4'-DDD	2.5		UG/KG
	2.5		UG/KG
4,4'-DDE	3.2	J	UG/KG
	3.2	J	UG/KG
4,4'-DDT	7.8		UG/KG
	7.8		UG/KG
ALDRIN	1	U	UG/KG
	1	U	UG/KG
ALPHA-BHC	0.85	J	UG/KG
	0.85	J	UG/KG
AROCLOR-1016	6.2	U	UG/KG
	6.2	U	UG/KG
AROCLOR-1221	6.2	U	UG/KG
	6.2	U	UG/KG
AROCLOR-1232	6.2	U	UG/KG
	6.2	U	UG/KG
AROCLOR-1242	6.2	U	UG/KG
	6.2	U	UG/KG
AROCLOR-1248	6.2	U	UG/KG
	6.2	U	UG/KG
AROCLOR-1254	6.2	U	UG/KG
	6.2	U	UG/KG
AROCLOR-1260	38.6	J	UG/KG
	38.6	J	UG/KG
BETA-BHC	1	U	UG/KG
	1	U	UG/KG
CHLORDANE		U	UG/KG
	12.4	U	UG/K
DELTA-BHC	1	U	UG/K
	1	U	UG/K
DIELDRIN	3	J	UG/K
	3	J	UG/K
ENDOSULFAN I	2.3	J	UG/K
	2.3	J	UG/K
ENDOSULFAN II	2	U	UG/K
	2	U	UG/K
ENDOSULFAN SULFATE	2	U	UG/K
	2	U	UG/K
ENDRIN	2.8	J	UG/K
	2.8	J	UG/K
ENDRIN ALDEHYDE	2	U	UG/K
	2	U	UG/K
GAMMA-BHC (LINDANE)	1.7	J	UG/K
	1.7	J	UG/K
HEPTACHLOR	0.76	J	UG/K
	0.76	J	UG/K
HEPTACHLOR EPOXIDE	1.2		UG/K
	1.2		UG/K
METHOXYCHLOR	10	U	UG/K
	10	U	UG/K
PARATHION	2.5	U	UG/K
	2.5	U	UG/K
PARATHION, METHYL	2.5	U	UG/K
	2.5	U	UG/K
PHORATE	2.5	U	UG/K
	2.5	U	UG/K
TOXAPHENE	49.8	U	UG/K
	49.8	U	UG/K

INORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 22, 1997**
FROM:	**TERESA M. HUDSON**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA REVIEW – TAL METALS AND CYANIDE**
CTO 007 – KEY WEST, FLORIDA
SDG – 69358W

SAMPLES: 7/AQUEOUS/

FB03-091896	S5SW-3	S5SW-5	FB04-091896
RB03-091896	S5SW-4	S5DPSW	

Introduction

A data review was performed on the inorganic analytical data from CTO 007, NAS Key West, SDG No.69358W. Seven (7) aqueous samples were included for TAL metals and cyanide. One (1) field duplicate pair (S5SW-5/S5DPSW), two (2) field blanks (FB03-091896 and FB04-091896), and one (1) rinsate blank (RB03-091896 are included within this SDG.

amples were analyzed for Target Analyte List (TAL) metals and cyanide. The samples were collected by Brown & Root Environmental on September 18, 1996 and analyzed by General Engineering Laboratory under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- Calibration Verifications
- * Laboratory Blank Analyses
- Matrix Spike Results

* Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/preparation/field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level (aqueous)
aluminum	52.6 ug/L	263 ug/L
antimony	4.3 ug/L	21.5 ug/L
barium	17.9 ug/L	89.5 ug/L
beryllium	0.3 ug/L	1.5 ug/L
cadmium	0.4 ug/L	2 ug/L
calcium	45,000 ug/L	225,000 ug/L
copper[2]	2.3 ug/L	11.5 ug/L
cyanide	1.5 ug/L	7.5 ug/L
iron[1]	57.6 ug/L	288 ug/L
magnesium	5,980 ug/L	29,900 ug/L
manganese[2]	3.0ug/L	15.0 ug/L
mercury[2]	0.13 ug/L	0.65 ug/L
potassium[2]	14,000 ug/L	70,000 ug/L
sodium	37,400 ug/L	187,000 ug/L
zinc[1]	41.6 ug/L	208 ug/L

Samples affected: All.

Maximum concentration found in an aqueous preparation blank.

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for aluminum, antimony, barium, calcium, cyanide, iron, lead, magnesium, manganese, mercury, potassium, sodium, and zinc have been qualified as nondetected, "U." No action was taken for beryllium since the all results were nondetect.

Notes

It was noted that samples FB04-091896 was analyzed with a two fold dilution for all analytes. Calcium, magnesium, potassium, and sodium were analyzed at a 20 fold dilution for samples S5SW-3, S5SW-4, S5SW-5, and S5DPSW. Samples S5SW-3, S5SW-4, S5SW-5, and S5DPSW were analyzed at a two fold dilution for the remaining ICP elements.

It was noted that there was no preparation blank for cyanide.

It was noted that mercury exceeded the quality control limit for Contract Required Detection Limit (CRDL) Percent Recoveries (R%) for AA. However, no validation actions were taken for CRDL R%.

It was noted that pre-digest Matrix Spike (MS) Percent Recovery (R%) for antimony, cadmium, lead, selenium, and thallium were below the quality control limits. However, MS R% were not low enough to require qualification.

A comparison of field duplicate pairs S5SW-5 and S5DPSW can be found in Appendix C. However, no validation actions are required for field duplicate imprecision.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method blank.

Other Factors Affecting Data Quality: None.

No other problems were encountered in this case.

The data for these analyses were reviewed in accordance with the "National Functional Guidelines for Inorganic Review," February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Brown & Root Environmental
Teresa M. Hudson
Environmental Scientist/Data Validator

Julia J. Bradley for
Brown & Root Environmental
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation.

KEY WEST
SDG – 69358W

TABLE 1 - RECOMMENDATION SUMMARY

Aluminum	A[1]	Magnesium	A[1]
Antimony	A[1]	Manganese	A[1]
Arsenic		Mercury	A[1]
Barium	A[1]	Nickel	
Beryllium		Potassium	A[1]
Cadmium		Selenium	
Calcium	A[1]	Silver	
Chromium		Sodium	A[1]
Cobalt		Thallium	
Copper		Vanadium	
Iron	A[1]	Zinc	A[1]
Lead	A[1]	Cyanide	A[1]

If the field is left blank, the qualifier is A - Accept all data.

A[1] Accept data but qualify as nondetected, "U," as a result of laboratory blank contamination.

APPENDIX A
Qualified Analytical Results

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69358W

INORGANICS

Sample Number: FB03091896
Sample Date: 9/18/96
Laboratory ID: 9609358-01
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
Aluminum	17.5	U	UG/L
Antimony	2.9	U	UG/L
Arsenic	2	U	UG/L
Barium	1.6		UG/L
Beryllium	0.1	U	UG/L
Cadmium	0.2	U	UG/L
Calcium	170		UG/L
Chromium	1	U	UG/L
Cobalt	1	U	UG/L
Copper	2	U	UG/L
Cyanide, Total	1.4	U	UG/L
Iron	2	U	UG/L
Lead	1.5	U	UG/L
Magnesium	38.8	U	UG/L
Manganese	1	U	UG/L
Mercury	0.13		UG/L
Nickel	2	U	UG/L
Potassium	20	U	UG/L
Selenium	2	U	UG/L
Silver	1	U	UG/L
Sodium	290	U	UG/L
Thallium	2	U	UG/L
Vanadium	1	U	UG/L
Zinc	2.5	U	UG/L

Sample Number: FB04091896
Sample Date: 9/18/96
Laboratory ID: 9609358-08
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
Aluminum	52.6	U	UG/L
Antimony	4.3	U	UG/L
Arsenic	4	U	UG/L
Barium	17.9	U	UG/L
Beryllium	0.2	U	UG/L
Cadmium	0.4	U	UG/L
Calcium	45000	U	UG/L
Chromium	2	U	UG/L
Cobalt	2	U	UG/L
Copper	4	U	UG/L
Cyanide, Total	1.4	U	UG/L
Iron	57.6	U	UG/L
Lead	3	U	UG/L
Magnesium	5980	U	UG/L
Manganese	3	U	UG/L
Mercury	0.12	U	UG/L
Nickel	4	U	UG/L
Potassium	14000	U	UG/L
Selenium	4	U	UG/L
Silver	2	U	UG/L
Sodium	37400	U	UG/L
Thallium	4	U	UG/L
Vanadium	2	U	UG/L
Zinc	41.6	U	UG/L

Sample Number: RB03091896
Sample Date: 9/18/96
Laboratory ID: 9609358-02
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNI
Aluminum	14.7	U	UG
Antimony	2	U	UG
Arsenic	2	U	UG
Barium	0.62	U	UG
Beryllium	0.1	U	UG
Cadmium	0.2	U	UG
Calcium	59	U	UG
Chromium	1	U	UG
Cobalt	1	U	UG
Copper	2.3		UG
Cyanide, Total	1.4	U	UG
Iron	10	U	UG
Lead	1.5	U	UG
Magnesium	12.2	U	UG
Manganese	1	U	UG
Mercury	0.12		UG
Nickel	2	U	UG
Potassium	20	U	UG
Selenium	2	U	UG
Silver	1	U	UG
Sodium	205	U	UG
Thallium	2	U	UG
Vanadium	1	U	UG
Zinc	3.5	U	UG

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69358W

INORGANICS

Sample Number: S5DPSW
Sample Date: 9/18/96
Laboratory ID: 9609358-06
QC Type: NORMAL
% Moisture: 0
Location: S5DPSW

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	4	U	UG/L
BARIUM	7.6	U	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	321000	U	UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE, TOTAL	1.7	U	UG/L
IRON	12.7	U	UG/L
LEAD	3.6	U	UG/L
MAGNESIUM	981000		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.11	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	295000	U	UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	7170000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: S5SW3
Sample Date: 9/18/96
Laboratory ID: 9609358-03
QC Type: NORMAL
% Moisture: 0
Location: S5SW-3

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	4	U	UG/L
BARIUM	7.9	U	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	318000	U	UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE, TOTAL	2.4	U	UG/L
IRON	133	U	UG/L
LEAD	5.1		UG/L
MAGNESIUM	825000		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.14	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	283000	U	UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	6810000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: S5SW4
Sample Date: 9/18/96
Laboratory ID: 9609358-04
QC Type: NORMAL
% Moisture: 0
Location: S5SW-4

	RESULT	QUAL	UNIT
ALUMINUM	28	U	UG/L
ANTIMONY	4.6	U	UG/L
ARSENIC	4	U	UG/L
BARIUM	7.7	U	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	325000	U	UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE, TOTAL	1.4	U	UG/L
IRON	35.9	U	UG/L
LEAD	3.3	U	UG/L
MAGNESIUM	797000		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.12	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	298000	U	UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	7130000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69358W

INORGANICS

Sample Number: S5SW5
Sample Date: 9/18/96
Laboratory ID: 9609358-05
QC Type: NORMAL
% Moisture: 0
Location: S5SW-5

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	4	U	UG/L
BARIUM	7.6	U	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	364000	U	UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE, TOTAL	1.5	U	UG/L
IRON	8.4	U	UG/L
LEAD	3.8	U	UG/L
MAGNESIUM	992000		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.12	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	334000	U	UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	8040000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69358W

SEMIVOLATILES

Sample Number: FB03-091896
Sample Date: 9/18/96
Laboratory ID: 9609358-01
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYL PHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-NITROPHENOL	20	U	UG/L
4-NITROQUINOLINE 1-OXIDE	10	U	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A-,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(GHI)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL) ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	50	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	50	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZ	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG
HEXACHLOROCYCLOPENTADIENE	10	U	UG
HEXACHLOROETHANE	10	U	UG
HEXACHLOROPROPENE	10	U	UG
INDENO(1,2,3-C,D)PYRENE	10	U	UG
ISODRIN	10	U	UG
ISOPHORONE	10	U	UG
ISOSAFROLE	10	U	UG
KEPONE	10	U	UG
M-DINITROBENZENE	10	U	UG
M-NITROANILINE	10	U	UG
METHAPYRILENE	50	U	UG
METHYL METHACRYLATE	10	U	UG
METHYL METHANESULFONATE	10	U	UG
N-NITROSODI-N-BUTYLAMINE	10	U	UG
N-NITROSODIETHYLAMINE	10	U	UG
N-NITROSODIMETHYLAMINE	10	U	UG
N-NITROSODIPHENYLAMINE	10	U	UG
N-NITROSODIPROPYLAMINE	10	U	UG/
N-NITROSOMETHYLETHYLAMINE	10	U	UG/
N-NITROSOMORPHOLINE	10	U	UG/
N-NITROSOPIPERIDINE	10	U	UG/
N-NITROSOPYROLIDINE	10	U	UG/
NAPHTHALENE	10	U	UG/
NITROBENZENE	10	U	UG/
O-CRESOL	10	U	UG/
O-NITROANILINE	10	U	UG/
O-TOLUIDINE	10	U	UG/
P-CRESOL	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/
P-NITROANILINE	10	U	UG/
P-PHENYLENEDIAMINE	20	U	UG/
PENTACHLOROBENZENE	10	U	UG/
PENTACHLOROETHANE	10	U	UG/
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE		U	UG/L

ORGANIC DATA VALIDATION

INTERNAL CORRESPONDENCE

TO:	CHUCK BRYAN	DATE:	JANUARY 30, 1997
FROM:	EDWARD A. INABINETT	COPIES:	DV FILE

SUBJECT: ORGANIC DATA REVIEW - VOA/SVOA/PEST/PCB/HERB ORGANICS
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG 69358W

SAMPLES: 8/Water:

S5SW-3	FB03-091896
S5SW-4	RB03-090196
S5SW-5	TB05-091896
S5DPSW	FB04-091896

The sample set for the CTO 007 NAS Key West site, SDG 69358W, consists of four (4) water environmental samples and four (4) field quality control blanks. Samples were analyzed for Appendix IX volatile and semivolatile compounds, plus the samples were also analyzed for Target Compound List (TCL) pesticide/PCB and herbicide organic compounds. One field duplicate pair was included in this SDG(S5DPSW/S5SW-5).

The samples were collected by Brown and Root Environmental on September 9th and 18th, 1996 and analyzed by General Engineering Laboratories, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Methods 8240, 8270, 8080, and 8150 analytical and reporting protocols. The data were evaluated according to the following parameters:

- Holding times
- GC/MS Tuning
- * Initial and continuing calibrations
- * Laboratory and field blank analyses
- Compound Quantitation
- Field Duplicate Precision

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Volatiles

The inital and continuing calibration Relative Response Factors (RRFs) for chloroprene (2-chloro-1,3-butadiene) and isobutyl alcohol were less than 0.05. Failure to meet this quality control criteria indicates that the laboratory's instruments could not achieve satisfactory sensitivity for these compounds, and therefore, the associated positive and nondetected results for these compounds are severely compromised. Nondetected results were reported in all samples. These nondetects were considered to be unreliable and were rejected, "UR".

The laboratory method blank and field quality control blank analysis yielded the following contaminants at the maximum concentration indicated.

Compound	Maximum Concentration	Sample Found	Action Level
methylene chloride	13.20 µg/L	RB03-091896	132.00 µg/L
toluene	1.10 µg/L	RB03-091896	5.50 µg/L
1,1,2-trichloroethane†	0.23 µg/L	VBLK01	1.15 µg/L
bromoform	9.30 µg/L	FB04-091896	46.50 µg/L
4-methyl-2-pentanone	1.80 µg/L	TB05-091896	9.00 µg/L
1,1,2,2-tetrachloroethane†	0.62 µg/L	VBLK01	3.10 µg/L
methyl methacrylate	1.50 µg/L	VBLK01	7.50 µg/L
trans-1,4-dichloro-2-butene	1.30 µg/L	VBLK01	6.50 µg/L
bis(2-chloro-isopropyl)ether	5.80 µg/L	TB05-091896	29.00 µg/L
carbon tetrachloride†	0.31 µg/L	FB04-091896	1.55 µg/L
acetone	17.00 µg/L	TB05-091896	170.00 µg/L
chloroform†	1.40 µg/L	FB04-091896	7.00 µg/L
chlorodibromomethane†	2.90 µg/L	FB04-091896	14.50 µg/L
bromodichloromethane†	3.40 µg/L	FB04-091896	17.00 µg/L
dibromomethane	2.40 µg/L	FB04-091896	12.00 µg/L

The symbol (†) indicates that no action was taken for these compounds since no positive results were reported.

All samples were affected. Percent moisture, sample aliquot size, and dilution factors were considered prior to the application of the action level. Positive results for the above volitale compounds found below the detection limit have been deleted and replaced by the detection limit value, then qualified as undetected, "U". It should be noted that field quality control blanks are not qualified based on field quality control blank contamination.

No other problems were noted.

Semivolatiles

Continuing calibration data was not reported for several semivolitale compounds. No action was taken based on unavailable continuing calibration data these semivolatile compounds.

No other problems were noted.

Pesticide/PCBs

Initial calibration data was not available in the summary data but was found in the raw data. No action was taken.

No other problems were noted.

Herbicides

No problems were noted.

Additional Comments

Pesticide/PCB and herbicide fractions only contained field quality control blanks.

Executive Summary

Laboratory Performance: The laboratory method blank and field quality control blank analysis yielded many contaminants in the volatile fraction. The calibration RRFs for chloroprene (2-chloro-1,3-butadiene) and isobutyl alcohol were less than 0.05.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Edward A. Inabinett
Brown and Root Environmental

Edward A. Inabinett
Engineer/Data Validator

R. Mark Ray for
Brown and Root Environmental

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

NAS KEY WEST

SDG 69358W

TABLE 1 - RECOMMENDATION SUMMARY

Sample No.	VOA			BNA			PEST/PCB			HERB		
S5SW-3	$A^{1,2,5}$		R^1									
S5SW-4	$A^{1,2,5}$		R^1									
S5SW-5	$A^{1,5}$		R^1									
S5DPSW	$A^{1,2,5}$		R^1									
FB03-091896			R^1									
RB03-091896			R^1									
TB05-091896	$A^{3,4}$		R^1									
FB04-091896			R^1									

If the field is left blank, the qualifier is A - Accept all data.

A^1 - Accept data, but change positive results for methylene chloride to a revised detection limit and qualify as nondetected "U" as a result of field quality control blank contamination.

A^2 - Accept data, but change positive results for toluene to a revised detection limit and qualify as nondetected "U" as a result of field quality control blank contamination.

A^3 - Accept data, but change positive results for methyl methacrylate to a revised detection limit and qualify as nondetected "U" as a result of laboratory method blank contamination.

A^4 - Accept data, but change positive results for trans-1,4-dichloro-2-butene to a revised detection limit and qualify as nondetected "U" as a result of laboratory method blank contamination.

A^5 - Accept data, qualify as nondetected "U" as a result of field quality control blank contamination.

R^1 - Reject "UR" nondetected results for chloroprene (2-chloro-1,3-butadiene) and isobutyl alcohol as a result of initial and continuing calibration relative response factors less than 0.050.

ORGANIC DATA VALIDATION

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69358W

SEMIVOLATILES

PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEPP	10	U	UG/L
SYM-TRINITROBENZENE	50	U	UG/L
THIONAZIN	10	U	UG/L
TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L

Sample Number: FB04-091896
Sample Date: 9/18/96
Laboratory ID: 9609358-08
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYL PHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-NITROPHENOL	20	U	UG/l
4-NITROQUINOLINE 1-OXIDE	10	U	UG/l
5-NITRO-O-TOLUIDINE	10	U	UG/l
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/l
A-,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(GHI)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL) ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	50	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	50	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69358W

SEMIVOLATILES

HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-C,D)PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
M-DINITROBENZENE	10	U	UG/L
M-NITROANILINE	10	U	UG/L
METHAPYRILENE	50	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSODIPROPYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O-CRESOL	10	U	UG/L
O-NITROANILINE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-CRESOL	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-NITROANILINE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L

P

PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEPP	10	U	UG/L
SYM-TRINITROBENZENE	50	U	UG/L
THIONAZIN	10	U	UG/L
TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L

Sample Number: RB03-091896
Sample Date: 9/18/96
Laboratory ID: 9609358-02
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNIT
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/l
1,2,4-TRICHLOROBENZENE	10	U	UG/l
1,2-DICHLOROBENZENE	10	U	UG/l
1,3-DICHLOROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYL PHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69358W

SEMIVOLATILES

4-NITROPHENOL	20	U	UG/L
4-NITROQUINOLINE 1-OXIDE	10	U	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A-,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(GHI)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL) ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	50	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	50	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-C,D)PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
M-DINITROBENZENE	10	U	UG/L
M-NITROANILINE	10	U	UG/L
METHAPYRILENE	50	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSODIPROPYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O-CRESOL	10	U	UG/L
O-NITROANILINE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-CRESOL	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-NITROANILINE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG
SAFROLE	10	U	UG
SULFOTEPP	10	U	UG
SYM-TRINITROBENZENE	50	U	UG
THIONAZIN	10	U	UG
TRIETHYLPHOSPHOROTHIOATE	10	U	UG

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69358W

SEMIVOLATILES

Sample Number: S5DPSW
Sample Date: 9/18/96
Laboratory ID: 9609358-06
QC Type: NORMAL
% Moisture: 0
Location: S5DPSW

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	50	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-NITROPHENOL	20	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	U	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	50	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	50	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG
HEXACHLOROBUTADIENE	10	U	UG
HEXACHLOROCYCLOPENTADIENE	10	U	UG
HEXACHLOROETHANE	10	U	UG
HEXACHLOROPROPENE	10	U	UG
INDENO(1,2,3-CD)PYRENE	10	U	UG
ISODRIN	10	U	UG
ISOPHORONE	10	U	UG
ISOSAFROLE	10	U	UG
KEPONE	10	U	UG
M-DINITROBENZENE	10	U	UG
M-NITROANILINE	10	U	UG
METHAPYRILENE	50	U	UG
METHYL METHANESULFONATE	10	U	UG/
N-NITROSODI-N-BUTYLAMINE	10	U	UG/
N-NITROSODIETHYLAMINE	10	U	UG/
N-NITROSODIMETHYLAMINE	10	U	UG/
N-NITROSODIPHENYLAMINE	10	U	UG/
N-NITROSODIPROPYLAMINE	10	U	UG/
N-NITROSOMETHYLETHYLAMINE	10	U	UG/
N-NITROSOMORPHOLINE	10	U	UG/
N-NITROSOPIPERIDINE	10	U	UG/
N-NITROSOPYRROLIDINE	10	U	UG/
NAPHTHALENE	10	U	UG/
NITROBENZENE	10	U	UG/
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG/
O-CRESOL	10	U	UG/
O-NITROANILINE	10	U	UG/
O-TOLUIDINE	10	U	UG/
P-CRESOL	10	U	UG/
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/
P-NITROANILINE	10	U	UG/
P-PHENYLENEDIAMINE	20	U	UG/
PENTACHLOROBENZENE	10	U	UG/
PENTACHLOROETHANE	10	U	UG/
PENTACHLORONITROBENZENE	10	U	UG/
PENTACHLOROPHENOL	10	U	UG/
PHENACETIN	10	U	UG/
PHENANTHRENE	10	U	UG/
PHENOL	10	U	UG/

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69358W

SEMIVOLATILES

PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L

Sample Number: S5SW-3
Sample Date: 9/18/96
Laboratory ID: 9609358-03
QC Type: NORMAL
% Moisture: 0
Location: S5SW-3

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	50	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG
4-NITROPHENOL	20	U	UG
4-NITROQUINOLINE-1-OXIDE	10	U	UG
5-NITRO-O-TOLUIDINE	10	U	UG
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG
ACENAPHTHENE	10	U	UG
ACENAPHTHYLENE	10	U	UG
ACETOPHENONE	10	U	UG
ANILINE	10	U	UG
ANTHRACENE	10	U	UG
ARAMITE	10	U	UG
BENZO(A)ANTHRACENE	10	U	UG
BENZO(A)PYRENE	10	U	UG
BENZO(B)FLUORANTHENE	10	U	UG
BENZO(G,H,I)PERYLENE	10	U	UG
BENZO(K)FLUORANTHENE	10	U	UG
BENZYL ALCOHOL	10	U	UG
BIS(2-CHLOROETHOXY)METHANE	10	U	UG
BIS(2-CHLOROETHYL)ETHER	10	U	UG/
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/
BUTYL BENZYL PHTHALATE	10	U	UG/
CHLOROBENZILATE	50	U	UG/
CHRYSENE	10	U	UG/
DI-N-BUTYL PHTHALATE	10	U	UG/
DI-N-OCTYL PHTHALATE	10	U	UG/
DIALLATE	10	U	UG/
DIBENZO(A,H)ANTHRACENE	10	U	UG/
DIBENZOFURAN	10	U	UG/
DIETHYL PHTHALATE	10	U	UG/
DIMETHOATE	50	U	UG/
DIMETHYL PHTHALATE	10	U	UG/
DINOSEB	10	U	UG/
DIPHENYLAMINE	10	U	UG/
DISULFOTON	10	U	UG/
ETHYL METHACRYLATE	10	U	UG/
ETHYL METHANESULFONATE	10	U	UG/
FAMPHUR	10	U	UG/
FLUORANTHENE	10	U	UG/
FLUORENE	10	U	UG/

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

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SEMIVOLATILES

HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD)PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
M-DINITROBENZENE	10	U	UG/L
M-NITROANILINE	10	U	UG/L
METHAPYRILENE	50	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSODIPROPYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L
O-CRESOL	10	U	UG/L
O-NITROANILINE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-CRESOL	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-NITROANILINE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG/L

PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L

Sample Number: S5SW-4
Sample Date: 9/18/96
Laboratory ID: 9609358-04
QC Type: NORMAL
% Moisture: 0
Location: S5SW-4

	RESULT	QUAL	UNIT
1,2,4,5-TETRACHLOROBENZENE	10	U	UG
1,2,4-TRICHLOROBENZENE	10	U	UG/
1,2-DICHLOROBENZENE	10	U	UG/
1,3,5-TRINITROBENZENE	50	U	UG/
1,3-DICHLOROBENZENE	10	U	UG/
1,4-DICHLOROBENZENE	10	U	UG/
1,4-DIOXANE	10	U	UG/
1,4-NAPHTHOQUINONE	10	U	UG/
1-NAPHTHYLAMINE	10	U	UG/
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/
2,4,5-TRICHLOROPHENOL	10	U	UG/
2,4,6-TRICHLOROPHENOL	10	U	UG/
2,4-DICHLOROPHENOL	10	U	UG/
2,4-DIMETHYLPHENOL	10	U	UG/
2,4-DINITROPHENOL	20	U	UG/
2,4-DINITROTOLUENE	10	U	UG/
2,6-DICHLOROPHENOL	10	U	UG/
2,6-DINITROTOLUENE	10	U	UG/
2-ACETYLAMINOFLUORENE	10	U	UG/
2-CHLORONAPHTHALENE	10	U	UG/
2-CHLOROPHENOL	10	U	UG/
2-METHYL-4,6-DINITROPHENOL	10	U	UG/
2-METHYLNAPHTHALENE	10	U	UG/
2-NAPHTHYLAMINE	10	U	UG/
2-NITROPHENOL	10	U	UG/
2-PICOLINE	10	U	UG/
3,3'-DICHLOROBENZIDINE	50	U	UG/
3,3'-DIMETHYLBENZIDINE	50	U	UG/
3-METHYLCHOLANTHRENE	10	U	UG/
4-AMINOBIPHENYL	10	U	UG/
4-BROMOPHENYL PHENYL ETHER	10	U	UG/
4-CHLORO-3-METHYLPHENOL	10	U	UG/
4-CHLOROANILINE	10	U	UG/

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

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SEMIVOLATILES

4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-NITROPHENOL	20	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	U	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	50	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	50	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD)PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
M-DINITROBENZENE	10	U	UG/L
M-NITROANILINE	10	U	UG/L
METHAPYRILENE	50	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSODIPROPYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L
O-CRESOL	10	U	UG/L
O-NITROANILINE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-CRESOL	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-NITROANILINE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

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SEMIVOLATILES

Sample Number: S5SW-5
Sample Date: 9/18/96
Laboratory ID: 9609358-05
QC Type: NORMAL
% Moisture: 0
Location: S5SW-5

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	50	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-NITROPHENOL	20	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	U	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	50	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	50	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG
HEXACHLOROBUTADIENE	10	U	UG
HEXACHLOROCYCLOPENTADIENE	10	U	UG
HEXACHLOROETHANE	10	U	UG
HEXACHLOROPROPENE	10	U	UG
INDENO(1,2,3-CD)PYRENE	10	U	UG
ISODRIN	10	U	UG
ISOPHORONE	10	U	UG
ISOSAFROLE	10	U	UG
KEPONE	10	U	UG
M-DINITROBENZENE	10	U	UG
M-NITROANILINE	10	U	UG
METHAPYRILENE	50	U	UG
METHYL METHANESULFONATE	10	U	UG
N-NITROSODI-N-BUTYLAMINE	10	U	UG/
N-NITROSODIETHYLAMINE	10	U	UG/
N-NITROSODIMETHYLAMINE	10	U	UG/
N-NITROSODIPHENYLAMINE	10	U	UG/
N-NITROSODIPROPYLAMINE	10	U	UG/
N-NITROSOMETHYLETHYLAMINE	10	U	UG/
N-NITROSOMORPHOLINE	10	U	UG/
N-NITROSOPIPERIDINE	10	U	UG/
N-NITROSOPYRROLIDINE	10	U	UG/
NAPHTHALENE	10	U	UG/
NITROBENZENE	10	U	UG/
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG/
O-CRESOL	10	U	UG/
O-NITROANILINE	10	U	UG/
O-TOLUIDINE	10	U	UG/
P-CRESOL	10	U	UG/
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/
P-NITROANILINE	10	U	UG/
P-PHENYLENEDIAMINE	20	U	UG/
PENTACHLOROBENZENE	10	U	UG/
PENTACHLOROETHANE	10	U	UG/
PENTACHLORONITROBENZENE	10	U	UG/
PENTACHLOROPHENOL	10	U	UG/
PHENACETIN	10	U	UG/
PHENANTHRENE	10	U	UG/
PHENOL	10	U	UG/

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

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SEMIVOLATILES

PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69358W

VOLATILES

Sample Number: FB03091896
Sample Date: 9/18/96
Laboratory ID: 9609358-01
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHYLENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
1,2-TRANS-DICHLOROETHYLENE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	12.8		UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/L
BROMOFORM	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROPRENE	2	UR	UG/L
CIS-1,3-DICHLOROPROPYLENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLOROBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
ISOBUTYL ALCOHOL	20	UR	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL BROMIDE	2	U	UG/L
METHYL CHLORIDE	2	U	UG/L
METHYL IODIDE	5	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYLENE CHLORIDE	10		UG/L
PROPIONITRILE	20	U	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHYLENE	2	U	UG/L
TOLUENE	1	J	UG/L
TRANS-1,3-DICHLOROPROPYLENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHYLENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES (TOTAL)	4	U	UG/L

Sample Number: FB04091896
Sample Date: 9/18/96
Laboratory ID: 9609358-08
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNIT
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHYLENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
1,2-TRANS-DICHLOROETHYLENE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	10	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/L
BROMOFORM	9.3		UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	0.31	J	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2.9		UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	1.4	J	UG/L
CHLOROPRENE	2	UR	UG/L
CIS-1,3-DICHLOROPROPYLENE	2	U	UG/L
DIBROMOMETHANE	2.4		UG/L
DICHLOROBROMOMETHANE	3.4		UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

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VOLATILES

DICHLORODIFLUOROMETHANE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
ISOBUTYL ALCOHOL	20	UR	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL BROMIDE	2	U	UG/L
METHYL CHLORIDE	2	U	UG/L
METHYL IODIDE	5	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYLENE CHLORIDE	12		UG/L
PROPIONITRILE	20	U	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHYLENE	2	U	UG/L
TOLUENE	0.37	J	UG/L
TRANS-1,3-DICHLOROPROPYLENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHYLENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES (TOTAL)	4	U	UG/L

Sample Number: RB03091896
Sample Date: 9/18/96
Laboratory ID: 9609358-02
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHYLENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
1,2-TRANS-DICHLOROETHYLENE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	10	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/L
BROMOFORM	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROPRENE	2	UR	UG/L
CIS-1,3-DICHLOROPROPYLENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLOROBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
ISOBUTYL ALCOHOL	20	UR	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL BROMIDE	2	U	UG/L
METHYL CHLORIDE	2	U	UG/L
METHYL IODIDE	5	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYLENE CHLORIDE	13		UG/L
PROPIONITRILE	20	U	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHYLENE	2	U	UG/L
TOLUENE	1	J	UG/L
TRANS-1,3-DICHLOROPROPYLENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHYLENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES (TOTAL)	4	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69358W

VOLATILES

Sample Number: S4SW3
Sample Date: 9/15/96
Laboratory ID: 9609285-12
QC Type: NORMAL
% Moisture: 0
Location: S4SW-3

	RESULT	QUAL	UNITS
METHYL BROMIDE	2	U	UG/L
METHYL CHLORIDE	2	U	UG/L
METHYL IODIDE	5	U	UG/L

Sample Number: S5DPSW
Sample Date: 9/18/96
Laboratory ID: 9609358-06
QC Type: NORMAL
% Moisture: 0
Location: S5DPSW

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	22	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/L
BROMOFORM	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROPRENE	2	UR	UG/L
CIS-1,3-DICHLOROPROPENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLOROBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	2	U	UG/L
ETHYLBENZENE	2	U	UG/
ISOBUTYL ALCOHOL	20	UR	UG/
METHACRYLONITRILE	10	U	UG/
METHYL BROMIDE	2	U	UG/
METHYL CHLORIDE	2	U	UG/
METHYL IODIDE	5	U	UG/
METHYL METHACRYLATE	10	U	UG/
METHYLENE CHLORIDE	4.7	U	UG/
PROPIONITRILE	20	U	UG/
STYRENE	2	U	UG/
TETRACHLOROETHENE	2	U	UG/
TOLUENE	2	U	UG/
TRANS-1,2-DICHLOROETHENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/
VINYL CHLORIDE	2	U	UG/L
XYLENES (TOTAL)	4	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69358W

VOLATILES

Sample Number: S5SW3
Sample Date: 9/18/96
Laboratory ID: 9609358-03
QC Type: NORMAL
% Moisture: 0
Location: S5SW-3

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	37	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/L
BROMOFORM	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROPRENE	2	UR	UG/L
CIS-1,3-DICHLOROPROPENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLOROBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
ISOBUTYL ALCOHOL	20	UR	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL BROMIDE	2	U	UG/L
METHYL CHLORIDE	5	U	UG/L
METHYL IODIDE	5	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYLENE CHLORIDE	5	U	UG/L
PROPIONITRILE	20	U	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHENE	2	U	UG/L
TOLUENE	2	U	UG/L
TRANS-1,2-DICHLOROETHENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES (TOTAL)	4	U	UG/L

Sample Number: S5SW4
Sample Date: 9/18/96
Laboratory ID: 9609358-04
QC Type: NORMAL
% Moisture: 0
Location: S5SW-4

	RESULT	QUAL	UNI
1,1,1,2-TETRACHLOROETHANE	2	U	UG
1,1,1-TRICHLOROETHANE	2	U	UG
1,1,2,2-TETRACHLOROETHANE	2	U	UG
1,1,2-TRICHLOROETHANE	2	U	UG
1,1-DICHLOROETHANE	2	U	UG
1,1-DICHLOROETHENE	2	U	UG
1,2,3-TRICHLOROPROPANE	2	U	UG
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG
1,2-DIBROMOETHANE	2	U	UG
1,2-DICHLOROETHANE	2	U	UG
1,2-DICHLOROPROPANE	2	U	UG
2-BUTANONE	5	U	UG
2-HEXANONE	5	U	UG
4-METHYL-2-PENTANONE	5	U	UG/
ACETONE	37	U	UG/
ACETONITRILE	10	U	UG/
ACROLEIN	20	U	UG/
ACRYLONITRILE	20	U	UG/
ALLYL CHLORIDE	10	U	UG/
BENZENE	2	U	UG/
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/
BROMOFORM	2	U	UG/
CARBON DISULFIDE	5	U	UG/
CARBON TETRACHLORIDE	2	U	UG/
CHLOROBENZENE	2	U	UG/
CHLORODIBROMOMETHANE	2	U	UG/
CHLOROETHANE	2	U	UG/
CHLOROFORM	2	U	UG/
CHLOROPRENE	2	UR	UG/
CIS-1,3-DICHLOROPROPENE	2	U	UG/
DIBROMOMETHANE	2	U	UG/
DICHLOROBROMOMETHANE	2	U	UG/
DICHLORODIFLUOROMETHANE	2	U	UG/

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69358W

VOLATILES

ETHYLBENZENE	2	U	UG/L
ISOBUTYL ALCOHOL	20	UR	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL BROMIDE	2	U	UG/L
METHYL CHLORIDE	2	U	UG/L
METHYL IODIDE	5	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYLENE CHLORIDE	5	U	UG/L
PROPIONITRILE	20	U	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHENE	2	U	UG/L
TOLUENE	2	U	UG/L
TRANS-1,2-DICHLOROETHENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES (TOTAL)	4	U	UG/L

Sample Number: S5SW5
Sample Date: 9/18/96
Laboratory ID: 9609358-05
QC Type: NORMAL
% Moisture: 0
Location: S5SW-5

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	17	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/L
BROMOFORM	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROPRENE	2	UR	UG/L
CIS-1,3-DICHLOROPROPENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLOROBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	2	U	UG/L

ETHYLBENZENE	2	U	UG
ISOBUTYL ALCOHOL	20	UR	UG
METHACRYLONITRILE	10	U	UG
METHYL BROMIDE	2	U	UG
METHYL CHLORIDE	2	U	UG
METHYL IODIDE	5	U	UG
METHYL METHACRYLATE	10	U	UG
METHYLENE CHLORIDE	5	U	UG
PROPIONITRILE	20	U	UG
STYRENE	2	U	UG
TETRACHLOROETHENE	2	U	UG
TOLUENE	2	U	UG
TRANS-1,2-DICHLOROETHENE	2	U	UG
TRANS-1,3-DICHLOROPROPENE	2	U	UG
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG
TRICHLOROETHENE	2	U	UG
TRICHLOROFLUOROMETHANE	2	U	UG
VINYL ACETATE	5	U	UG
VINYL CHLORIDE	2	U	UG
XYLENES (TOTAL)	4	U	UG

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69358W

VOLATILES

Sample Number: TB05091896
Sample Date: 9/9/96
Laboratory ID: 9609358-07
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHYLENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
1,2-TRANS-DICHLOROETHYLENE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	2	J	UG/L
ACETONE	17		UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	6	J	UG/L
BROMOFORM	0.27	J	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROPRENE	2	UR	UG/L
CIS-1,3-DICHLOROPROPYLENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLOROBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
ISOBUTYL ALCOHOL	20	UR	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL BROMIDE	2	U	UG/L
METHYL CHLORIDE	2	U	UG/L
METHYL IODIDE	5	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYLENE CHLORIDE	6		UG/L
PROPIONITRILE	20	U	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHYLENE	2	U	UG/L
TOLUENE	1	J	UG/L
TRANS-1,3-DICHLOROPROPYLENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHYLENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES (TOTAL)	4	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69358W

PESTICIDES/PCBs

Sample Number: FB03-091896
Sample Date: 9/18/96
Laboratory ID: 9609358-01
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
2,4,5-T	0.1	U	UG/L
2,4,5-TP(Silvex)	0.1	U	UG/L
2,4-D	0.1	U	UG/L
4,4'-DDD	0.04	U	UG/L
4,4'-DDE	0.04	U	UG/L
4,4'-DDT	0.04	U	UG/L
ALDRIN	0.02	U	UG/L
ALPHA-BHC	0.02	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.25	U	UG/L
DELTA-BHC	0.02	U	UG/L
DIELDRIN	0.04	U	UG/L
ENDOSULFAN I	0.02	U	UG/L
ENDOSULFAN II	0.04	U	UG/L
ENDOSULFAN SULFATE	0.04	U	UG/L
ENDRIN	0.04	U	UG/L
ENDRIN ALDEHYDE	0.04	U	UG/L
GAMMA-BHC	0.02	U	UG/L
HEPTACHLOR	0.02	U	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.05	U	UG/L
PARATHION, METHYL	0.05	U	UG/L
PCB-1016	0.12	U	UG/L
PCB-1221	0.12	U	UG/L
PCB-1232	0.12	U	UG/L
PCB-1242	0.12	U	UG/L
PCB-1248	0.12	U	UG/L
PCB-1254	0.12	U	UG/L
PCB-1260	0.12	U	UG/L
PHORATE	0.05	U	UG/L
TOXAPHENE	1	U	UG/L

Sample Number: FB04-091896
Sample Date: 9/18/96
Laboratory ID: 9609358-08
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
2,4,5-T	0.1	U	UG/L
2,4,5-TP(Silvex)	0.1	U	UG/L
2,4-D	0.1	U	UG/L
4,4'-DDD	0.04	U	UG/L
4,4'-DDE	0.04	U	UG/L
4,4'-DDT	0.04	U	UG/L
ALDRIN	0.02	U	UG/L
ALPHA-BHC	0.02	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.25	U	UG/L
DELTA-BHC	0.02	U	UG/L
DIELDRIN	0.04	U	UG/L
ENDOSULFAN I	0.02	U	UG/L
ENDOSULFAN II	0.04	U	UG/L
ENDOSULFAN SULFATE	0.04	U	UG/L
ENDRIN	0.04	U	UG/L
ENDRIN ALDEHYDE	0.04	U	UG/L
GAMMA-BHC	0.02	U	UG/L
HEPTACHLOR	0.02	U	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.05	U	UG/L
PARATHION, METHYL	0.05	U	UG/L
PCB-1016	0.12	U	UG/L
PCB-1221	0.12	U	UG/L
PCB-1232	0.12	U	UG/L
PCB-1242	0.12	U	UG/L
PCB-1248	0.12	U	UG/L
PCB-1254	0.12	U	UG/L
PCB-1260	0.12	U	UG/L
PHORATE	0.05	U	UG/L
TOXAPHENE	1	U	UG/L

Sample Number: RB03-091896
Sample Date: 9/18/96
Laboratory ID: 9609358-02
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNIT
2,4,5-T	0.1	U	UG/L
2,4,5-TP(Silvex)	0.1	U	UG/L
2,4-D	0.1	U	UG/L
4,4'-DDD	0.04	U	UG/L
4,4'-DDE	0.04	U	UG/L
4,4'-DDT	0.04	U	UG/L
ALDRIN	0.02	U	UG/L
ALPHA-BHC	0.02	U	UG/L
BETA-BHC	0.02	U	UG/L
CHLORDANE	0.25	U	UG/L
DELTA-BHC	0.02	U	UG/L
DIELDRIN	0.04	U	UG/L
ENDOSULFAN I	0.02	U	UG/L
ENDOSULFAN II	0.04	U	UG/L
ENDOSULFAN SULFATE	0.04	U	UG/L
ENDRIN	0.04	U	UG/L
ENDRIN ALDEHYDE	0.04	U	UG/L
GAMMA-BHC	0.02	U	UG/L
HEPTACHLOR	0.02	U	UG/L
HEPTACHLOR EPOXIDE	0.02	U	UG/L
METHOXYCHLOR	0.2	U	UG/L
PARATHION	0.05	U	UG/L
PARATHION, METHYL	0.05	U	UG/L
PCB-1016	0.12	U	UG/L
PCB-1221	0.12	U	UG/L
PCB-1232	0.12	U	UG/L
PCB-1242	0.12	U	UG/L
PCB-1248	0.12	U	UG/L
PCB-1254	0.12	U	UG/L
PCB-1260	0.12	U	UG/L
PHORATE	0.05	U	UG/L
TOXAPHENE	1	U	UG/L

INORGANIC DATA VALIDATION

Brown & Root Environmental **INTERNAL CORRESPONDENCE**

TO:	**C. BRYAN**	**DATE:**	**JANUARY 23, 1997**
FROM:	**MIGNON J. CLARKE**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION – TAL METALS AND CYANIDE**
CTO 007 – KEY WEST, FLORIDA
SDG – 69579W

SAMPLES: 18/Aqueous/

FB05-092796	13MW-6	S4MW-4
13MW-5	RB04-092896	S5SW-6
B7SW-01	RB05-092896	S4MW-2
13MW-7	S4MW-5	S4MW-3
13MW-4	S4MW-6	S4DPGW
13DPGW	S4MW-7	RB06-092996

Overview

The sample set for CTO 007, Key West, SDG 69579W, consists of fourteen (14) aqueous environmental samples, one (1) field blank sample (FB05-092796) and three (3) rinsate blanks (RB04-092896, RB05-092896, and RB06-092896). Two (2) field duplicate pairs (S4MW-3/S4DPGW and I3MW-4/I3DPGW) are included within this SDG.

All samples were analyzed for Target Analyte List (TAL) metals and cyanide except samples I3MW5, I3MW7, I3MW4, I3DPGW, and I3MW6 were not analyzed for cyanide. The samples were collected by Brown & Root Environmental on September 27, 28, and 29, 1996, and analyzed by General Engineering Laboratory under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- * Calibration Verifications
- * Laboratory Blank Analyses
- * ICP Interference Check Sample Results
- * Matrix Spike Results
- Laboratory Duplicate Results
- Laboratory Control Sample Results
- Detection Limits
- Field Duplicate Results

* Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the validation recommendations which were based on the following information:

Laboratory Blank Analysis

The following contaminants were detected in the laboratory method/ preparation/ field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration		Action Level (Aqueous)	
Aluminum [1]	63.4	ug/L	317	ug/L
Arsenic	2.0	ug/L	10.0	ug/L
Barium [1]	2.6	ug/L	13	ug/L
Beryllium [1]	0.48	ug/L	2.4	ug/L
Cadmium [1]	0.61	ug/L	3.05	ug/L
Calcium [1]	177	ug/L	885	ug/L
Chromium [1]	2.7	ug/L	13.5	ug/L
Copper [1]	8.8	ug/L	44	ug/L
Iron [1]	120	ug/L	600	ug/L
Magnesium [2]	12.4	ug/L	62	ug/L
Manganese [1]	2.1	ug/L	10.5	ug/L
Mercury [2]	0.139	ug/L	0.695	ug/L
Sodium	300.3	ug/L	1,501.5	ug/L
Thallium [1]	4.4	ug/L	22	ug/L
Zinc [1]	4.7	ug/L	23.5	ug/L

Samples affected: All

[1] Maximum concentration found in a field quality control blank.

[2] Maximum concentration found in an aqueous preparation blank.

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for aluminum, arsenic, barium, chromium, copper, iron, manganese, mercury, sodium, and thallium have been qualified as nondetected "U." No action was taken for the remaining analytes since either the results were greater than the action level or were nondetects. It should be noted that field quality control samples are not used to qualify for field quality control blank contamination.

ICP Interference Check Sample Results

The interfering analyte magnesium was present in S4MW2, S4MW4, S5SW6, and B7SW01 at concentrations which were comparable to the levels of magnesium in the Interference Check Sample (ICS) solution. Several analytes namely antimony, barium, cadmium, lead, manganese, potassium, selenium, sodium, and zinc were present in the ICS solution at concentrations which exceeded the Instrument Detection Limit (IDL). Interference affects exist for antimony, cadmium, lead, selenium, and zinc in samples S4MW2, S4MW4, B7SW01 and S5SW6. Samples S5SW6, S4MW4, and B7SW01 also had interference affects for manganese. Nondetects reported for these analytes in those samples were qualified as estimated, "UJ." No validation actions were warranted for the positive results reported for barium in these four environmental samples and manganese in sample S4MW2 as all results were qualified as blank contamination.

In addition, the interfering analyte calcium was present in B7SW01, S5SW6, and S4MW4 at concentrations comparable to the level in the Interference Check Sample (ICS) solution. Several analytes, namely antimony, barium, cadmium, lead, manganese, potassium, selenium, sodium, and zinc were present in the ICS solution at concentrations which exceeded the Instrument Detection Limit (IDL). Interference affects exist for antimony, cadmium, lead, manganese, selenium, and zinc in the affected samples. Nondetects reported for these analytes were qualified as estimated, "UJ." No validation actions were warranted for the positive results reported for barium as all results were qualified as blank contamination.

Matrix Spike Results

The Matrix Spike (MS) Percent Recovery (%R) antimony and for selenium were below the quality control limit. Positive results and nondetects reported for antimony and selenium were qualified as estimated, "J" and "UJ," respectively.

Notes

It was noted that all samples were diluted twofold. For calcium, magnesium, potassium, and sodium analyses samples B7SW-01 and S4MW-06 were diluted tenfold and samples I3MW-7, I3MW-4, I3DPGW, I3MW-6, S4MW-5, S4MW-4, S5SW-6, and S4MW-2 were diluted twentyfold. It was noted that the Case Narrative incorrectly listed sodium twice in this dilution list and omitted calcium.

It was noted that cyanide was not analyzed in samples I3MW5, I3MW7, I3MW4, I3DPGW, and I3MW6.

A comparison of field duplicate pairs I3MW4/I3DPGW and S4MW3/S4DPGW can be found in Appendix C. However, no validation actions are required for field duplicate pairs.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method blank.

Other Factors Affecting Data Quality: Several analytes were present in the field quality control blanks. The interfering analytes calcium and magnesium were found in some samples. The MS %Rs for antimony and selenium were below the quality control limits.

The data for these analysis were validated with reference to the "National Functional Guidelines for inorganic Data Validation," as amended for use within USEPA Region I; and the NEESA document entitled "Sampling and Chemical Analysis Quality Assurance requirements for the Navy Installation Restoration Program" (NEESA 20.2-047B; 6/88).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Julia J Bradly
Brown & Root Environmental
for Mignon J. Clarke
Environmental Scientist/Data Validator

Teresa M Hudson
Brown & Root Environmental
for Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

KEY WEST
SDG 69579W

TABLE 1 - RECOMMENDATION SUMMARY

Aluminum	A[1]			Magnesium			
Antimony		J[1]	J[2]	Manganese	A[1]	J[1]	
Arsenic				Mercury	A[1]		
Barium	A[1]	J[1]		Nickel			
Beryllium	A[1]			Potassium		J[1]	
Cadmium		J[1]		Selenium		J[1]	J[2]
Calcium				Silver			
Chromium				Sodium		J[1]	
Cobalt				Thallium			
Copper				Vanadium	A[1]		
Iron	A[1]			Zinc		J[1]	
Lead		J[1]		Cyanide			

If the field is left blank, the qualifier is A – Accept all data.

A[1] Accept data but qualify as nondetected, "U", as a result of laboratory blank contamination.

J[1] Accept data but qualify positive results and nondetects as estimated, "J" and "UJ" , as a result of ICP interference.

J[2] Accept data but qualify positive results and nondetects as estimated, "J" and "UJ", as a result of low MS%Rs.

Appendix A - Qualified Analytical Results

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69579W

INORGANICS

Sample Number: B7SW01
Sample Date: 9/27/96
Laboratory ID: 9609579-03
QC Type: NORMAL
% Moisture: 0
Location: B7SW-1

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	6.8	U	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	UJ	UG/L
CALCIUM	414000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	14.7	U	UG/L
LEAD	3	UJ	UG/L
MAGNESIUM	1260000		UG/L
MANGANESE	2	UJ	UG/L
MERCURY	4.2		UG/L
NICKEL	4	U	UG/L
POTASSIUM	422000		UG/L
SELENIUM	4	UJ	UG/L
SILVER	2	U	UG/L
SODIUM	8860000		UG/L
THALLIUM	6.6	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	UJ	UG/L

Sample Number: FB05092796
Sample Date: 9/27/96
Laboratory ID: 9609579-01
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
ALUMINUM	63.4		UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	2.6		UG/L
BERYLLIUM	0.48		UG/L
CADMIUM	0.61		UG/L
CAICIUM	95.9		UG/L
CHROMIUM	2.7		UG/L
COBALT	2	U	UG/L
COPPER	8.8		UG/L
CYANIDE	1.4	U	UG/L
IRON	120		UG/L
LEAD	6.8		UG/L
MAGNESIUM	12	U	UG/L
MANGANESE	2.1		UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	40	U	UG/L
SELENIUM	4	UJ	UG/L
SILVER	2	U	UG/L
SODIUM	61.4	U	UG/L
THALLIUM	4.4		UG/L
VANADIUM	2	U	UG/L
ZINC	4.3		UG/L

Sample Number: I3DPGW
Sample Date: 9/28/96
Laboratory ID: 9609579-07
QC Type: NORMAL
% Moisture: 0
Location: I3DPGW

	RESULT	QUAL	UNIT
ALUMINUM	39.5	U	UG/
ANTIMONY	4	UJ	UG/
ARSENIC	4	U	UG/
BARIUM	9.8	U	UG/
BERYLLIUM	0.2	U	UG/
CADMIUM	0.4	U	UG/
CALCIUM	130000		UG/
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
IRON	44.4	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	95800		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	25600		UG/L
SELENIUM	4	UJ	UG/L
SILVER	2	U	UG/L
SODIUM	600000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	3.4		UG/L
ZINC	2	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69579W

INORGANICS

Sample Number: I3MW4
Sample Date: 9/28/96
Laboratory ID: 9609579-06
QC Type: NORMAL
% Moisture: 0
Location: I3MW-4

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	9.2	U	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	116000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
IRON	34.9	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	84300		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	24600		UG/L
SELENIUM	4	UJ	UG/L
SILVER	2	U	UG/L
SODIUM	533000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2.9		UG/L
ZINC	2	U	UG/L

Sample Number: I3MW5
Sample Date: 9/27/96
Laboratory ID: 9609579-02
QC Type: NORMAL
% Moisture: 0
Location: I3MW-5

	RESULT	QUAL	UNITS
ALUMINUM	38.1	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	7.5	U	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	94100		UG/L
CHROMIUM	2.1	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
IRON	27.3	U	UG/L
LEAD	3.7		UG/L
MAGNESIUM	13600		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.43	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	6180		UG/L
SELENIUM	4	UJ	UG/L
SILVER	2	U	UG/L
SODIUM	68400		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2.4		UG/L
ZINC	2	U	UG/L

Sample Number: I3MW6
Sample Date:
Laboratory ID: 9609579-08
QC Type:
% Moisture:
Location:

	RESULT	QUAL	UNIT
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	11.1	U	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	127000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
IRON	141	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	137000		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	38300		UG/L
SELENIUM	4	UJ	UG/L
SILVER	2	U	UG/L
SODIUM	844000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	3.8		UG/L
ZINC	2	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69579W

INORGANICS

Sample Number: I3MW7
Sample Date: 9/27/96
Laboratory ID: 9609579-04
QC Type: NORMAL
% Moisture: 0
Location: I3MW-7

	RESULT	QUAL	UNITS
ALUMINUM	31.3	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	6	U	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	110000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	26.8	U	UG/L
IRON	41.5	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	87100		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.3	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	25800		UG/L
SELENIUM	4	UJ	UG/L
SILVER	2	U	UG/L
SODIUM	503000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	13.9		UG/L
ZINC	110		UG/L

Sample Number: RB04092896
Sample Date: 9/28/96
Laboratory ID: 9609579-09
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	0.2	U	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	36.5		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	24.2		UG/L
LEAD	3	U	UG/L
MAGNESIUM	12	U	UG/L
MANGANESE	2	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	40	U	UG/L
SELENIUM	4	UJ	UG/L
SILVER	2	U	UG/L
SODIUM	80.6	U	UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: RB05092896
Sample Date: 9/28/96
Laboratory ID: 9609579-10
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNI
ALUMINUM	28	U	UG
ANTIMONY	4	UJ	UG
ARSENIC	4	U	UG
BARIUM	0.2	U	UG
BERYLLIUM	0.2	U	UG
CADMIUM	0.4	U	UG
CALCIUM	34.5		UG
CHROMIUM	2	U	UG
COBALT	2	U	UG
COPPER	4	U	UG
CYANIDE	1.4	U	UG
IRON	25		UG
LEAD	3	U	UG
MAGNESIUM	12	U	UG
MANGANESE	2	U	UG
MERCURY	0.11	U	UG
NICKEL	4	U	UG
POTASSIUM	40	U	UG
SELENIUM	4	UJ	UG
SILVER	2	U	UG
SODIUM	85.1	U	UG
THALLIUM	4	U	UG
VANADIUM	2	U	UG
ZINC	2.2		UG

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69579W

INORGANICS

Sample Number: RB06092996
Sample Date: 9/29/96
Laboratory ID: 9609579-19
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	0.38		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	177		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	50		UG/L
LEAD	3	U	UG/L
MAGNESIUM	12.4		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.13	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	40	U	UG/L
SELENIUM	4	UJ	UG/L
SILVER	2	U	UG/L
SODIUM	211	U	UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	4.7		UG/L

Sample Number: S4DPGW
Sample Date: 9/29/96
Laboratory ID: 9609579-18
QC Type: NORMAL
% Moisture: 0
Location: S4DPGW

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	2.4	U	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	108000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	127	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	16800		UG/L
MANGANESE	2	U	UG/L
MERCURY	1.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	1270		UG/L
SELENIUM	4	UJ	UG/L
SILVER	2	U	UG/L
SODIUM	8640		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: S4MW2
Sample Date: 9/29/96
Laboratory ID: 9609579-16
QC Type: NORMAL
% Moisture: 0
Location: S4MW-2

	RESULT	QUAL	UNI
ALUMINUM	28	U	UG
ANTIMONY	4	UJ	UG
ARSENIC	4	U	UG
BARIUM	5	U	UG
BERYLLIUM	0.2	U	UG
CADMIUM	0.4	UJ	UG
CALCIUM	187000		UG
CHROMIUM	2	U	UG
COBALT	2	U	UG
COPPER	4.1	U	UG
CYANIDE	1.4	U	UG
IRON	29.3	U	UG
LEAD	3	UJ	UG
MAGNESIUM	277000		UG
MANGANESE	9.9	U	UG
MERCURY	0.44	U	UG
NICKEL	4	U	UG
POTASSIUM	96900		UG
SELENIUM	4	UJ	UG
SILVER	2	U	UG
SODIUM	2040000		UG
THALLIUM	4.8	U	UG
VANADIUM	2	U	UG
ZINC	2	UJ	UG

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69579W

INORGANICS

Sample Number: S4MW3
Sample Date: 9/29/96
Laboratory ID: 9609579-17
QC Type: NORMAL
% Moisture: 0
Location: S4MW-3

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	2.5	U	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	108000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	120	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	17000		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.44	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	1300		UG/L
SELENIUM	4	UJ	UG/L
SILVER	2	U	UG/L
SODIUM	9290		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: S4MW4
Sample Date:
Laboratory ID: 9609579-14
QC Type:
% Moisture:
Location:

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	13.7	U	UG/L
BARIUM	11	U	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	UJ	UG/L
CALCIUM	1910000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	229	U	UG/L
LEAD	3	UJ	UG/L
MAGNESIUM	374000		UG/L
MANGANESE	11.9	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	132000		UG/L
SELENIUM	4	UJ	UG/L
SILVER	2	U	UG/L
SODIUM	2930000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	UJ	UG/L

Sample Number: S4MW5
Sample Date: 9/28/96
Laboratory ID: 9609579-11
QC Type: NORMAL
% Moisture: 0
Location: S4MW-5

	RESULT	QUAL	UN
ALUMINUM	28	U	UG
ANTIMONY	4	UJ	UG
ARSENIC	4	U	UG
BARIUM	7.5	U	UG
BERYLLIUM	0.2	U	UG
CADMIUM	0.4	U	UG
CALCIUM	153000		UG
CHROMIUM	2	U	UG
COBALT	2	U	UG
COPPER	4	U	UG
CYANIDE	1.4	U	UG
IRON	99.1	U	UG
LEAD	3	U	UG
MAGNESIUM	244000		UG
MANGANESE	2	U	UG
MERCURY	0.1	U	UG
NICKEL	4	U	UG
POTASSIUM	73200		UG
SELENIUM	4	UJ	UG
SILVER	2	U	UG
SODIUM	1630000		UG
THALLIUM	4	U	UG
VANADIUM	2	U	UG
ZINC	2	U	UG

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INORGANICS

Sample Number: S4MW6
Sample Date: 9/28/96
Laboratory ID: 9609579-12
QC Type: NORMAL
% Moisture: 0
Location: S4MW-6

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	3.6	U	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	129000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	142	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	159000		UG/L
MANGANESE	2	UJ	UG/L
MERCURY	0.12	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	47600		UG/L
SELENIUM	4	UJ	UG/L
SILVER	2	U	UG/L
SODIUM	1040000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	UJ	UG/L

Sample Number: S4MW7
Sample Date: 9/28/96
Laboratory ID: 9609579-13
QC Type: NORMAL
% Moisture: 0
Location: S4MW-7

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	UJ	UG/L
ARSENIC	4	U	UG/L
BARIUM	3.4	U	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	58200		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	43.1	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	24300		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	2370		UG/L
SELENIUM	4	UJ	UG/L
SILVER	2	U	UG/L
SODIUM	15200		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: S5SW-6
Sample Date:
Laboratory ID: 9609579-15
QC Type:
% Moisture:
Location:

	RESULT	QUAL	UN
ALUMINUM	28	U	UC
ANTIMONY	4	UJ	UG
ARSENIC	4	U	UG
BARIUM	7.3	U	UG
BERYLLIUM	0.2	U	UG
CADMIUM	0.4	UJ	UG
CALCIUM	398000		UG
CHROMIUM	2	U	UG
COBALT	2	U	UG
COPPER	4	U	UG
CYANIDE	1.4	U	UG
IRON	4	U	UG
LEAD	3	UJ	UG
MAGNESIUM	1180000		UG
MANGANESE	2	UJ	UG
MERCURY	0.1	U	UG
NICKEL	4	U	UG
POTASSIUM	397000		UG
SELENIUM	4	UJ	UG
SILVER	2	U	UG
SODIUM	9220000		UG
THALLIUM	4.6	U	UG
VANADIUM	2	U	UG
ZINC	2	UJ	UG

ORGANIC DATA VALIDATION

TO:	**CHUCK BRYAN**	**DATE:**	**JANUARY 30, 1997**
FROM	**R. MARTY RAY**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA REVIEW - VOA/SVOA/PEST/PCB/HERB ORGANICS**
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG 69579W

SAMPLES: 20/Waters:

FB05-092796	I3MW-5	B7SW-01	I3MW-7
TB06-092796	I3MW-4	I3DPGW	I3MW-6
RB04-092896	RB05-092896	S4MW-5	S4MW-6
S4MW-7	S4MW-4	S5SW-6	S4MW-2
S4MW-3	S4DPGW	RB06-092996	TB07-093096

The sample set for the CTO 007 NAS Key West site, SDG 69579W, consists of fourteen (14) aqueous environmental samples, three (3) rinsate blanks, and three (3) field blanks. The samples were analyzed for selected volatile compounds, target semivolatile compounds, plus Target Compound List (TCL) pesticide/PCB and herbicide organic compounds. Two field duplicate pairs were included in this SDG (I3MW-4/I3DPGW and S4MW-3/S4DPGW).

The samples were collected by Brown and Root Environmental on September 26th, 27th, 28th, and 29th, 1996 and analyzed by General Engineering Laboratories, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Methods 8240, 602, 8270, 8080 and 8150 analytical and reporting protocols. The data were evaluated according to the following parameters:

- * Holding times
- * Initial and continuing calibrations
- * Laboratory and field blank analyses
- Surrogate spike recoveries
- Field Duplicate Precision
- Compound Quantitation

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the validation qualifications.

Volatile Organic Analysis by GC/MS

Several target compounds reported a %D in the continuing calibration above 25%. However this is not a major noncompliance for continuing calibration as only one column reported the high %D. No action was taken.

The following volatile compounds were detected in the field quality control blanks at the maximum concentrations indicated below:

Compound	Maximum Concentration	Action Level
Toluene	1.4 µg/L	7 µg/L
Acetone	24.5 µg/L	245 µg/L
Methylene Chloride	5.3 µg/L	53 µg/L

All samples for this fraction were affected by the blank contamination. The affected samples are FB05-092796, TB06-092796, RB04-092896, RB05-092896, S4MW-5, S4MW-6, S4MW-7, S4MW-4, S5SW-6, S4MW-2, S4MW-3, S4DPGW, RB06-092996, and TB07-093096.

Samples were qualified as un-detected (U) and the MDL was revised if the detected concentrations were below the MDL and the action level. Positive results reported above the MDL but below the action level were qualified as undetected (U). No further action was taken.

No other problems were noted.

Volatile Organic Analysis by GC

The following volatile compound was detected in the laboratory method blank at the maximum concentration indicated below:

Compound	Maximum Concentration	Action Level
Toluene	1.6 µg/L	8 µg/L
1,2-Dichlorobenzene	1.3 µg/L	6.5 µg/L

The affected sample is B7SW-01.

Toluene was qualified as nondetected (U) and the MDL was revised since the detected concentration was below the MDL and the action level. 1,2-dichlorobenzene was not detected in any samples.

No other problems were noted.

Semivolatiles

All samples were initially analyzed within the technical holding times. However, the extract vial for sample S4MW-7 was not secure and the sample extract evaporated. Therefore, the sample was re-extracted out of holding time. The data for this sample was qualified as estimated (J) for positive results and (UJ) for undetected results, due to exceeding the technical holding time.

No other problems were noted.

Pesticide/PCBs

Phorate, Methyl Parathion, and Parathion reported %D above 25% in the continuing calibration. However this is not a major noncompliance for continuing calibration as only one column reported the high %D. No action was taken.

No other problems were noted.

Herbicides

No problems were noted.

Additional Comments

Due to QC not meeting acceptance criteria, all samples were re-extracted outside of the technical holding times for the herbicide fraction. The original data was used for validation as it required no qualification.

Executive Summary

Laboratory Performance: Toluene, Acetone, 1,2-Dichlorobenzene, and Methylene Chloride were reported in volatile lab method control blanks. Sample S4MW-7 was not secure and the sample evaporated, therefore it had to be re-extracted out of the technical holding time for semivolatiles.

Other Factors Affecting Data Quality: None

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

R. Marty Ray

Brown and Root Environmental

R. Marty Ray
Environmental Scientist/Data Validator

for

Brown & Root Environmental

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

NAS KEY WEST

SDG 69579W

TABLE 1 - RECOMMENDATION SUMMARY

Sample No.	VOA	SVOA	PEST/PCB	HERB
FB05-092796	A^2 A^3 A^5			
I3MW-5				
B7SW-01	A^5			
I3MW-7				
TB06-092796				
I3MW-4				
I3DPGW				
I3MW-6				
RB04-092896	A^2 A^3 A^5			
RB05-092896	A^2 A^3 A^5			
S4MW-5	A^2 A^5			
S4MW-6	A^2 A^3 A^5			
S4MW-7	A^2 A^3 A^5	J^1		
S4MW-4	A^3 A^5			
S5MW-6	A^2 A^3 A^5			
S4MW-2	A^3 A^5			
S4MW-3	A^2 A^3 A^5			
S4DPGW	A^2 A^3 A^5			
RB06-092996	A^2 A^3 A^5			
TB06-092796	A^2 A^4 A^5			
TB07-093096	A^2 A^5			

If the field is left blank, the qualifier is A - Accept all data.

A^1 - Not used.

A^2 Accept data, qualified as nondetected (U) as result of a positive hit below the action level for Acetone.

A^3 Accept data, but change positive results for Methylene Chloride to a revised detection limit and qualify as nondetected, (U), as a result of laboratory method blank contamination.

A^4 Accept data, qualified as nondetected (U) as result of a positive hit below the action level for Methylene Chloride.

A^5 Accept data, but change positive results for Toluene to a revised detection limit and qualify as nondetected, (U), as a result of laboratory method blank contamination.

J[1] Accept data, but qualify all results as estimated, (J), as a result of the sample being analyzed out of the technical holding time

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

SDG: 69579W

SEMIVOLATILES

Sample Number: B7SW-01
Sample Date: 9/27/96
Laboratory ID: 9609579-03
QC Type: NORMAL
% Moisture: 0
Location: B7SW-1

	RESULT	QUAL	UNITS
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ANTHRACENE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
CHRYSENE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PYRENE	10	U	UG/L

Sample Number: FB05-092796
Sample Date: 9/27/96
Laboratory ID: 9609579-01
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	50	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,3-DINITROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROANILINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
3-NITROANILINE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-NITROANILINE	10	U	UG/L
4-NITROPHENOL	20	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	U	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	50	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	50	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L

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SEMIVOLATILES

ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
METHAPYRILENE	50	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
p-Cresol	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L

PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L
Triethylphosphorothioate	10	U	UG/L

Sample Number: RB06-092996
Sample Date: 9/29/96
Laboratory ID: 9609579-19
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNI
1,2,4,5-TETRACHLOROBENZENE	10	U	UG
1,2,4-TRICHLOROBENZENE	10	U	UG/
1,2-DICHLOROBENZENE	10	U	UG/
1,3,5-TRINITROBENZENE	20	U	UG/
1,3-DICHLOROBENZENE	10	U	UG/
1,3-DINITROBENZENE	10	U	UG/
1,4-DICHLOROBENZENE	10	U	UG/
1,4-DIOXANE	10	U	UG/
1,4-NAPHTHOQUINONE	10	U	UG/
1-NAPHTHYLAMINE	10	U	UG/
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/
2,4,5-TRICHLOROPHENOL	10	U	UG/l
2,4,6-TRICHLOROPHENOL	10	U	UG/l
2,4-DICHLOROPHENOL	10	U	UG/l
2,4-DIMETHYLPHENOL	10	U	UG/l
2,4-DINITROPHENOL	20	U	UG/l
2,4-DINITROTOLUENE	10	U	UG/l
2,6-DICHLOROPHENOL	10	U	UG/l
2,6-DINITROTOLUENE	10	U	UG/l
2-ACETYLAMINOFLUORENE	10	U	UG/l
2-CHLORONAPHTHALENE	10	U	UG/l
2-CHLOROPHENOL	10	U	UG/l
2-METHYL-4,6-DINITROPHENOL	10	U	UG/l
2-METHYLNAPHTHALENE	10	U	UG/l
2-METHYLPHENOL	10	U	UG/l
2-NAPHTHYLAMINE	10	U	UG/l
2-NITROANILINE	10	U	UG/l
2-NITROPHENOL	10	U	UG/l
2-PICOLINE	10	U	UG/l
3,3'-DICHLOROBENZIDINE	50	U	UG/l
3,3'-DIMETHYLBENZIDINE	20	U	UG/l
3-METHYLCHOLANTHRENE	10	U	UG/l
3-NITROANILINE	10	U	UG/l

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SEMIVOLATILES

4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-NITROANILINE	10	U	UG/L
4-NITROPHENOL	10	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	U	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	10	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	10	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
METHAPYRILENE	10	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
p-Cresol	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L
Triethylphosphorothioate	10	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69579W

SEMIVOLATILES

Sample Number: RBO4-092896
Sample Date: 9/28/96
Laboratory ID: 9609579-09
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	20	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,3-DINITROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROANILINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	20	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
3-NITROANILINE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-NITROANILINE	10	U	UG/L
4-NITROPHENOL	10	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	U	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	10	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	10	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
METHAPYRILENE	10	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
p-Cresol	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG/L
PRONAMIDE		U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69579W

SEMIVOLATILES

PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L
Triethylphosphorothioate	10	U	UG/L

Sample Number: RBO5-092896
Sample Date: 9/28/96
Laboratory ID: 9609579-10
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	20	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,3-DINITROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROANILINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	20	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
3-NITROANILINE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/
4-BROMOPHENYL PHENYL ETHER	10	U	UG/
4-CHLORO-3-METHYLPHENOL	10	U	UG/
4-CHLOROANILINE	10	U	UG/
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/
4-NITROANILINE	10	U	UG/
4-NITROPHENOL	10	U	UG/
4-NITROQUINOLINE-1-OXIDE	10	U	UG/
5-NITRO-O-TOLUIDINE	10	U	UG/
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	10	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	10	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69579W

SEMIVOLATILES

ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
METHAPYRILENE	10	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
p-Cresol	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L
Triethylphosphorothioate	10	U	UG/L

Sample Number: S4DPGW
Sample Date: 9/29/96
Laboratory ID: 9609579-18
QC Type: NORMAL
% Moisture: 0
Location: S4DPGW

	RESULT	QUAL	UNIT
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	20	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,3-DINITROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROANILINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	20	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
3-NITROANILINE	10	U	UG/L

SDG: 69579W

SEMIVOLATILES

4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-NITROANILINE	10	U	UG/L
4-NITROPHENOL	10	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	U	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	5.8	J	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	10	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	10	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
METHAPYRILENE	10	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-CRESOL	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69579W

SEMIVOLATILES

Sample Number: S4MW-2
Sample Date: 9/29/96
Laboratory ID: 9609579-16
QC Type: NORMAL
% Moisture: 0
Location: S4MW-2

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	20	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,3-DINITROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROANILINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	20	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
3-NITROANILINE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-NITROANILINE	10	U	UG/L
4-NITROPHENOL	10	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	U	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	10	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	10	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/
ETHYL METHANESULFONATE	10	U	UG/
FAMPHUR	10	U	UG/
FLUORANTHENE	10	U	UG/
FLUORENE	10	U	UG/
HEXACHLOROBENZENE	10	U	UG/
HEXACHLOROBUTADIENE	10	U	UG/
HEXACHLOROCYCLOPENTADIENE	10	U	UG/
HEXACHLOROETHANE	10	U	UG/
HEXACHLOROPROPENE	10	U	UG/l
INDENO(1,2,3-CD) PYRENE	10	U	UG/l
ISODRIN	10	U	UG/l
ISOPHORONE	10	U	UG/l
ISOSAFROLE	10	U	UG/l
KEPONE	10	U	UG/l
METHAPYRILENE	10	U	UG/l
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-CRESOL	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L

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SEMIVOLATILES

PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L

Sample Number: S4MW-3
Sample Date: 9/29/96
Laboratory ID: 9609579-17
QC Type: NORMAL
% Moisture: 0
Location: S4MW-3

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	20	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,3-DINITROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROANILINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	20	U	UG/L
3,3'-DIMETHYLBENZIDINE	20	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
3-NITROANILINE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG
4-BROMOPHENYL PHENYL ETHER	10	U	UG
4-CHLORO-3-METHYLPHENOL	10	U	UG
4-CHLOROANILINE	10	U	UG
4-CHLOROPHENYL PHENYL ETHER	10	U	UG
4-NITROANILINE	10	U	UG
4-NITROPHENOL	10	U	UG
4-NITROQUINOLINE-1-OXIDE	10	U	UG
5-NITRO-O-TOLUIDINE	10	U	UG
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG
ACENAPHTHENE	10	U	UG
ACENAPHTHYLENE	10	U	UG
ACETOPHENONE	10	U	UG
ANILINE	10	U	UG/
ANTHRACENE	10	U	UG/
ARAMITE	10	U	UG/
BENZO(A)ANTHRACENE	10	U	UG/
BENZO(A)PYRENE	10	U	UG/
BENZO(B)FLUORANTHENE	10	U	UG/
BENZO(G,H,I)PERYLENE	10	U	UG/
BENZO(K)FLUORANTHENE	10	U	UG/
BENZYL ALCOHOL	10	U	UG/
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/
BIS(2-CHLOROETHYL)ETHER	10	U	UG/
BIS(2-ETHYLHEXYL)PHTHALATE	18.6		UG/
BUTYL BENZYL PHTHALATE	10	U	UG/
CHLOROBENZILATE	10	U	UG/
CHRYSENE	10	U	UG/
DI-N-BUTYL PHTHALATE	10	U	UG/
DI-N-OCTYL PHTHALATE	10	U	UG/
DIALLATE	10	U	UG/
DIBENZO(A,H)ANTHRACENE	10	U	UG/
DIBENZOFURAN	10	U	UG/
DIETHYL PHTHALATE	10	U	UG/
DIMETHOATE	10	U	UG/
DIMETHYL PHTHALATE	10	U	UG/
DINOSEB	10	U	UG/
DIPHENYLAMINE	10	U	UG/
DISULFOTON	10	U	UG/

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GENERAL ENGINEERING LABS

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SEMIVOLATILES

ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
METHAPYRILENE	10	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-CRESOL	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L

PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L

Sample Number: S4MW-4
Sample Date: 9/28/96
Laboratory ID: 9609579-14
QC Type: NORMAL
% Moisture: 0
Location: S4MW-4

	RESULT	QUAL	UNI
1,2,4,5-TETRACHLOROBENZENE	10	U	UG
1,2,4-TRICHLOROBENZENE	10	U	UG
1,2-DICHLOROBENZENE	10	U	UG
1,3,5-TRINITROBENZENE	20	U	UG
1,3-DICHLOROBENZENE	10	U	UG
1,3-DINITROBENZENE	10	U	UG
1,4-DICHLOROBENZENE	10	U	UG
1,4-DIOXANE	10	U	UG
1,4-NAPHTHOQUINONE	10	U	UG
1-NAPHTHYLAMINE	10	U	UG
2,3,4,6-TETRACHLOROPHENOL	10	U	UG
2,4,5-TRICHLOROPHENOL	10	U	UG
2,4,6-TRICHLOROPHENOL	10	U	UG
2,4-DICHLOROPHENOL	10	U	UG
2,4-DIMETHYLPHENOL	10	U	UG
2,4-DINITROPHENOL	20	U	UG
2,4-DINITROTOLUENE	10	U	UG
2,6-DICHLOROPHENOL	10	U	UG
2,6-DINITROTOLUENE	10	U	UG
2-ACETYLAMINOFLUORENE	10	U	UG
2-CHLORONAPHTHALENE	10	U	UG
2-CHLOROPHENOL	10	U	UG
2-METHYL-4,6-DINITROPHENOL	10	U	UG
2-METHYLNAPHTHALENE	10	U	UG
2-METHYLPHENOL	10	U	UG
2-NAPHTHYLAMINE	10	U	UG
2-NITROANILINE	10	U	UG
2-NITROPHENOL	10	U	UG
2-PICOLINE	10	U	UG
3,3'-DICHLOROBENZIDINE	50	U	UG
3,3'-DIMETHYLBENZIDINE	20	U	UG
3-METHYLCHOLANTHRENE	10	U	UG
3-NITROANILINE	10	U	UG

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GENERAL ENGINEERING LABS

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SEMIVOLATILES

4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-NITROANILINE	10	U	UG/L
4-NITROPHENOL	10	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	U	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	10	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	10	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
METHAPYRILENE	10	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-CRESOL	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG
PRONAMIDE	10	U	UG
PYRENE	10	U	UG
PYRIDINE	10	U	UG
SAFROLE	10	U	UG
SULFOTEP	10	U	UG
THIONAZIN	10	U	UG

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

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SEMIVOLATILES

Sample Number: S4MW-5
Sample Date: 9/28/96
Laboratory ID: 9609579-11
QC Type: NORMAL
% Moisture: 0
Location: S4MW-5

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	20	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,3-DINITROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROANILINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	20	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
3-NITROANILINE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-NITROANILINE	10	U	UG/L
4-NITROPHENOL	10	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	U	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	10	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	10	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
METHAPYRILENE	10	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-CRESOL	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L

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SEMIVOLATILES

PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L

Sample Number: S4MW-6
Sample Date: 9/28/96
Laboratory ID: 9609579-12
QC Type: NORMAL
% Moisture: 0
Location: S4MW-6

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	20	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,3-DINITROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	11.9		UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROANILINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	20	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
3-NITROANILINE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/l
4-BROMOPHENYL PHENYL ETHER	10	U	UG/l
4-CHLORO-3-METHYLPHENOL	10	U	UG/l
4-CHLOROANILINE	10	U	UG/l
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/l
4-NITROANILINE	10	U	UG/l
4-NITROPHENOL	10	U	UG/l
4-NITROQUINOLINE-1-OXIDE	10	U	UG/l
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	10	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	10	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69579W

SEMIVOLATILES

ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
METHAPYRILENE	10	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-CRESOL	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L

Sample Number: S4MW-7
Sample Date: 9/28/96
Laboratory ID: 9609579-13
QC Type: NORMAL
% Moisture: 0
Location: S4MW-7

	RESULT	QUAL	UNIT
1,2,4,5-TETRACHLOROBENZENE	10	UJ	UG/L
1,2,4-TRICHLOROBENZENE	10	UJ	UG/L
1,2-DICHLOROBENZENE	10	UJ	UG/L
1,3,5-TRINITROBENZENE	20	UJ	UG/L
1,3-DICHLOROBENZENE	10	UJ	UG/L
1,3-DINITROBENZENE	10	UJ	UG/L
1,4-DICHLOROBENZENE	10	UJ	UG/L
1,4-DIOXANE	10	UJ	UG/L
1,4-NAPHTHOQUINONE	10	UJ	UG/L
1-NAPHTHYLAMINE	10	UJ	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	UJ	UG/L
2,4,5-TRICHLOROPHENOL	10	UJ	UG/L
2,4,6-TRICHLOROPHENOL	10	UJ	UG/L
2,4-DICHLOROPHENOL	10	UJ	UG/L
2,4-DIMETHYLPHENOL	10	UJ	UG/L
2,4-DINITROPHENOL	20	UJ	UG/L
2,4-DINITROTOLUENE	10	UJ	UG/L
2,6-DICHLOROPHENOL	10	UJ	UG/L
2,6-DINITROTOLUENE	10	UJ	UG/L
2-ACETYLAMINOFLUORENE	10	UJ	UG/L
2-CHLORONAPHTHALENE	10	UJ	UG/L
2-CHLOROPHENOL	10	UJ	UG/L
2-METHYL-4,6-DINITROPHENOL	10	UJ	UG/L
2-METHYLNAPHTHALENE	10	UJ	UG/L
2-METHYLPHENOL	10	UJ	UG/L
2-NAPHTHYLAMINE	10	UJ	UG/L
2-NITROANILINE	10	UJ	UG/L
2-NITROPHENOL	10	UJ	UG/L
2-PICOLINE	10	UJ	UG/L
3,3'-DICHLOROBENZIDINE	50	UJ	UG/L
3,3'-DIMETHYLBENZIDINE	20	UJ	UG/L
3-METHYLCHOLANTHRENE	10	UJ	UG/L
3-NITROANILINE	10	UJ	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69579W

SEMIVOLATILES

4-AMINOBIPHENYL	10	UJ	UG/L
4-BROMOPHENYL PHENYL ETHER	10	UJ	UG/L
4-CHLORO-3-METHYLPHENOL	10	UJ	UG/L
4-CHLOROANILINE	10	UJ	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	UJ	UG/L
4-NITROANILINE	10	UJ	UG/L
4-NITROPHENOL	10	UJ	UG/L
4-NITROQUINOLINE-1-OXIDE	10	UJ	UG/L
5-NITRO-O-TOLUIDINE	10	UJ	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	UJ	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	UJ	UG/L
ACENAPHTHENE	10	UJ	UG/L
ACENAPHTHYLENE	10	UJ	UG/L
ACETOPHENONE	10	UJ	UG/L
ANILINE	10	UJ	UG/L
ANTHRACENE	10	UJ	UG/L
ARAMITE	10	UJ	UG/L
BENZO(A)ANTHRACENE	10	UJ	UG/L
BENZO(A)PYRENE	10	UJ	UG/L
BENZO(B)FLUORANTHENE	10	UJ	UG/L
BENZO(G,H,I)PERYLENE	10	UJ	UG/L
BENZO(K)FLUORANTHENE	10	UJ	UG/L
BENZYL ALCOHOL	10	UJ	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	UJ	UG/L
BIS(2-CHLOROETHYL)ETHER	10	UJ	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	UJ	UG/L
BUTYL BENZYL PHTHALATE	10	UJ	UG/L
CHLOROBENZILATE	10	UJ	UG/L
CHRYSENE	10	UJ	UG/L
DI-N-BUTYL PHTHALATE	10	UJ	UG/L
DI-N-OCTYL PHTHALATE	10	UJ	UG/L
DIALLATE	10	UJ	UG/L
DIBENZO(A,H)ANTHRACENE	10	UJ	UG/L
DIBENZOFURAN	10	UJ	UG/L
DIETHYL PHTHALATE	10	UJ	UG/L
DIMETHOATE	10	UJ	UG/L
DIMETHYL PHTHALATE	10	UJ	UG/L
DINOSEB	10	UJ	UG/L
DIPHENYLAMINE	10	UJ	UG/L
DISULFOTON	10	UJ	UG/L
ETHYL METHACRYLATE	10	UJ	UG/L
ETHYL METHANESULFONATE	10	UJ	UG/L
FAMPHUR	10	UJ	UG/L
FLUORANTHENE	10	UJ	UG/L
FLUORENE	10	UJ	UG/L
HEXACHLOROBENZENE	10	UJ	UG/L
HEXACHLOROBUTADIENE	10	UJ	UG/L
HEXACHLOROCYCLOPENTADIENE	10	UJ	UG/L
HEXACHLOROETHANE	10	UJ	UG/L
HEXACHLOROPROPENE	10	UJ	UG/L
INDENO(1,2,3-CD) PYRENE	10	UJ	UG/L
ISODRIN	10	UJ	UG/L
ISOPHORONE	10	UJ	UG/L
ISOSAFROLE	10	UJ	UG/L
KEPONE	10	UJ	UG/L
METHAPYRILENE	10	UJ	UG/L
METHYL METHACRYLATE	10	UJ	UG/L
METHYL METHANESULFONATE	10	UJ	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	UJ	UG/L
N-NITROSODI-N-BUTYLAMINE	10	UJ	UG/L
N-NITROSODIETHYLAMINE	10	UJ	UG/L
N-NITROSODIMETHYLAMINE	10	UJ	UG/L
N-NITROSODIPHENYLAMINE	10	UJ	UG/L
N-NITROSOMETHYLETHYLAMINE	10	UJ	UG/L
N-NITROSOMORPHOLINE	10	UJ	UG/L
N-NITROSOPIPERIDINE	10	UJ	UG/L
N-NITROSOPYRROLIDINE	10	UJ	UG/L
NAPHTHALENE	10	UJ	UG/L
NITROBENZENE	10	UJ	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	UJ	UG/L
O-TOLUIDINE	10	UJ	UG/L
P-CRESOL	10	UJ	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	UJ	UG/L
P-PHENYLENEDIAMINE	20	UJ	UG/L
PENTACHLOROBENZENE	10	UJ	UG/L
PENTACHLOROETHANE	10	UJ	UG/L
PENTACHLORONITROBENZENE	10	UJ	UG/L
PENTACHLOROPHENOL	10	UJ	UG/L
PHENACETIN	10	UJ	UG/L
PHENANTHRENE	10	UJ	UG/L
PHENOL	10	UJ	UG
PRONAMIDE	10	UJ	UG
PYRENE	10	UJ	UG
PYRIDINE	10	UJ	UG
SAFROLE	10	UJ	UG
SULFOTEP	10	UJ	UG
THIONAZIN	10	UJ	UG

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69579W

SEMIVOLATILES

Sample Number: S5SW-6
Sample Date:
Laboratory ID: 9609579-15
QC Type:
% Moisture:
Location:

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	20	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,3-DINITROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROANILINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	20	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
3-NITROANILINE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-NITROANILINE	10	U	UG/L
4-NITROPHENOL	10	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	U	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	10	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	10	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG
ETHYL METHANESULFONATE	10	U	UG
FAMPHUR	10	U	UG
FLUORANTHENE	10	U	UG
FLUORENE	10	U	UG
HEXACHLOROBENZENE	10	U	UG
HEXACHLOROBUTADIENE	10	U	UG
HEXACHLOROCYCLOPENTADIENE	10	U	UG
HEXACHLOROETHANE	10	U	UG
HEXACHLOROPROPENE	10	U	UG
INDENO(1,2,3-CD) PYRENE	10	U	UG
ISODRIN	10	U	UG
ISOPHORONE	10	U	UG
ISOSAFROLE	10	U	UG
KEPONE	10	U	UG
METHAPYRILENE	10	U	UG
METHYL METHACRYLATE	10	U	UG
METHYL METHANESULFONATE	10	U	UG
N-NITROSO-DI-N-PROPYLAMINE	10	U	UG
N-NITROSODI-N-BUTYLAMINE	10	U	UG
N-NITROSODIETHYLAMINE	10	U	UG
N-NITROSODIMETHYLAMINE	10	U	UG
N-NITROSODIPHENYLAMINE	10	U	UG
N-NITROSOMETHYLETHYLAMINE	10	U	UG
N-NITROSOMORPHOLINE	10	U	UG
N-NITROSOPIPERIDINE	10	U	UG
N-NITROSOPYRROLIDINE	10	U	UG
NAPHTHALENE	10	U	UG
NITROBENZENE	10	U	UG
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG
O-TOLUIDINE	10	U	UG
P-CRESOL	10	U	UG
P-DIMETHYLAMINOAZOBENZENE	10	U	UG
P-PHENYLENEDIAMINE	20	U	UG
PENTACHLOROBENZENE	10	U	UG
PENTACHLOROETHANE	10	U	UG
PENTACHLORONITROBENZENE	10	U	UG
PENTACHLOROPHENOL	10	U	UG
PHENACETIN	10	U	UG
PHENANTHRENE	10	U	UG

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

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SEMIVOLATILES

PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L

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GENERAL ENGINEERING LABS

SDG: 69579W

VOLATILES

Sample Number: B7SW-01
Sample Date: 9/27/96
Laboratory ID: 9609579-03
QC Type: NORMAL
% Moisture: 0
Location: B7SW-1

	RESULT	QUAL	UNITS
1,2-DICHLOROBENZENE	2	U	UG/L
1,3-DICHLOROBENZENE	2	U	UG/L
1,4-DICHLOROBENZENE	2	U	UG/L
BENZENE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
TOLUENE	2	U	UG/L
XYLENES (TOTAL)	6	U	UG/L

Sample Number: FB05092796
Sample Date: 9/27/96
Laboratory ID: 9609579-01
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHYLENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
1,2-TRANS-DICHLOROETHYLENE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	22.9	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/L
BROMOFORM	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROPRENE	2	U	UG/L
CIS-1,3-DICHLOROPROPYLENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLOROBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	2	U	UG/
ETHYLBENZENE	2	U	UG/
ISOBUTYL ALCOHOL	20	U	UG/
METHACRYLONITRILE	10	U	UG/
METHYL BROMIDE	2	U	UG/
METHYL CHLORIDE	2	U	UG/
METHYL IODIDE	5	U	UG/
METHYL METHACRYLATE	10	U	UG
METHYLENE CHLORIDE	5	U	UG/
PROPIONITRILE	20	U	UG/
STYRENE	2	U	UG/
TETRACHLOROETHYLENE	2	U	UG/
TOLUENE	2	U	UG/
TRANS-1,3-DICHLOROPROPYLENE	2	U	UG/
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/
TRICHLOROETHYLENE	2	U	UG/
TRICHLOROFLUOROMETHANE	2	U	UG/
VINYL ACETATE	5	U	UG/
VINYL CHLORIDE	2	U	UG/
XYLENES (TOTAL)	4	U	UG/

SDG: 69579W

VOLATILES

Sample Number: RB04092896
Sample Date: 9/28/96
Laboratory ID: 9609579-09
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHYLENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
1,2-TRANS-DICHLOROETHYLENE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	21	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/L
BROMOFORM	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROPRENE	2	U	UG/L
CIS-1,3-DICHLOROPROPYLENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLOROBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
ISOBUTYL ALCOHOL	20	U	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL BROMIDE	2	U	UG/L
METHYL CHLORIDE	2	U	UG/L
METHYL IODIDE	5	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYLENE CHLORIDE	5	U	UG/L
PROPIONITRILE	20	U	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHYLENE	2	U	UG/L
TOLUENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPYLENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHYLENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES (TOTAL)	4	U	UG/L

Sample Number: RB05092896
Sample Date: 9/28/96
Laboratory ID: 9609579-10
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNIT
1,1,1,2-TETRACHLOROETHANE	2	U	UG/l
1,1,1-TRICHLOROETHANE	2	U	UG/l
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHYLENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
1,2-TRANS-DICHLOROETHYLENE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	21.2	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/L
BROMOFORM	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROPRENE	2	U	UG/L
CIS-1,3-DICHLOROPROPYLENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLOROBROMOMETHANE	2	U	UG/L

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VOLATILES

DICHLORODIFLUOROMETHANE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
ISOBUTYL ALCOHOL	20	U	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL BROMIDE	2	U	UG/L
METHYL CHLORIDE	2	U	UG/L
METHYL IODIDE	5	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYLENE CHLORIDE	5	U	UG/L
PROPIONITRILE	20	U	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHYLENE	2	U	UG/L
TOLUENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPYLENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHYLENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES (TOTAL)	4	U	UG/L

Sample Number: RB06092996
Sample Date: 9/29/96
Laboratory ID: 9609579-19
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHYLENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
1,2-TRANS-DICHLOROETHYLENE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	24.5	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/L
BROMOFORM	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROPRENE	2	U	UG/L
CIS-1,3-DICHLOROPROPYLENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLOROBROMOMETHANE	2	U	UG/L

DICHLORODIFLUOROMETHANE	2	U	UG
ETHYLBENZENE	2	U	UG
ISOBUTYL ALCOHOL	20	U	UG
METHACRYLONITRILE	10	U	UG
METHYL BROMIDE	2	U	UG
METHYL CHLORIDE	2	U	UG
METHYL IODIDE	5	U	UG
METHYL METHACRYLATE	10	U	UG
METHYLENE CHLORIDE	5	U	UG
PROPIONITRILE	20	U	UG
STYRENE	2	U	UG/
TETRACHLOROETHYLENE	2	U	UG/
TOLUENE	2	U	UG/
TRANS-1,3-DICHLOROPROPYLENE	2	U	UG/
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/
TRICHLOROETHYLENE	2	U	UG/
TRICHLOROFLUOROMETHANE	2	U	UG/
VINYL ACETATE	5	U	UG/
VINYL CHLORIDE	2	U	UG/
XYLENES (TOTAL)	4	U	UG/

CTO 007 - KEY WEST
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VOLATILES

Sample Number: S4DPGW
Sample Date: 9/29/96
Laboratory ID: 9609579-18
QC Type: NORMAL
% Moisture: 0
Location: S4DPGW

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	53	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/L
BROMOFORM	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROPRENE	2	U	UG/L
CIS-1,3-DICHLOROPROPENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLOROBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	6.9		UG/L
ETHYLBENZENE	2	U	UG/L
ISOBUTYL ALCOHOL	20	U	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL BROMIDE	2	U	UG/L
METHYL CHLORIDE	2	U	UG/L
METHYL IODIDE	5	U	UG/L
METHYLENE CHLORIDE	5	U	UG/L
PROPIONITRILE	20	U	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHENE	2	U	UG/L
TOLUENE	2	U	UG/L
TRANS-1,2-DICHLOROETHENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	3.4		UG/L
XYLENES (TOTAL)	4	U	UG/L

Sample Number: S4MW2
Sample Date: 9/29/96
Laboratory ID: 9609579-16
QC Type: NORMAL
% Moisture: 0
Location: S4MW-2

	RESULT	QUAL	UNI
1,1,1,2-TETRACHLOROETHANE	2	U	UG
1,1,1-TRICHLOROETHANE	2	U	UG
1,1,2,2-TETRACHLOROETHANE	2	U	UG
1,1,2-TRICHLOROETHANE	2	U	UG
1,1-DICHLOROETHANE	2		UG
1,1-DICHLOROETHENE	2	U	UG
1,2,3-TRICHLOROPROPANE	2	U	UG
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG
1,2-DIBROMOETHANE	2	U	UG
1,2-DICHLOROETHANE	2	U	UG
1,2-DICHLOROPROPANE	2	U	UG
2-BUTANONE	5	U	UG
2-HEXANONE	5	U	UG
4-METHYL-2-PENTANONE	5	U	UG
ACETONE	10	U	UG
ACETONITRILE	10	U	UG
ACROLEIN	20	U	UG
ACRYLONITRILE	20	U	UG
ALLYL CHLORIDE	10	U	UG
BENZENE	2	U	UG
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG
BROMOFORM	2	U	UG
CARBON DISULFIDE	5	U	UG
CARBON TETRACHLORIDE	2	U	UG
CHLOROBENZENE	2	U	UG
CHLORODIBROMOMETHANE	2	U	UG
CHLOROETHANE	2	U	UG
CHLOROFORM	2	U	UG
CHLOROPRENE	2	U	UG
CIS-1,3-DICHLOROPROPENE	2	U	UG
DIBROMOMETHANE	2	U	UG
DICHLOROBROMOMETHANE	2	U	UG
DICHLORODIFLUOROMETHANE	2	U	UG

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VOLATILES

ETHYLBENZENE	2	U	UG/L
ISOBUTYL ALCOHOL	20	U	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL BROMIDE	2	U	UG/L
METHYL CHLORIDE	2	U	UG/L
METHYL IODIDE	5	U	UG/L
METHYLENE CHLORIDE	5	U	UG/L
PROPIONITRILE	20	U	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHENE	2	U	UG/L
TOLUENE	2	U	UG/L
TRANS-1,2-DICHLOROETHENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	0.77	J	UG/L
XYLENES (TOTAL)	4	U	UG/L

Sample Number: S4MW3
Sample Date: 9/29/96
Laboratory ID: 9609579-17
QC Type: NORMAL
% Moisture: 0
Location: S4MW-3

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	50.4	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/L
BROMOFORM	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROPRENE	2	U	UG/L
CIS-1,3-DICHLOROPROPENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLOROBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	5.5		UG/L

ETHYLBENZENE	2	U	UG
ISOBUTYL ALCOHOL	20	U	UG
METHACRYLONITRILE	10	U	UG
METHYL BROMIDE	2	U	UG
METHYL CHLORIDE	2	U	UG
METHYL IODIDE	5	U	UG
METHYLENE CHLORIDE	5	U	UG
PROPIONITRILE	20	U	UG
STYRENE	2	U	UG
TETRACHLOROETHENE	2	U	UG
TOLUENE	2	U	UG
TRANS-1,2-DICHLOROETHENE	2	U	UG
TRANS-1,3-DICHLOROPROPENE	2	U	UG
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG
TRICHLOROETHENE	2	U	UG
TRICHLOROFLUOROMETHANE	2	U	UG
VINYL ACETATE	5	U	UG
VINYL CHLORIDE	2.7		UG
XYLENES (TOTAL)	4	U	UG

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69579W

VOLATILES

Sample Number: S4MW4
Sample Date:
Laboratory ID: 9609579-14
QC Type:
% Moisture:
Location:

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	10	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/L
BROMOFORM	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROPRENE	2	U	UG/L
CIS-1,3-DICHLOROPROPENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLOROBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
ISOBUTYL ALCOHOL	20	U	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL BROMIDE	2	U	UG/L
METHYL CHLORIDE	2	U	UG/L
METHYL IODIDE	5	U	UG/L
METHYLENE CHLORIDE	5	U	UG/L
PROPIONITRILE	20	U	UG/L
STYRENE	3.4		UG/L
TETRACHLOROETHENE	2	U	UG/L
TOLUENE	2	U	UG/L
TRANS-1,2-DICHLOROETHENE	1.2	J	UG/L
TRANS-1,3-DICHLOROPROPENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	2.4		UG/L
XYLENES (TOTAL)	4	U	UG/L

Sample Number: S4MW5
Sample Date: 9/28/96
Laboratory ID: 9609579-11
QC Type: NORMAL
% Moisture: 0
Location: S4MW-5

	RESULT	QUAL	UNI
1,1,1,2-TETRACHLOROETHANE	2	U	UG
1,1,1-TRICHLOROETHANE	2	U	UG
1,1,2,2-TETRACHLOROETHANE	2	U	UG
1,1,2-TRICHLOROETHANE	2	U	UG
1,1-DICHLOROETHANE	2	U	UG
1,1-DICHLOROETHENE	2	U	UG
1,2,3-TRICHLOROPROPANE	2	U	UG
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG
1,2-DIBROMOETHANE	2	U	UG
1,2-DICHLOROETHANE	2	U	UG
1,2-DICHLOROPROPANE	2	U	UG
2-BUTANONE	5	U	UG
2-HEXANONE	5	U	UG
4-METHYL-2-PENTANONE	5	U	UG
ACETONE	10	U	UG
ACETONITRILE	10	U	UG
ACROLEIN	20	U	UG
ACRYLONITRILE	20	U	UG
ALLYL CHLORIDE	10	U	UG
BENZENE	2	U	UG
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG
BROMOFORM	2	U	UG
CARBON DISULFIDE	5	U	UG
CARBON TETRACHLORIDE	2	U	UG
CHLOROBENZENE	2	U	UG
CHLORODIBROMOMETHANE	2	U	UG
CHLOROETHANE	2	U	UG
CHLOROFORM	2	U	UG
CHLOROPRENE	2	U	UG
CIS-1,3-DICHLOROPROPENE	2	U	UG
DIBROMOMETHANE	2	U	UG
DICHLOROBROMOMETHANE	2	U	UG
DICHLORODIFLUOROMETHANE	2	U	UG

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69579W

VOLATILES

ETHYLBENZENE	2.3		UG/L
ISOBUTYL ALCOHOL	20	U	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL BROMIDE	2	U	UG/L
METHYL CHLORIDE	2	U	UG/L
METHYL IODIDE	5	U	UG/L
METHYLENE CHLORIDE	5	U	UG/L
PROPIONITRILE	20	U	UG/L
STYRENE	44.6		UG/L
TETRACHLOROETHENE	2	U	UG/L
TOLUENE	2	U	UG/L
TRANS-1,2-DICHLOROETHENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES (TOTAL)	3.2	J	UG/L

Sample Number: S4MW6
Sample Date: 9/28/96
Laboratory ID: 9609579-12
QC Type: NORMAL
% Moisture: 0
Location: S4MW-6

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	4		UG/L
1,1-DICHLOROETHENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	25.4	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/L
BROMOFORM	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	0.28	J	UG/L
CHLOROPRENE	2	U	UG/L
CIS-1,3-DICHLOROPROPENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLOROBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	2	U	UG/L
ETHYLBENZENE	2	U	UG
ISOBUTYL ALCOHOL	20	U	UG
METHACRYLONITRILE	10	U	UG
METHYL BROMIDE	2	U	UG
METHYL CHLORIDE	2	U	UG
METHYL IODIDE	5	U	UG
METHYLENE CHLORIDE	5	U	UG
PROPIONITRILE	20	U	UG
STYRENE	3.1		UG
TETRACHLOROETHENE	2	U	UG
TOLUENE	2	U	UG
TRANS-1,2-DICHLOROETHENE	2	U	UG
TRANS-1,3-DICHLOROPROPENE	2	U	UG
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG
TRICHLOROETHENE	2	U	UG
TRICHLOROFLUOROMETHANE	2	U	UG
VINYL ACETATE	5	U	UG
VINYL CHLORIDE	2	U	UG
XYLENES (TOTAL)	4	U	UG

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69579W

VOLATILES

Sample Number: S4MW7
Sample Date: 9/28/96
Laboratory ID: 9609579-13
QC Type: NORMAL
% Moisture: 0
Location: S4MW-7

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	10.8	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/L
BROMOFORM	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROPRENE	2	U	UG/L
CIS-1,3-DICHLOROPROPENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLOROBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
ISOBUTYL ALCOHOL	20	U	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL BROMIDE	2	U	UG/L
METHYL CHLORIDE	2	U	UG/L
METHYL IODIDE	5	U	UG/L
METHYLENE CHLORIDE	5	U	UG/L
PROPIONITRILE	20	U	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHENE	2	U	UG/L
TOLUENE	2	U	UG/L
TRANS-1,2-DICHLOROETHENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES (TOTAL)	4	U	UG/L

Sample Number: S5SW-6
Sample Date:
Laboratory ID: 9609579-15
QC Type:
% Moisture:
Location:

	RESULT	QUAL	UNI
1,1,1,2-TETRACHLOROETHANE	2	U	UG
1,1,1-TRICHLOROETHANE	2	U	UG
1,1,2,2-TETRACHLOROETHANE	2	U	UG
1,1,2-TRICHLOROETHANE	2	U	UG
1,1-DICHLOROETHANE	2	U	UG
1,1-DICHLOROETHENE	2	U	UG
1,2,3-TRICHLOROPROPANE	2	U	UG
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG
1,2-DIBROMOETHANE	2	U	UG
1,2-DICHLOROETHANE	2	U	UG
1,2-DICHLOROPROPANE	2	U	UG
2-BUTANONE	5	U	UG
2-HEXANONE	5	U	UG
4-METHYL-2-PENTANONE	5	U	UG
ACETONE	20.2	U	UG
ACETONITRILE	10	U	UG
ACROLEIN	20	U	UG
ACRYLONITRILE	20	U	UG
ALLYL CHLORIDE	10	U	UG
BENZENE	2	U	UG
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG
BROMOFORM	2	U	UG
CARBON DISULFIDE	5	U	UG
CARBON TETRACHLORIDE	2	U	UG
CHLOROBENZENE	2	U	UG
CHLORODIBROMOMETHANE	2	U	UG
CHLOROETHANE	2	U	UG
CHLOROFORM	2	U	UG
CHLOROPRENE	2	U	UG
CIS-1,3-DICHLOROPROPENE	2	U	UG
DIBROMOMETHANE	2	U	UG
DICHLOROBROMOMETHANE	2	U	UG
DICHLORODIFLUOROMETHANE	2	U	UG

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69579W

VOLATILES

ETHYLBENZENE	2	U	UG/L
ISOBUTYL ALCOHOL	20	U	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL BROMIDE	2	U	UG/L
METHYL CHLORIDE	2	U	UG/L
METHYL IODIDE	5	U	UG/L
METHYLENE CHLORIDE	5	U	UG/L
PROPIONITRILE	20	U	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHENE	2	U	UG/L
TOLUENE	2	U	UG/L
TRANS-1,2-DICHLOROETHENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES (TOTAL)	4	U	UG/L

Sample Number: TB06092796
Sample Date: 9/26/96
Laboratory ID: 9609579-05
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHYLENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
1,2-TRANS-DICHLOROETHYLENE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	19.2	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/L
BROMOFORM	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROPRENE	2	U	UG/L
CIS-1,3-DICHLOROPROPYLENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLOROBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	2	U	UG/
ETHYLBENZENE	2	U	UG/
ISOBUTYL ALCOHOL	20	U	UG/
METHACRYLONITRILE	10	U	UG/
METHYL BROMIDE	2	U	UG/
METHYL CHLORIDE	2	U	UG/
METHYL IODIDE	5	U	UG/
METHYL METHACRYLATE	10	U	UG/
METHYLENE CHLORIDE	5.4	U	UG/
PROPIONITRILE	20	U	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHYLENE	2	U	UG/L
TOLUENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPYLENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHYLENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES (TOTAL)	4	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69579W

VOLATILES

Sample Number: TB07093096
Sample Date: 9/26/96
Laboratory ID: 9609579-20
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHYLENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
1,2-TRANS-DICHLOROETHYLENE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	23.9	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL)ETHER	10	U	UG/L
BROMOFORM	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROPRENE	2	U	UG/L
CIS-1,3-DICHLOROPROPYLENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLOROBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
ISOBUTYL ALCOHOL	20	U	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL BROMIDE	2	U	UG/L
METHYL CHLORIDE	2	U	UG/L
METHYL IODIDE	5	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYLENE CHLORIDE	5.3	U	UG/L
PROPIONITRILE	20	U	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHYLENE	2	U	UG/L
TOLUENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPYLENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHYLENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES (TOTAL)	4	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69579W

PESTICIDES/PCBs

Sample Number: B7SW-01
Sample Date: 9/27/96
Laboratory ID: 9609579-03
QC Type: NORMAL
% Moisture: 0
Location: B7SW-1

	RESULT	QUAL	UNITS
2,4,5-T	0.097	U	UG/L
2,4,5-TP (SILVEX)	0.097	U	UG/L
2,4-D	0.097	U	UG/L
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.08	U	UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN I	0.04	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

Sample Number: FB05-092796
Sample Date: 9/27/96
Laboratory ID: 9609579-01
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
2,4,5-T	0.1	U	UG/L
2,4,5-TP (SILVEX)	0.1	U	UG/L
2,4-D	0.1	U	UG/L
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.08	U	UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDOSULFAN-I	0.04	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

Sample Number: I3DPGW
Sample Date: 9/28/96
Laboratory ID: 9609579-07
QC Type: NORMAL
% Moisture: 0
Location: I3DPGW

	RESULT	QUAL	UNIT
2,4,5-T	0.096	U	UG/
2,4,5-TP (SILVEX)	0.096	U	UG/
2,4-D	0.096	U	UG/
4,4'-DDD	0.08	U	UG/
4,4'-DDE	0.08	U	UG/
4,4'-DDT	0.08	U	UG/
ALDRIN	0.04	U	UG/
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN I	0.04	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69579W

PESTICIDES/PCBs

Sample Number: I3MW-4
Sample Date: 9/28/96
Laboratory ID: 9609579-06
QC Type: NORMAL
% Moisture: 0
Location: I3MW-4

	RESULT	QUAL	UNITS
2,4,5-T	0.096	U	UG/L
2,4,5-TP (SILVEX)	0.096	U	UG/L
2,4-D	0.096	U	UG/L
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.08	U	UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN I	0.04	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

Sample Number: I3MW-5
Sample Date: 9/27/96
Laboratory ID: 9609579-02
QC Type: NORMAL
% Moisture: 0
Location: I3MW-5

	RESULT	QUAL	UNITS
2,4,5-T	0.1	U	UG/L
2,4,5-TP (SILVEX)	0.1	U	UG/L
2,4-D	0.1	U	UG/L
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.08	U	UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN I	0.04	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

Sample Number: I3MW-6
Sample Date: 9/28/96
Laboratory ID: 9609579-08
QC Type: NORMAL
% Moisture: 0
Location: I3MW-6

	RESULT	QUAL	UNI
2,4,5-T	0.1	U	UG
2,4,5-TP (SILVEX)	0.1	U	UG
2,4-D	0.1	U	UG
4,4'-DDD	0.08	U	UG
4,4'-DDE	0.08	U	UG
4,4'-DDT	0.08	U	UG
ALDRIN	0.04	U	UG
ALPHA-BHC	0.04	U	UG
AROCLOR-1016	0.25	U	UG
AROCLOR-1221	0.25	U	UG
AROCLOR-1232	0.25	U	UG
AROCLOR-1242	0.25	U	UG
AROCLOR-1248	0.25	U	UG
AROCLOR-1254	0.25	U	UG
AROCLOR-1260	0.25	U	UG
BETA-BHC	0.04	U	UG
CHLORDANE	0.5	U	UG
DELTA-BHC	0.04	U	UG
DIELDRIN	0.08	U	UG
ENDOSULFAN I	0.04	U	UG
ENDOSULFAN II	0.08	U	UG
ENDOSULFAN SULFATE	0.08	U	UG
ENDRIN	0.08	U	UG
ENDRIN ALDEHYDE	0.08	U	UG
GAMMA-BHC (LINDANE)	0.04	U	UG
HEPTACHLOR	0.04	U	UG
HEPTACHLOR EPOXIDE	0.04	U	UG
METHOXYCHLOR	0.4	U	UG
METHYL PARATHION	0.1	U	UG
PARATHION	0.1	U	UG
PHORATE	0.1	U	UG
TOXAPHENE	2	U	UG

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69579W

PESTICIDES/PCBs

Sample Number: I3MW-7
Sample Date: 9/27/96
Laboratory ID: 9609579-04
QC Type: NORMAL
% Moisture: 0
Location: I3MW-7

	RESULT	QUAL	UNITS
2,4,5-T	0.099	U	UG/L
2,4,5-TP (SILVEX)	0.099	U	UG/L
2,4-D	0.099	U	UG/L
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.08	U	UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN I	0.04	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

Sample Number: RB04-092896RR
Sample Date: 9/28/96
Laboratory ID: 9609579-09
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
2,4,5-T	0.096	U	UG/L
2,4,5-TP (SILVEX)	0.096	U	UG/L
2,4-D	0.096	U	UG/L

Sample Number: RB05-092896
Sample Date: 9/28/96
Laboratory ID: 9609579-10
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNI
2,4,5-T	0.098	U	UG
2,4,5-TP (SILVEX)	0.098	U	UG
2,4-D	0.098	U	UG

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69579W

PESTICIDES/PCBs

Sample Number: RB06-092996
Sample Date: 9/29/96
Laboratory ID: 9609579-19
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
2,4,5-T	0.1	U	UG/L
2,4,5-TP (SILVEX)	0.1	U	UG/L
2,4-D	0.1	U	UG/L
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.08	U	UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDOSULFAN-I	0.04	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

Sample Number: RBO4-092896
Sample Date: 9/28/96
Laboratory ID: 9609579-09
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.08	U	UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDOSULFAN-I	0.04	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

Sample Number: RBO5-092896
Sample Date: 9/28/96
Laboratory ID: 9609579-10
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNI
4,4'-DDD	0.08	U	UG
4,4'-DDE	0.08	U	UG
4,4'-DDT	0.08	U	UG
ALDRIN	0.04	U	UG
ALPHA-BHC	0.04	U	UG
AROCLOR-1016	0.25	U	UG
AROCLOR-1221	0.25	U	UG
AROCLOR-1232	0.25	U	UG
AROCLOR-1242	0.25	U	UG
AROCLOR-1248	0.25	U	UG
AROCLOR-1254	0.25	U	UG
AROCLOR-1260	0.25	U	UG
BETA-BHC	0.04	U	UG
CHLORDANE	0.5	U	UG
DELTA-BHC	0.04	U	UG
DIELDRIN	0.08	U	UG
ENDOSULFAN II	0.08	U	UG
ENDOSULFAN SULFATE	0.08	U	UG
ENDOSULFAN-I	0.04	U	UG
ENDRIN	0.08	U	UG
ENDRIN ALDEHYDE	0.08	U	UG
GAMMA-BHC (LINDANE)	0.04	U	UG
HEPTACHLOR	0.04	U	UG
HEPTACHLOR EPOXIDE	0.04	U	UG
METHOXYCHLOR	0.4	U	UG
METHYL PARATHION	0.1	U	UG
PARATHION	0.1	U	UG
PHORATE	0.1	U	UG
TOXAPHENE	2	U	UG

INORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO: **C. BRYAN** **DATE:** **JANUARY 16, 1997**

FROM: **TERESA M. HUDSON** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA REVIEW – TAL METALS AND CYANIDE**
CTO 007 – KEY WEST, FLORIDA
SDG – 69580S

SAMPLES: 20/SOIL/

B7SS-01	S4SS-7	S5SS-5	I7SS-07
B7SS-02	S4DPSS	S5DPSS	I7SS-06
S4SS-4	S5SS-6	I7SS-10	I7SS-05
S4SS-5	S5SS-4	I7SS-09	I7SS-03
S4SS-6	S5SS-3	I7SS-08	I7SS-02

Introduction

Validation was performed on the inorganic analytical data from CTO 007, NAS Key West, SDG No.69580S. Twenty (20) samples were included for TAL metals and cyanide. Two (2) field duplicate pairs (S4SS-7/S4DPSS and S5SS-5/S5DPSS) and one (1) lab duplicate pair (B7SS-01/B7SS-01D) are included within this SDG.

All samples were analyzed for Target Analyte List (TAL) metals and cyanide. The samples were collected by Brown & Root Environmental on September 27, 29, and 30, 1996, and analyzed by General Engineering Laboratory under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- * Holding Times
- * Calibration Verifications
- * Laboratory Blank Analyses
- Matrix Spike Results

* Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/ preparation/ field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level (soil)
aluminum	19.5 ug/L	19.5 MG/KG
barium	0.5 ug/L	0.5 MG/KG
beryllium	0.4 ug/L	0.4 MG/KG
cadmium	0.6 ug/L	0.6 MG/KG
calcium[1]	7.118 MG/KG	35.59 MG/KG
chromium[1]	0.708 MG/KG	3.54 MG/KG
cyanide	1.8 ug/L	1.8 MG/KG
iron[1]	2.303 MG/KG	11.515 MG/KG
magnesium	9.9 ug/L	9.9 MG/KG
sodium[1]	4.692 MG/KG	23.46 MG/KG
thallium	2.3 ug/L	2.3 MG/KG
zinc	1.9 ug/L	1.9 MG/KG

Samples affected: All, except S5SS-4 and S5SS-3.

[1] Maximum concentration found in a soil preparation blank.

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for beryllium, cadmium, chromium, and cyanide have been qualified as nondetected "U." No action was taken for the remaining analytes since the results were either positive and greater than the action level or nondetect.

Notes

Holding Times were exceeded for cyanide for samples S4SS-4, I7SS-02, I7SS-03, I7SS-05, I7SS-06, I7SS-07, I7SS-08, I7SS-09, and I7SS-10. Results for these samples were qualified as estimated, "J" and "UJ."

The Initial Calibration Verification (ICV) Percent Recovery (R%) for calcium was outside the quality control limits. All results were positive and qualified as rejected, "R."

It was noted that zinc exceeded the quality control limits for Contract Required Detection Limit (CRDL) Percent Recoveries (R%). However, no validation actions were taken for CRDL R%.

It was noted that Matrix Spike (MS) Percent Recovery (R%) for antimony, cyanide, and thallium were below the quality control limits. MS R% were not low enough to require qualification.

It was noted that Post Digestion Matrix Spike (PDMS) Percent Recovery (R%) for antimony and thallium were below the quality control limits. However, no validation actions were taken for PDMS R%.

Executive Summary

Laboratory Performance: ICV %R for calcium was outside quality control limits. Several analytes were present in the laboratory method blank.

Other Factors Affecting Data Quality: None.

No other problems were encountered in this case.

The data for these analyses were reviewed in accordance with the "National Functional Guidelines for Inorganic Review," February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Brown and Root Environmental
Teresa M. Hudson
Environmental Scientist/Data Validator

Brown and Root Environmental
Arnold Lamb
District Quality Assurance Manager

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation.

KEY WEST
SDG – 69580S

TABLE 1 - RECOMMENDATION SUMMARY

Aluminum			Magnesium	
Antimony			Manganese	
Arsenic			Mercury	
Barium			Nickel	
Beryllium	A[1]		Potassium	
Cadmium	A[1]		Selenium	
Calcium		R[1]	Silver	
Chromium	A[1]		Sodium	
Cobalt			Thallium	
Copper			Vanadium	
Iron			Zinc	
Lead			Cyanide	A[1]

If the field is left blank, the qualifier is A - Accept all data.

A[1] Accept data but qualify as nondetected, "U," as a result of laboratory blank contamination.

R[1] Reject data as a result of extremely high ICV R%.

APPENDIX A
Qualified Analytical Results

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69580S

INORGANICS

Sample Number: B7SS01
Sample Date: 9/27/96
Laboratory ID: 9609580-01
QC Type: NORMAL
% Moisture: 56
Location: B7SS-1

	RESULT	QUAL	UNITS
ALUMINUM	741		MG/KG
ANTIMONY	0.88	U	MG/KG
ARSENIC	2.7		MG/KG
BARIUM	6.5		MG/KG
BERYLLIUM	0.04	U	MG/KG
CADMIUM	0.19	U	MG/KG
CALCIUM	313000	R	MG/KG
CHROMIUM	5.6	U	MG/KG
COBALT	0.44	U	MG/KG
COPPER	12.3		MG/KG
CYANIDE	0.14	U	MG/KG
IRON	736		MG/KG
LEAD	12		MG/KG
MAGNESIUM	4130		MG/KG
MANGANESE	4.4		MG/KG
MERCURY	0.03	U	MG/KG
NICKEL	2.4		MG/KG
POTASSIUM	737		MG/KG
SELENIUM	0.88	U	MG/KG
SILVER	0.5		MG/KG
SODIUM	15900		MG/KG
THALLIUM	0.88	U	MG/KG
VANADIUM	6.2		MG/KG
ZINC	11.6		MG/KG

Sample Number: B7SS02
Sample Date: 9/27/96
Laboratory ID: 9609580-02
QC Type: NORMAL
% Moisture: 68
Location: B7SS-2

	RESULT	QUAL	UNITS
ALUMINUM	2280		MG/KG
ANTIMONY	1.2	U	MG/KG
ARSENIC	7		MG/KG
BARIUM	13.2		MG/KG
BERYLLIUM	0.06	U	MG/KG
CADMIUM	0.12	U	MG/KG
CALCIUM	279000	R	MG/KG
CHROMIUM	9.2	U	MG/KG
COBALT	0.59	U	MG/KG
COPPER	13.8		MG/KG
CYANIDE	0.2	U	MG/KG
IRON	1370		MG/KG
LEAD	19.8		MG/KG
MAGNESIUM	11600		MG/KG
MANGANESE	12.1		MG/KG
MERCURY	0.05	U	MG/KG
NICKEL	4.1		MG/KG
POTASSIUM	1290		MG/KG
SELENIUM	1.2	U	MG/KG
SILVER	0.59	U	MG/KG
SODIUM	27400		MG/KG
THALLIUM	1.2	U	MG/KG
VANADIUM	7.7		MG/KG
ZINC	29.6		MG/KG

Sample Number: I7SS0-02
Sample Date: 9/30/96
Laboratory ID: 9609580-20
QC Type: NORMAL
% Moisture: 41
Location: I7SS-2

	RESULT	QUAL	UNIT
ALUMINUM	372		MG/K
ANTIMONY	0.64	U	MG/K
ARSENIC	1.3		MG/K
BARIUM	9.3		MG/K
BERYLLIUM	0.03	U	MG/K
CADMIUM	0.06	U	MG/K
CALCIUM	392000	R	MG/K
CHROMIUM	5.4	U	MG/K
COBALT	0.32	U	MG/K
COPPER	9.1		MG/K
CYANIDE	0.11	UJ	MG/K
IRON	482		MG/K
LEAD	11.7		MG/K
MAGNESIUM	4290		MG/K
MANGANESE	7.7		MG/K
MERCURY	0.03	U	MG/K
NICKEL	1.4		MG/K
POTASSIUM	435		MG/K
SELENIUM	0.64	U	MG/K
SILVER	0.32	U	MG/K
SODIUM	8570		MG/K
THALLIUM	0.64	U	MG/K
VANADIUM	4		MG/K
ZINC	0.32	U	MG/K

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SDG: 69580S

INORGANICS

Sample Number: I7SS03
Sample Date: 9/30/96
Laboratory ID: 9609580-19
QC Type: NORMAL
% Moisture: 33
Location: I7SS-3

	RESULT	QUAL	UNITS
ALUMINUM	309		MG/KG
ANTIMONY	0.57	U	MG/KG
ARSENIC	1.7		MG/KG
BARIUM	5.4		MG/KG
BERYLLIUM	0.03	U	MG/KG
CADMIUM	0.06	U	MG/KG
CALCIUM	378000	R	MG/KG
CHROMIUM	3.9	U	MG/KG
COBALT	0.29	U	MG/KG
COPPER	10.4		MG/KG
CYANIDE	0.09	UJ	MG/KG
IRON	1380		MG/KG
LEAD	14.9		MG/KG
MAGNESIUM	3290		MG/KG
MANGANESE	9.2		MG/KG
MERCURY	0.05		MG/KG
NICKEL	3.8		MG/KG
POTASSIUM	322		MG/KG
SELENIUM	0.57	U	MG/KG
SILVER	0.29	U	MG/KG
SODIUM	6630		MG/KG
THALLIUM	0.57	U	MG/KG
VANADIUM	4		MG/KG
ZINC	0.29	U	MG/KG

Sample Number: I7SS05
Sample Date: 9/30/96
Laboratory ID: 9609580-18
QC Type: NORMAL
% Moisture: 30
Location: I7SS-5

	RESULT	QUAL	UNITS
ALUMINUM	297		MG/KG
ANTIMONY	0.56	U	MG/KG
ARSENIC	1.6		MG/KG
BARIUM	5.5		MG/KG
BERYLLIUM	0.03	U	MG/KG
CADMIUM	0.12	U	MG/KG
CALCIUM	363000	R	MG/KG
CHROMIUM	4.2	U	MG/KG
COBALT	0.35		MG/KG
COPPER	35.4		MG/KG
CYANIDE	0.09	UJ	MG/KG
IRON	17.4		MG/KG
LEAD	19.6		MG/KG
MAGNESIUM	2860		MG/KG
MANGANESE	10.1		MG/KG
MERCURY	0.03		MG/KG
NICKEL	2.2		MG/KG
POTASSIUM	288		MG/KG
SELENIUM	0.56	U	MG/KG
SILVER	0.28	U	MG/KG
SODIUM	6170		MG/KG
THALLIUM	0.56	U	MG/KG
VANADIUM	3.3		MG/KG
ZINC	21.6		MG/KG

Sample Number: I7SS06
Sample Date: 9/30/96
Laboratory ID: 9609580-17
QC Type: NORMAL
% Moisture: 50
Location: I7SS-6

	RESULT	QUAL	UNIT
ALUMINUM	618		MG/K
ANTIMONY	0.74	U	MG/K
ARSENIC	3.6		MG/K
BARIUM	8.6		MG/K
BERYLLIUM	0.04	U	MG/K
CADMIUM	0.12	U	MG/K
CALCIUM	330000	R	MG/K
CHROMIUM	4.5	U	MG/K
COBALT	0.37	U	MG/K
COPPER	6.3		MG/K
CYANIDE	0.13	UJ	MG/K
IRON	576		MG/K
LEAD	8.8		MG/K
MAGNESIUM	4310		MG/K
MANGANESE	8.3		MG/K
MERCURY	0.03	U	MG/K
NICKEL	1.7		MG/K
POTASSIUM	613		MG/K
SELENIUM	0.74	U	MG/K
SILVER	0.37	U	MG/K
SODIUM	13700		MG/K
THALLIUM	0.74	U	MG/K
VANADIUM	4.7		MG/K
ZINC	0.37	U	MG/K

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INORGANICS

Sample Number: I7SS07
Sample Date: 9/30/96
Laboratory ID: 9609580-16
QC Type: NORMAL
% Moisture: 45
Location: I7SS-7

	RESULT	QUAL	UNITS
ALUMINUM	281		MG/KG
ANTIMONY	0.71	U	MG/KG
ARSENIC	2.5		MG/KG
BARIUM	7.5		MG/KG
BERYLLIUM	0.04	U	MG/KG
CADMIUM	0.07	U	MG/KG
CALCIUM	443000	R	MG/KG
CHROMIUM	3.6	U	MG/KG
COBALT	0.35	U	MG/KG
COPPER	15.1		MG/KG
CYANIDE	0.12	UJ	MG/KG
IRON	448		MG/KG
LEAD	16.5		MG/KG
MAGNESIUM	2860		MG/KG
MANGANESE	4.9		MG/KG
MERCURY	0.03	U	MG/KG
NICKEL	1.1		MG/KG
POTASSIUM	373		MG/KG
SELENIUM	0.71	U	MG/KG
SILVER	0.35	U	MG/KG
SODIUM	8480		MG/KG
THALLIUM	0.71	U	MG/KG
VANADIUM	3.4		MG/KG
ZINC	0.35	U	MG/KG

Sample Number: I7SS08
Sample Date: 9/30/96
Laboratory ID: 9609580-15
QC Type: NORMAL
% Moisture: 56
Location: I7SS-8

	RESULT	QUAL	UNITS
ALUMINUM	1010		MG/KG
ANTIMONY	0.84	U	MG/KG
ARSENIC	7.6		MG/KG
BARIUM	14.9		MG/KG
BERYLLIUM	0.04	U	MG/KG
CADMIUM	0.08	U	MG/KG
CALCIUM	378000	R	MG/KG
CHROMIUM	7.4	U	MG/KG
COBALT	0.42	U	MG/KG
COPPER	13		MG/KG
CYANIDE	0.15	UJ	MG/KG
IRON	1070		MG/KG
LEAD	15.4		MG/KG
MAGNESIUM	8800		MG/KG
MANGANESE	12.6		MG/KG
MERCURY	0.14		MG/KG
NICKEL	2.5		MG/KG
POTASSIUM	760		MG/KG
SELENIUM	0.84	U	MG/KG
SILVER	0.42	U	MG/KG
SODIUM	15800		MG/KG
THALLIUM	0.84	U	MG/KG
VANADIUM	4.9		MG/KG
ZINC	0.42	U	MG/KG

Sample Number: I7SS09
Sample Date: 9/30/96
Laboratory ID: 9609580-14
QC Type: NORMAL
% Moisture: 62
Location: I7SS-9

	RESULT	QUAL	UNIT
ALUMINUM	922		MG/K
ANTIMONY	0.98	U	MG/K
ARSENIC	9.7		MG/K
BARIUM	16.3		MG/K
BERYLLIUM	0.05	U	MG/K
CADMIUM	0.13	U	MG/K
CALCIUM	354000	R	MG/K
CHROMIUM	7.4	U	MG/K
COBALT	0.49	U	MG/K
COPPER	9		MG/K
CYANIDE	0.17	UJ	MG/K
IRON	978		MG/K
LEAD	14		MG/K
MAGNESIUM	9820		MG/K
MANGANESE	10.3		MG/K
MERCURY	0.04	U	MG/K
NICKEL	2.7		MG/K
POTASSIUM	951		MG/K
SELENIUM	0.98	U	MG/K
SILVER	0.49	U	MG/K
SODIUM	21200		MG/K
THALLIUM	0.98	U	MG/K
VANADIUM	5		MG/K
ZINC	0.49	U	MG/K

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INORGANICS

Sample Number: I7SS10
Sample Date: 9/30/96
Laboratory ID: 9609580-13
QC Type: NORMAL
% Moisture: 49
Location: I7SS-10

	RESULT	QUAL	UNITS
ALUMINUM	583		MG/KG
ANTIMONY	0.75	U	MG/KG
ARSENIC	4.8		MG/KG
BARIUM	10.9		MG/KG
BERYLLIUM	0.04	U	MG/KG
CADMIUM	0.07	U	MG/KG
CALCIUM	368000	R	MG/KG
CHROMIUM	5.4	U	MG/KG
COBALT	0.37	U	MG/KG
COPPER	6.8		MG/KG
CYANIDE	0.12	UJ	MG/KG
IRON	624		MG/KG
LEAD	9.6		MG/KG
MAGNESIUM	6420		MG/KG
MANGANESE	7.8		MG/KG
MERCURY	0.03	U	MG/KG
NICKEL	1.5		MG/KG
POTASSIUM	577		MG/KG
SELENIUM	0.75	U	MG/KG
SILVER	0.37	U	MG/KG
SODIUM	12600		MG/KG
THALLIUM	0.75	U	MG/KG
VANADIUM	3.3		MG/KG
ZINC	0.37	U	MG/KG

Sample Number: S4DPSS
Sample Date: 9/29/96
Laboratory ID: 9609580-07
QC Type: NORMAL
% Moisture: 37
Location: S4DPSS

	RESULT	QUAL	UNITS
ALUMINUM	2560		MG/KG
ANTIMONY	0.59	U	MG/KG
ARSENIC	1.8		MG/KG
BARIUM	9.4		MG/KG
BERYLLIUM	0.03	U	MG/KG
CADMIUM	0.09	U	MG/KG
CALCIUM	361000	R	MG/KG
CHROMIUM	7.1		MG/KG
COBALT	0.3	U	MG/KG
COPPER	13.7		MG/KG
CYANIDE	0.1	U	MG/KG
IRON	1450		MG/KG
LEAD	24.3		MG/KG
MAGNESIUM	6410		MG/KG
MANGANESE	24.3		MG/KG
MERCURY	0.02	U	MG/KG
NICKEL	2.3		MG/KG
POTASSIUM	193		MG/KG
SELENIUM	0.59	U	MG/KG
SILVER	0.3	U	MG/KG
SODIUM	943		MG/KG
THALLIUM	0.59	U	MG/KG
VANADIUM	6.9		MG/KG
ZINC	17.5		MG/KG

Sample Number: S4SS4
Sample Date: 9/29/96
Laboratory ID: 9609580-03
QC Type: NORMAL
% Moisture: 64
Location: S4SS-4

	RESULT	QUAL	UNIT
ALUMINUM	2810		MG/K
ANTIMONY	1	U	MG/K
ARSENIC	2.9		MG/K
BARIUM	9.8		MG/K
BERYLLIUM	0.05	U	MG/K
CADMIUM	0.1	U	MG/K
CALCIUM	270000	R	MG/K
CHROMIUM	9.9		MG/K
COBALT	0.52	U	MG/K
COPPER	8.5		MG/K
CYANIDE	0.19	UJ	MG/K
IRON	2060		MG/K
LEAD	24.3		MG/K
MAGNESIUM	15500		MG/K
MANGANESE	38.6		MG/K
MERCURY	0.04		MG/K
NICKEL	2.6		MG/K
POTASSIUM	382		MG/K
SELENIUM	1	U	MG/K
SILVER	0.52	U	MG/K
SODIUM	3340		MG/K
THALLIUM	1	U	MG/K
VANADIUM	6.2		MG/K
ZINC	0.52	U	MG/K

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SDG: 69580S

INORGANICS

Sample Number: S4SS5
Sample Date: 9/29/96
Laboratory ID: 9609580-04
QC Type: NORMAL
% Moisture: 50
Location: S4SS-5

	RESULT	QUAL	UNITS
ALUMINUM	1230		MG/KG
ANTIMONY	0.76	U	MG/KG
ARSENIC	2.9		MG/KG
BARIUM	6.5		MG/KG
BERYLLIUM	0.04	U	MG/KG
CADMIUM	0.1	U	MG/KG
CALCIUM	267000	R	MG/KG
CHROMIUM	5.1	U	MG/KG
COBALT	0.38	U	MG/KG
COPPER	4.7		MG/KG
CYANIDE	0.12	U	MG/KG
IRON	1410		MG/KG
LEAD	15.3		MG/KG
MAGNESIUM	10300		MG/KG
MANGANESE	26.3		MG/KG
MERCURY	0.03	U	MG/KG
NICKEL	1.2		MG/KG
POTASSIUM	214		MG/KG
SELENIUM	0.76	U	MG/KG
SILVER	0.38	U	MG/KG
SODIUM	3080		MG/KG
THALLIUM	0.76	U	MG/KG
VANADIUM	6		MG/KG
ZINC	0.38	U	MG/KG

Sample Number: S4SS6
Sample Date: 9/29/96
Laboratory ID: 9609580-05
QC Type: NORMAL
% Moisture: 50
Location: S4SS-6

	RESULT	QUAL	UNITS
ALUMINUM	2680		MG/KG
ANTIMONY	0.75	U	MG/KG
ARSENIC	2.2		MG/KG
BARIUM	7.7		MG/KG
BERYLLIUM	0.04	U	MG/KG
CADMIUM	0.07	U	MG/KG
CALCIUM	257000	R	MG/KG
CHROMIUM	7.6		MG/KG
COBALT	0.37	U	MG/KG
COPPER	5.2		MG/KG
CYANIDE	0.24	U	MG/KG
IRON	1670		MG/KG
LEAD	16.1		MG/KG
MAGNESIUM	16300		MG/KG
MANGANESE	36.5		MG/KG
MERCURY	0.03	U	MG/KG
NICKEL	2.3		MG/KG
POTASSIUM	296		MG/KG
SELENIUM	0.75	U	MG/KG
SILVER	0.37	U	MG/KG
SODIUM	2470		MG/KG
THALLIUM	0.75	U	MG/KG
VANADIUM	8.9		MG/KG
ZINC	0.37	U	MG/KG

Sample Number: S4SS7
Sample Date: 9/29/96
Laboratory ID: 9609580-06
QC Type: NORMAL
% Moisture: 37
Location: S4SS-7

	RESULT	QUAL	UNIT
ALUMINUM	1590		MG/K
ANTIMONY	0.6	U	MG/K
ARSENIC	1.1		MG/K
BARIUM	6.8		MG/K
BERYLLIUM	0.03	U	MG/K
CADMIUM	0.06	U	MG/K
CALCIUM	297000	R	MG/K
CHROMIUM	5	U	MG/K
COBALT	0.3	U	MG/K
COPPER	9.7		MG/K
CYANIDE	0.11	U	MG/K
IRON	978		MG/K
LEAD	18.4		MG/K
MAGNESIUM	4750		MG/K
MANGANESE	19.4		MG/K
MERCURY	0.03	U	MG/K
NICKEL	1.4		MG/K
POTASSIUM	127		MG/K
SELENIUM	0.6	U	MG/K
SILVER	0.3	U	MG/K
SODIUM	830		MG/K
THALLIUM	0.6	U	MG/K
VANADIUM	5		MG/K
ZINC	6.7		MG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69580S

INORGANICS

Sample Number: S5DPSS
Sample Date: 9/29/96
Laboratory ID: 9609580-12
QC Type: NORMAL
% Moisture: 42
Location: S5DPSS

	RESULT	QUAL	UNITS
ALUMINUM	1750		MG/KG
ANTIMONY	0.67	U	MG/KG
ARSENIC	7.7		MG/KG
BARIUM	49.9		MG/KG
BERYLLIUM	0.09	U	MG/KG
CADMIUM	15.3		MG/KG
CALCIUM	315000	R	MG/KG
CHROMIUM	260		MG/KG
COBALT	1.6		MG/KG
COPPER	14.5		MG/KG
CYANIDE	0.12	U	MG/KG
IRON	2900		MG/KG
LEAD	261		MG/KG
MAGNESIUM	9780		MG/KG
MANGANESE	29.9		MG/KG
MERCURY	0.03		MG/KG
NICKEL	5		MG/KG
POTASSIUM	326		MG/KG
SELENIUM	0.67	U	MG/KG
SILVER	1.2		MG/KG
SODIUM	1920		MG/KG
THALLIUM	0.67	U	MG/KG
VANADIUM	6.5		MG/KG
ZINC	1200		MG/KG

Sample Number: S5SS3
Sample Date: 9/29/96
Laboratory ID: 9609580-10
QC Type: NORMAL
% Moisture: 66
Location: S5SS-3

	RESULT	QUAL	UNITS
ALUMINUM	2300		MG/KG
ANTIMONY	1.1	U	MG/KG
ARSENIC	4.8		MG/KG
BARIUM	16.1		MG/KG
BERYLLIUM	0.06	U	MG/KG
CADMIUM	11.6		MG/KG
CALCIUM	313000	R	MG/KG
CHROMIUM	85		MG/KG
COBALT	0.59		MG/KG
COPPER	23.4		MG/KG
CYANIDE	0.19	U	MG/KG
IRON	2390		MG/KG
LEAD	115		MG/KG
MAGNESIUM	7880		MG/KG
MANGANESE	14.6		MG/KG
MERCURY	0.07		MG/KG
NICKEL	5.3		MG/KG
POTASSIUM	1120		MG/KG
SELENIUM	1.1	U	MG/KG
SILVER	0.85		MG/KG
SODIUM	23200		MG/KG
THALLIUM	1.1	U	MG/KG
VANADIUM	9.2		MG/KG
ZINC	336		MG/KG

Sample Number: S5SS4
Sample Date: 9/29/96
Laboratory ID: 9609580-09
QC Type: NORMAL
% Moisture: 61
Location: S5SS-4

	RESULT	QUAL	UNIT
ALUMINUM	1340		MG/K
ANTIMONY	0.97	U	MG/K
ARSENIC	4.3		MG/K
BARIUM	10.6		MG/K
BERYLLIUM	0.05	U	MG/K
CADMIUM	2.3		MG/K
CALCIUM	288000	R	MG/K
CHROMIUM	19.3		MG/K
COBALT	0.48	U	MG/K
COPPER	10.9		MG/K
CYANIDE	0.18	U	MG/K
IRON	952		MG/K
LEAD	31.7		MG/K
MAGNESIUM	6850		MG/K
MANGANESE	9.2		MG/K
MERCURY	0.04	U	MG/K
NICKEL	2.3		MG/K
POTASSIUM	990		MG/K
SELENIUM	0.97	U	MG/K
SILVER	0.48	U	MG/K
SODIUM	21300		MG/K
THALLIUM	0.97	U	MG/K
VANADIUM	6.4		MG/K
ZINC	79.7		MG/K

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GENERAL ENGINEERING LABS

SDG: 69580S

INORGANICS

Sample Number: S5SS5
Sample Date: 9/29/96
Laboratory ID: 9609580-11
QC Type: NORMAL
% Moisture: 47
Location: S5SS-5

	RESULT	QUAL	UNITS
ALUMINUM	2250		MG/KG
ANTIMONY	0.71	U	MG/KG
ARSENIC	8.3		MG/KG
BARIUM	57		MG/KG
BERYLLIUM	0.15	U	MG/KG
CADMIUM	20.5		MG/KG
CALCIUM	312000	R	MG/KG
CHROMIUM	372		MG/KG
COBALT	2.3		MG/KG
COPPER	19.4		MG/KG
CYANIDE	0.11	U	MG/KG
IRON	3590		MG/KG
LEAD	324		MG/KG
MAGNESIUM	10700		MG/KG
MANGANESE	34.2		MG/KG
MERCURY	0.03		MG/KG
NICKEL	7		MG/KG
POTASSIUM	432		MG/KG
SELENIUM	0.71	U	MG/KG
SILVER	1.4		MG/KG
SODIUM	1940		MG/KG
THALLIUM	0.71	U	MG/KG
VANADIUM	8.2		MG/KG
ZINC	1320		MG/KG

Sample Number: S5SS6
Sample Date: 9/29/96
Laboratory ID: 9609580-08
QC Type: NORMAL
% Moisture: 77
Location: S5SS-6

	RESULT	QUAL	UNITS
ALUMINUM	3040		MG/KG
ANTIMONY	1.7	U	MG/KG
ARSENIC	4.7		MG/KG
BARIUM	12.8		MG/KG
BERYLLIUM	0.08	U	MG/KG
CADMIUM	1.2	U	MG/KG
CALCIUM	274000	R	MG/KG
CHROMIUM	16.5		MG/KG
COBALT	0.83	U	MG/KG
COPPER	10.5		MG/KG
CYANIDE	0.3	U	MG/KG
IRON	1710		MG/KG
LEAD	30.1		MG/KG
MAGNESIUM	20400		MG/KG
MANGANESE	19.8		MG/KG
MERCURY	0.07	U	MG/KG
NICKEL	3.5		MG/KG
POTASSIUM	1970		MG/KG
SELENIUM	1.7	U	MG/KG
SILVER	0.83	U	MG/KG
SODIUM	42500		MG/KG
THALLIUM	1.7	U	MG/KG
VANADIUM	7.1		MG/KG
ZINC	24.6		MG/KG

ORGANIC DATA VALIDATION

INTERNAL CORRESPONDENCE

TO:	CHUCK BRYAN	DATE:	FEBRUARY 10, 1997.
FROM:	EDWARD A. INABINETT	COPIES:	DV FILE

SUBJECT: ORGANIC DATA REVIEW - VOA/SVOA/PEST/PCB/HERB
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG 69580S

SAMPLES: 20/Soil:

B7SS-01	S4SS-7	I7SS-10	I7SS-5
B7SS-02	S4DPSS	I7SS-09	I7SS-03
S4SS-04	S5SS-6	I7SS-08	I7SS-02
S4SS-5	S5SS-4	I7SS-07	S5SS-3
S4SS-6	S5DPSS	I7SS-06	S5SS-5

The sample set for the CTO 007 NAS Key West site, SDG 69580S, consists of twenty (20) soil environmental samples. All samples were analyzed for Appendix IX volatile and semivolatile compounds, plus the samples were also analyzed for Target Compound List (TCL) pesticide/PCB and herbicide organic compounds. The field crew designated sample S4SB-2 for Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis. Two field duplicate pairs were included in this SDG(S4DPSS/S4SS-7, S5DPSS/S5SS-5).

The samples were collected by Brown and Root Environmental on September 27th, 29th and 30th, 1996 and analyzed by General Engineering Laboratories, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. Samples B7SS-01 and B7SS-02 were analyzed for volatile aromatic compounds using EPA Method 602. Other analyses were conducted using EPA SW-846 Methods 8240, 8270, 8080, and 8150 analytical and reporting protocols. The data were evaluated according to the following parameters:

* • Holding times
* • Initial and continuing calibrations
* • Laboratory and field blank analyses
* • Compound Quantitation
* • Field Duplicate Precision

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Volatiles

The laboratory method blank analysis yielded the following contaminants at the maximum concentration indicated. This affected samples S4DPSS, S4SS-4, S4SS-5, S4SS-6, S4SS-7, S5DPSS, S5SS-3, S5SS-4, S5SS-5, and S5SS-6.

Compound	Maximum Concentration	Action Level
methylene chloride	0.69 µg/Kg	6.9 µg/Kg
toluene	0.28 µg/Kg	1.4 µg/Kg

Percent moisture, sample aliquot size, and dilution factors were considered prior to the application of the action level. The positive results for methylene chloride and toluene reported above the detection limit but below the action level were qualified as undetected, "U". Positive results for methylene chloride and toluene found below the detection limit have been deleted and replaced by the detection limit value, then qualified as undetected, "U". There were samples where toluene was not detected even though blank contamination for toluene was reported. In these instances, no action was taken for toluene.

The laboratory method blank analysis for EPA Method 602 yielded the following contaminant at the maximum concentration indicated. This affected samples B7SS-01 and B7SS-02.

Compound	Maximum Concentration	Action Level
toluene	1.4 µg/Kg	7 µg/Kg

Percent moisture, sample aliquot size, and dilution factors were considered prior to the application of the action level. The positive results for toluene reported above the detection limit but below the action level were qualified as undetected, "U". Positive results for toluene found below the detection limit have been deleted and replaced by the detection limit value, then qualified as undetected, "U".

The inital calibration Relative Response Factor (RRF) for 2-chloro-1,3-butadiene was less than 0.05. Failure to meet this quality control criteria indicates that the laboratory's instruments could not achieve satisfactory sensitivity for this compound, and therefore, the associated positive and nondetected results for this compound is severely compromised. Only nondetected results were reported for this compound in the affected samples and these nondetects are considered to be unreliable and are rejected, "UR". This affected samples S4DPSS, S4SS-4, S4SS-5, S4SS-6, S4SS-7, S5DPSS, S5SS-3, S5SS-4, S5SS-5, and S5SS-6.

The continuing calibration Relative Response Factors (RRFs) for acrolein, 2-chloro-1,3-butadiene, methacrylonitrile, isobutyl alcohol, and ethyl cyanide were less than 0.05. Failure to meet this quality control criteria indicates that the laboratory's instruments could not achieve satisfactory sensitivity for these compounds, and therefore, the associated positive and nondetected results for these compounds are severely compromised. Only nondetected results were reported for these compounds in the affected samples and these nondetects are considered to be unreliable and are rejected, "UR". This affected samples S4DPSS, S4SS-4, S4SS-5, S4SS-6, S4SS-7, S5DPSS, S5SS-3, S5SS-4, S5SS-5, and S5SS-6.

Poor field duplicate precision was noted in the field duplicate pair S4SS-7/S4DPSS for tetrachloroethene. No action is taken based on poor field duplicate precision.

No other problems were noted.

Semivolatiles

Surrogate percent recoveries for samples S4SS-4, S4SS-5, and S4DPSS were reported as less than 10% in at least one column. As a result, the laboratory re-extracted and reanlayzed these samples, however the re-extraction was performed outside of the 14 day holding period. Since the original analyses would have been considered unreliable, the reanalyses were chosen for validation. But due to the holding time being exceeded for the reanalyses, positive and nondetected results for these samples were estimated ,"J" and "UJ" respectively.

No other problems were noted.

Pesticide/PCBs

Samples B7SS-01, I7SS-03, and I7SS-05 had %Ds greater than 100% between positive results on columns 1 and 2 for several pesticide compounds. Positive results for these compounds were qualified as estimated "J".

The laboratory qualifier "P" was removed from all target compound data with a %D above 25% and less than 100% between positive results on columns 1 and 2.

Sample I7SS-05 was analyzed undiluted. However, the concentration for 4,4'-DDE and 4,4'-DDT exceeded the linear calibration range of the instrument. As a result, the laboratory reanalyzed this sample at a 4-fold dilution. The original data, with the exception of the positive result for 4,4'-DDE and 4,4'DDT, are used. The diluted results for 4,4'-DDE and 4,4'-DDT are used. No further action was taken.

No other problems were noted.

Herbicides

The holding time from date of collection to date of extraction was exceeded in samples B7SS-01 and B7SS-02. Both samples reported nondetected results for all compounds. These results were qualified as estimated "UJ".

No other problems were noted.

Additional Comments

None.

Executive Summary

Laboratory Performance: Several pesticide/PCB compounds had high %Ds between positive results on columns 1 and 2. Several re-extractions and reanalyses were performed by the laboratory.

Other Factors Affecting Data Quality: Laboratory method blank analysis yielded contaminants. Initial and continuing calibration relative response factors were less than 0.05 for several volitale compounds. Surrogate percent recoveries were reported as less than 10% for several samples. One sample required dilution as a result of concentrations of two pesticide compounds exceeding the linear calibration range of the instrument. Holding times were exceeded for two samples analyzed for herbicides.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Brown and Root Environmental

Edward A. Inabinett
Engineer/Data Validator

Brown and Root Environmental

Arnold C. Lamb
District Quality Assurance Manager

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

NAS KEY WEST

SDG 69580S

TABLE 1 - RECOMMENDATION SUMMARY

Sample No.	VOA			BNA			PEST/PCB			HERB		
B7SS-01	A[1]							J[2,3,12]			J[9]	
B7SS-02	A[1]							J[4]			J[9]	
S4SS-4	A[2]	J[12]	R[1,2]		J[1,12]							
S4SS-5	A[2]	J[12]	R[1,2]		J[1]							
S4SS-6	A[2]	J[12]	R[1,2]									
S4SS-7	A[2]	J[12]	R[1,2]									
S4DPSS	A[2]	J[12]	R[1,2]		J[1]							
S5SS-3	A[2]		R[1,2]									
S5SS-4	A[2]	J[12]	R[1,2]									
S5SS-5	A[2]	J[12]	R[1,2]									
S5DPSS	A[2]		R[1,2]		J[12]							
S5SS-6		J[12]	R[1,2]									
I7SS-02								J[7]				
I7SS-03								J[5,6,12]				
I7SS-05								J[7,8]				
I7SS-06												
I7SS-07								J[11,12]				
I7SS-08								J[10]				
I7SS-09								J[10]				
I7SS-10												

If the field is left blank, the qualifier is A - Accept all data.

A[1] - Accept data, but change positive results for toluene to a revised detection limit and quality as nondetected "U" as a result of laboratory method blank contamination.

A[2] - Accept data, but change positive results for methylene chloride and toluene to a revised detection limit and quality as nondetected "U" as a result of laboratory method blank contamination.

J[1] - Accept data, but qualify positive and nondetected results for semivolatile compounds as as estimated "J" and "UJ" as a result of holding times being exceeded.

J^2 - Accept data, but qualify positive results for 4,4'-DDE as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^3 - Accept data, but remove laboratory qualifier "P" for gamma-BHC as a result of %D greater than 25% and less than 100% between positive results on columns 1 and 2.

J^4 - Accept data, but remove laboratory qualifier "P" for methoxychlor as a result of %D greater than 25% and less than 100% between positive results on columns 1 and 2.

J^5 - Accept data, but qualify positive results for heptachlor as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^6 - Accept data, but qualify positive results for endosulfan I as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^7 - Accept data, but remove laboratory qualifier "P" for 4,4'-DDT as a result of %D greater than 25% and less than 100% between positive results on columns 1 and 2.

J^8 - Accept data, but qualify positive results for aroclor 1254 as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^9 - Accept data, but qualify positive and nondetected results for compounds as as estimated "J" and "UJ" as a result of holding times being exceeded.

J^{10} - Accept data, but qualify positive results for gamma-BHC as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{11} - Accept data, but remove laboratory qualifier "P" for 4,4'-DDE as a result of %D greater than 25% and less than 100% between positive results on columns 1 and 2.

J^{12} - Positive results reported less than the CRQL were estimated "J".

R^1 - Reject "UR" nondetected results for 2-chloro-1,3-butadiene as a result of initial and continuing calibration relative response factors less than 0.050.

R^2 - Reject "UR" nondetected results for acrolein, methacrylonitrile, isobutyl alcohol, and ethyl cyanide as a result of continuing calibration relative response factors less than 0.050.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69580S

SEMIVOLATILES

Sample Number: B7SS-01
Sample Date: 9/27/96
Laboratory ID: 9609580-01
QC Type: NORMAL
% Moisture: 56
Location: B7SS-1

	RESULT	QUAL	UNITS
,2,4-TRICHLOROBENZENE	739	U	UG/KG
,4-DINITROTOLUENE	739	U	UG/KG
CENAPHTHENE	739	U	UG/KG
CENAPHTHYLENE	739	U	UG/KG
NTHRACENE	739	U	UG/KG
ENZO(A)ANTHRACENE	739	U	UG/KG
ENZO(A)PYRENE	739	U	UG/KG
ENZO(B)FLUORANTHENE	739	U	UG/KG
ENZO(G,H,I)PERYLENE	739	U	UG/KG
ENZO(K)FLUORANTHENE	739	U	UG/KG
HRYSENE	739	U	UG/KG
IBENZO(A,H)ANTHRACENE	739	U	UG/KG
.UORANTHENE	739	U	UG/KG
.UORENE	739	U	UG/KG
DENO(1,2,3-CD) PYRENE	739	U	UG/KG
NITROSO-DI-N-PROPYLAMINE	739	U	UG/KG
APHTHALENE	739	U	UG/KG
HENANTHRENE	739	U	UG/KG
YRENE	739	U	UG/KG

Sample Number: B7SS-02
Sample Date: 9/27/96
Laboratory ID: 9609580-02
QC Type: NORMAL
% Moisture: 68
Location: B7SS-2

	RESULT	QUAL	UNITS
ACENAPHTHENE	1040	U	UG/KG
ACENAPHTHYLENE	1040	U	UG/KG
ANTHRACENE	1040	U	UG/KG
BENZO(A)ANTHRACENE	1040	U	UG/KG
BENZO(A)PYRENE	1040	U	UG/KG
BENZO(B)FLUORANTHENE	1040	U	UG/KG
BENZO(G,H,I)PERYLENE	1040	U	UG/KG
BENZO(K)FLUORANTHENE	1040	U	UG/KG
CHRYSENE	1040	U	UG/KG
DIBENZO(A,H)ANTHRACENE	1040	U	UG/KG
FLUORANTHENE	1040	U	UG/KG
FLUORENE	1040	U	UG/KG
INDENO(1,2,3-CD) PYRENE	1040	U	UG/KG
NAPHTHALENE	1040	U	UG/KG
PHENANTHRENE	1040	U	UG/KG
PYRENE	1040	U	UG/KG

Sample Number: S4DPSSRE1
Sample Date: 9/29/96
Laboratory ID: 9609580-07
QC Type: NORMAL
% Moisture: 37
Location: S4DPSS

	RESULT	QUAL	UNIT
1,2,4,5-TETRACHLOROBENZENE	521	UJ	UG/K
1,2,4-TRICHLOROBENZENE	521	UJ	UG/K
1,2-DICHLOROBENZENE	521	UJ	UG/K
1,3,5-TRINITROBENZENE	2610	UJ	UG/K
1,3-DICHLOROBENZENE	521	UJ	UG/K
1,3-DINITROBENZENE	521	UJ	UG/K
1,4-DICHLOROBENZENE	521	UJ	UG/K
1,4-DIOXANE	521	UJ	UG/K
1,4-NAPHTHOQUINONE	521	UJ	UG/K
1-NAPHTHYLAMINE	521	UJ	UG/K
2,3,4,6-TETRACHLOROPHENOL	521	UJ	UG/K
2,4,5-TRICHLOROPHENOL	521	UJ	UG/K
2,4,6-TRICHLOROPHENOL	521	UJ	UG/K
2,4-DICHLOROPHENOL	521	UJ	UG/K
2,4-DIMETHYLPHENOL	521	UJ	UG/K
2,4-DINITROPHENOL	1040	UJ	UG/K
2,4-DINITROTOLUENE	521	UJ	UG/K
2,6-DICHLOROPHENOL	521	UJ	UG/K
2,6-DINITROTOLUENE	521	UJ	UG/K
2-ACETYLAMINOFLUORENE	521	UJ	UG/K
2-CHLORONAPHTHALENE	521	UJ	UG/K
2-CHLOROPHENOL	521	UJ	UG/K
2-METHYL-4,6-DINITROPHENOL	521	UJ	UG/K
2-METHYLNAPHTHALENE	521	UJ	UG/K
2-METHYLPHENOL	521	UJ	UG/K
2-NAPHTHYLAMINE	521	UJ	UG/K
2-NITROANILINE	521	UJ	UG/K
2-NITROPHENOL	521	UJ	UG/K
2-PICOLINE	521	UJ	UG/K
3,3'-DICHLOROBENZIDINE	2610	UJ	UG/K
3,3'-DIMETHYLBENZIDINE	2610	UJ	UG/K
3-METHYLCHOLANTHRENE	521	UJ	UG/K
3-NITROANILINE	521	UJ	UG/K

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GENERAL ENGINEERING LABS

SDG: 69580S

SEMIVOLATILES

-AMINOBIPHENYL	521	UJ	UG/KG
-BROMOPHENYL PHENYL ETHER	521	UJ	UG/KG
-CHLORO-3-METHYLPHENOL	521	UJ	UG/KG
-CHLOROANILINE	521	UJ	UG/KG
-CHLOROPHENYL PHENYL ETHER	521	UJ	UG/KG
-NITROANILINE	521	UJ	UG/KG
-NITROPHENOL	1040	UJ	UG/KG
-NITROQUINOLINE-1-OXIDE	521	UJ	UG/KG
-NITRO-O-TOLUIDINE	521	UJ	UG/KG
,12-DIMETHYLBENZ(A)ANTHRACENE	521	UJ	UG/KG
,A-DIMETHYLPHENETHYLAMINE	521	UJ	UG/KG
CENAPHTHENE	521	UJ	UG/KG
CENAPHTHYLENE	521	UJ	UG/KG
CETOPHENONE	521	UJ	UG/KG
NILINE	521	UJ	UG/KG
NTHRACENE	521	UJ	UG/KG
RAMITE	521	UJ	UG/KG
ENZO(A)ANTHRACENE	521	UJ	UG/KG
ENZO(A)PYRENE	521	UJ	UG/KG
ENZO(B)FLUORANTHENE	521	UJ	UG/KG
ENZO(G,H,I)PERYLENE	521	UJ	UG/KG
ENZO(K)FLUORANTHENE	521	UJ	UG/KG
ENZYL ALCOHOL	521	UJ	UG/KG
S(2-CHLOROETHOXY)METHANE	521	UJ	UG/KG
S(2-CHLOROETHYL)ETHER	521	UJ	UG/KG
S(2-ETHYLHEXYL)PHTHALATE	521	UJ	UG/KG
TYL BENZYL PHTHALATE	521	UJ	UG/KG
LOROBENZILATE	2610	UJ	UG/KG
RYSENE	521	UJ	UG/KG
N-BUTYL PHTHALATE	521	UJ	UG/KG
N-OCTYL PHTHALATE	521	UJ	UG/KG
LLATE	521	UJ	UG/KG
ENZO(A,H)ANTHRACENE	521	UJ	UG/KG
ENZOFURAN	521	UJ	UG/KG
THYL PHTHALATE	521	UJ	UG/KG
ETHOATE	2610	UJ	UG/KG
ETHYL PHTHALATE	521	UJ	UG/KG
OSEB	521	UJ	UG/KG
HENYLAMINE	521	UJ	UG/KG
ULFOTON	521	UJ	UG/KG
YL METHACRYLAT	521	UJ	UG/KG

ETHYL METHANESULFONATE	521	UJ	UG/KG
FAMPHUR	521	UJ	UG/KG
FLUORANTHENE	521	UJ	UG/KG
FLUORENE	521	UJ	UG/KG
HEXACHLOROBENZENE	521	UJ	UG/KG
HEXACHLOROBUTADIENE	521	UJ	UG/KG
HEXACHLOROCYCLOPENTADIENE	521	UJ	UG/KG
HEXACHLOROETHANE	521	UJ	UG/KG
HEXACHLOROPROPENE	521	UJ	UG/KG
INDENO(1,2,3-CD) PYRENE	521	UJ	UG/KG
ISODRIN	521	UJ	UG/KG
ISOPHORONE	521	UJ	UG/KG
ISOSAFROLE	521	UJ	UG/KG
KEPONE	521	UJ	UG/KG
METHAPYRILENE	2610	UJ	UG/KG
METHYL METHANESULFONATE	521	UJ	UG/KG
N-NITROSO-DI-N-PROPYLAMINE	521	UJ	UG/KG
N-NITROSODI-N-BUTYLAMINE	521	UJ	UG/KG
N-NITROSODIETHYLAMINE	521	UJ	UG/KG
N-NITROSODIMETHYLAMINE	521	UJ	UG/KG
N-NITROSODIPHENYLAMINE	521	UJ	UG/KG
N-NITROSOMETHYLETHYLAMINE	521	UJ	UG/KG
N-NITROSOMORPHOLINE	521	UJ	UG/KG
N-NITROSOPIPERIDINE	521	UJ	UG/KG
N-NITROSOPYRROLIDINE	521	UJ	UG/KG
NAPHTHALENE	521	UJ	UG/KG
NITROBENZENE	521	UJ	UG/KG
O,O,O-TRIETHYLPHOSPHOROTHIOATE	521	UJ	UG/KG
O-TOLUIDINE	521	UJ	UG/KG
P-CRESOL	521	UJ	UG/KG
P-DIMETHYLAMINOAZOBENZENE	521	UJ	UG/KG
P-PHENYLENEDIAMINE	1040	UJ	UG/KG
PENTACHLOROBENZENE	521	UJ	UG/KG
PENTACHLOROETHANE	521	UJ	UG/KG
PENTACHLORONITROBENZENE	521	UJ	UG/KG
PENTACHLOROPHENOL	521	UJ	UG/KG
PHENACETIN	521	UJ	UG/KG
PHENANTHRENE	521	UJ	UG/KG
PHENOL	521	UJ	UG/KG
PRONAMIDE	[illegible]	UJ	UG/KG

PYRENE	521	UJ	UG/K
PYRIDINE	521	UJ	UG/K
SAFROLE	521	UJ	UG/K
SULFOTEP	521	UJ	UG/K
THIONAZIN	521	UJ	UG/K

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GENERAL ENGINEERING LABS

SDG: 69580S

SEMIVOLATILES

Sample Number: S4SS-4
Sample Date: 9/29/96
Laboratory ID: 9609580-03
QC Type: NORMAL
% Moisture: 64
Location: S4SS-4

	RESULT	QUAL	UNITS
,2,4,5-TETRACHLOROBENZENE	916	U	UG/KG
,2,4-TRICHLOROBENZENE	916	U	UG/KG
,2-DICHLOROBENZENE	916	U	UG/KG
,3,5-TRINITROBENZENE	4580	U	UG/KG
3-DICHLOROBENZENE	916	U	UG/KG
3-DINITROBENZENE	916	U	UG/KG
4-DICHLOROBENZENE	916	U	UG/KG
4-DIOXANE	916	U	UG/KG
4-NAPHTHOQUINONE	916	U	UG/KG
NAPHTHYLAMINE	916	U	UG/KG
3,4,6-TETRACHLOROPHENOL	916	U	UG/KG
4,5-TRICHLOROPHENOL	916	U	UG/KG
4,6-TRICHLOROPHENOL	916	U	UG/KG
4-DICHLOROPHENOL	916	U	UG/KG
4-DIMETHYLPHENOL	916	U	UG/KG
4-DINITROPHENOL	1830	U	UG/KG
4-DINITROTOLUENE	916	U	UG/KG
6-DICHLOROPHENOL	916	U	UG/KG
6-DINITROTOLUENE	916	U	UG/KG
ACETYLAMINOFLUORENE	916	U	UG/KG
CHLORONAPHTHALENE	916	U	UG/KG
CHLOROPHENOL	916	U	UG/KG
METHYL-4,6-DINITROPHENOL	916	U	UG/KG
METHYLNAPHTHALENE	916	U	UG/KG
METHYLPHENOL	916	U	UG/KG
NAPHTHYLAMINE	916	U	UG/KG
NITROANILINE	916	U	UG/KG
NITROPHENOL	916	U	UG/KG
PICOLINE	916	U	UG/KG
'-DICHLOROBENZIDINE	1830	U	UG/KG
'-DIMETHYLBENZIDINE	4580	U	UG/KG
METHYLCHOLANTHRENE	916	U	UG/KG
NITROANILINE	916	U	UG/KG
4-AMINOBIPHENYL	916	U	UG/KG
4-BROMOPHENYL PHENYL ETHER	916	U	UG/KG
4-CHLORO-3-METHYLPHENOL	916	U	UG/KG
4-CHLOROANILINE	916	U	UG/KG
4-CHLOROPHENYL PHENYL ETHER	916	U	UG/KG
4-NITROANILINE	916	U	UG/KG
4-NITROPHENOL	916	U	UG/KG
4-NITROQUINOLINE-1-OXIDE	916	U	UG/KG
5-NITRO-O-TOLUIDINE	916	U	UG/KG
7,12-DIMETHYLBENZ(A)ANTHRACENE	916	U	UG/KG
A,A-DIMETHYLPHENETHYLAMINE	916	U	UG/KG
ACENAPHTHENE	916	U	UG/KG
ACENAPHTHYLENE	916	U	UG/KG
ACETOPHENONE	916	U	UG/KG
ANILINE	916	U	UG/KG
ANTHRACENE	916	U	UG/KG
ARAMITE	916	U	UG/KG
BENZO(A)ANTHRACENE	916	U	UG/KG
BENZO(A)PYRENE	916	U	UG/KG
BENZO(B)FLUORANTHENE	916	U	UG/KG
BENZO(G,H,I)PERYLENE	916	U	UG/KG
BENZO(K)FLUORANTHENE	916	U	UG/KG
BENZYL ALCOHOL	916	U	UG/KG
BIS(2-CHLOROETHOXY)METHANE	916	U	UG/KG
BIS(2-CHLOROETHYL)ETHER	916	U	UG/KG
BIS(2-ETHYLHEXYL)PHTHALATE	916	U	UG/KG
BUTYL BENZYL PHTHALATE	916	U	UG/KG
CHLOROBENZILATE	4580	U	UG/KG
CHRYSENE	916	U	UG/KG
DI-N-BUTYL PHTHALATE	916	U	UG/KG
DI-N-OCTYL PHTHALATE	916	U	UG/KG
DIALLATE	916	U	UG/KG
DIBENZO(A,H)ANTHRACENE	916	U	UG/KG
DIBENZOFURAN	916	U	UG/KG
DIETHYL PHTHALATE	916	U	UG/KG
DIMETHOATE	4580	U	UG/KG
DIMETHYL PHTHALATE	916	U	UG/KG
DINOSEB	916	U	UG/KG
DIPHENYLAMINE	916	U	UG/KG
DISULFOTON	916	U	UG/KG
ETHYL METHACRYLATE	916	U	UG/KG
ETHYL METHANESULFONATE	916	U	UG/K
FAMPHUR	916	U	UG/K
FLUORANTHENE	916	U	UG/K
FLUORENE	916	U	UG/K
HEXACHLOROBENZENE	916	U	UG/K
HEXACHLOROBUTADIENE	916	U	UG/K
HEXACHLOROCYCLOPENTADIENE	916	U	UG/K
HEXACHLOROETHANE	916	U	UG/K
HEXACHLOROPROPENE	916	U	UG/K
INDENO(1,2,3-CD) PYRENE	916	U	UG/K
ISODRIN	916	U	UG/K
ISOPHORONE	916	U	UG/K
ISOSAFROLE	916	U	UG/K
KEPONE	916	U	UG/K
METHAPYRILENE	4580	U	UG/K
METHYL METHANESULFONATE	916	U	UG/K
N-NITROSO-DI-N-PROPYLAMINE	916	U	UG/K
N-NITROSODI-N-BUTYLAMINE	916	U	UG/K
N-NITROSODIETHYLAMINE	916	U	UG/K
N-NITROSODIMETHYLAMINE	916	U	UG/K
N-NITROSODIPHENYLAMINE	916	U	UG/K
N-NITROSOMETHYLETHYLAMINE	916	U	UG/K
N-NITROSOMORPHOLINE	916	U	UG/K
N-NITROSOPIPERIDINE	916	U	UG/K
N-NITROSOPYRROLIDINE	916	U	UG/K
NAPHTHALENE	916	U	UG/K
NITROBENZENE	916	U	UG/K
O,O,O-TRIETHYLPHOSPHOROTHIOATE	916	U	UG/K
O-TOLUIDINE	916	U	UG/K
P-CRESOL	916	U	UG/K
P-DIMETHYLAMINOAZOBENZENE	916	U	UG/K
P-PHENYLENEDIAMINE	1830	U	UG/K
PENTACHLOROBENZENE	916	U	UG/K
PENTACHLOROETHANE	916	U	UG/K
PENTACHLORONITROBENZENE	916	U	UG/K
PENTACHLOROPHENOL	916	U	UG/K
PHENACETIN	916	U	UG/K
PHENANTHRENE	916	U	UG/K
PHENOL	916	U	UG/K
PRONAMIDE	916	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69580S

SEMIVOLATILES

PYRENE	916	U	UG/KG
PYRIDINE	916	U	UG/KG
SAFROLE	916	U	UG/KG
SULFOTEP	916	U	UG/KG
THIONAZIN	916	U	UG/KG

Sample Number: S4SS-5
Sample Date: 9/29/96
Laboratory ID: 9609580-04
QC Type: NORMAL
% Moisture: 50
Location: S4SS-5

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	656	U	UG/KG
1,2,4-TRICHLOROBENZENE	656	U	UG/KG
1,2-DICHLOROBENZENE	656	U	UG/KG
1,3,5-TRINITROBENZENE	3280	U	UG/KG
1,3-DICHLOROBENZENE	656	U	UG/KG
1,3-DINITROBENZENE	656	U	UG/KG
1,4-DICHLOROBENZENE	656	U	UG/KG
1,4-DIOXANE	656	U	UG/KG
1,4-NAPHTHOQUINONE	656	U	UG/KG
1-NAPHTHYLAMINE	656	U	UG/KG
2,3,4,6-TETRACHLOROPHENOL	656	U	UG/KG
2,4,5-TRICHLOROPHENOL	656	U	UG/KG
2,4,6-TRICHLOROPHENOL	656	U	UG/KG
2,4-DICHLOROPHENOL	656	U	UG/KG
2,4-DIMETHYLPHENOL	656	U	UG/KG
2,4-DINITROPHENOL	1310	U	UG/KG
2,4-DINITROTOLUENE	656	U	UG/KG
2,6-DICHLOROPHENOL	656	U	UG/KG
2,6-DINITROTOLUENE	656	U	UG/KG
2-ACETYLAMINOFLUORENE	656	U	UG/KG
2-CHLORONAPHTHALENE	656	U	UG/KG
2-CHLOROPHENOL	656	U	UG/KG
2-METHYL-4,6-DINITROPHENOL	656	U	UG/KG
2-METHYLNAPHTHALENE	656	U	UG/KG
2-METHYLPHENOL	656	U	UG/KG
2-NAPHTHYLAMINE	656	U	UG/KG
2-NITROANILINE	656	U	UG/KG
2-NITROPHENOL	656	U	UG/KG
2-PICOLINE	656	U	UG/KG
3,3'-DICHLOROBENZIDINE	1310	U	UG/KG
3,3'-DIMETHYLBENZIDINE	3280	U	UG/KG
3-METHYLCHOLANTHRENE	656	U	UG/KG
3-NITROANILINE		U	UG/KG
4-AMINOBIPHENYL	656	U	UG/K
4-BROMOPHENYL PHENYL ETHER	656	U	UG/K
4-CHLORO-3-METHYLPHENOL	656	U	UG/K
4-CHLOROANILINE	656	U	UG/K
4-CHLOROPHENYL PHENYL ETHER	656	U	UG/K
4-NITROANILINE	656	U	UG/K
4-NITROPHENOL	656	U	UG/K
4-NITROQUINOLINE-1-OXIDE	656	U	UG/K
5-NITRO-O-TOLUIDINE	656	U	UG/K
7,12-DIMETHYLBENZ(A)ANTHRACENE	656	U	UG/K
A,A-DIMETHYLPHENETHYLAMINE	656	U	UG/K
ACENAPHTHENE	656	U	UG/K
ACENAPHTHYLENE	656	U	UG/K
ACETOPHENONE	656	U	UG/K
ANILINE	656	U	UG/K
ANTHRACENE	656	U	UG/K
ARAMITE	656	U	UG/K
BENZO(A)ANTHRACENE	656	U	UG/K
BENZO(A)PYRENE	656	U	UG/K
BENZO(B)FLUORANTHENE	656	U	UG/K
BENZO(G,H,I)PERYLENE	656	U	UG/K
BENZO(K)FLUORANTHENE	656	U	UG/K
BENZYL ALCOHOL	656	U	UG/K
BIS(2-CHLOROETHOXY)METHANE	656	U	UG/K
BIS(2-CHLOROETHYL)ETHER	656	U	UG/K
BIS(2-ETHYLHEXYL)PHTHALATE	656	U	UG/K
BUTYL BENZYL PHTHALATE	656	U	UG/K
CHLOROBENZILATE	3280	U	UG/K
CHRYSENE	656	U	UG/K
DI-N-BUTYL PHTHALATE	656	U	UG/K
DI-N-OCTYL PHTHALATE	656	U	UG/K
DIALLATE	656	U	UG/K
DIBENZO(A,H)ANTHRACENE	656	U	UG/K
DIBENZOFURAN	656	U	UG/K
DIETHYL PHTHALATE	656	U	UG/K
DIMETHOATE	3280	U	UG/K
DIMETHYL PHTHALATE	656	U	UG/K
DINOSEB	656	U	UG/K
DIPHENYLAMINE	656	U	UG/K
DISULFOTON	656	U	K
ETHYL METHACRYLATE	656	U	K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69580S

SEMIVOLATILES

ETHYL METHANESULFONATE	656	U	UG/KG
AMPHUR	656	U	UG/KG
LUORANTHENE	656	U	UG/KG
LUORENE	656	U	UG/KG
EXACHLOROBENZENE	656	U	UG/KG
EXACHLOROBUTADIENE	656	U	UG/KG
EXACHLOROCYCLOPENTADIENE	656	U	UG/KG
EXACHLOROETHANE	656	U	UG/KG
EXACHLOROPROPENE	656	U	UG/KG
DENO(1,2,3-CD) PYRENE	656	U	UG/KG
SODRIN	656	U	UG/KG
SOPHORONE	656	U	UG/KG
SOSAFROLE	656	U	UG/KG
EPONE	656	U	UG/KG
ETHAPYRILENE	3280	U	UG/KG
ETHYL METHANESULFONATE	656	U	UG/KG
-NITROSO-DI-N-PROPYLAMINE	656	U	UG/KG
-NITROSODI-N-BUTYLAMINE	656	U	UG/KG
-NITROSODIETHYLAMINE	656	U	UG/KG
-NITROSODIMETHYLAMINE	656	U	UG/KG
NITROSODIPHENYLAMINE	656	U	UG/KG
NITROSOMETHYLETHYLAMINE	656	U	UG/KG
NITROSOMORPHOLINE	656	U	UG/KG
NITROSOPIPERIDINE	656	U	UG/KG
NITROSOPYRROLIDINE	656	U	UG/KG
APHTHALENE	656	U	UG/KG
TROBENZENE	656	U	UG/KG
O,O-IETHYLPHOSPHOROTHIOATE	656	U	UG/KG
TOLUIDINE	656	U	UG/KG
CRESOL	656	U	UG/KG
DIMETHYLAMINOAZOBENZENE	656	U	UG/KG
PHENYLENEDIAMINE	1310	U	UG/KG
NTACHLOROBENZENE	656	U	UG/KG
NTACHLOROETHANE	656	U	UG/KG
NTACHLORONITROBENZENE	656	U	UG/KG
NTACHLOROPHENOL	656	U	UG/KG
ENACETIN	656	U	UG/KG
ENANTHRENE	656	U	UG/KG
ENOL	656	U	UG/KG
ONAMIDE	656	U	UG/KG

PYRENE	656	U	UG/KG
PYRIDINE	656	U	UG/KG
SAFROLE	656	U	UG/KG
SULFOTEP	656	U	UG/KG
THIONAZIN	656	U	UG/KG

Sample Number: S4SS-6
Sample Date: 9/29/96
Laboratory ID: 9609580-05
QC Type: NORMAL
% Moisture: 50
Location: S4SS-6

	RESULT	QUAL	UNIT
1,2,4,5-TETRACHLOROBENZENE	662	U	UG/K
1,2,4-TRICHLOROBENZENE	662	U	UG/K
1,2-DICHLOROBENZENE	662	U	UG/K
1,3,5-TRINITROBENZENE	3310	U	UG/K
1,3-DICHLOROBENZENE	662	U	UG/K
1,3-DINITROBENZENE	662	U	UG/K
1,4-DICHLOROBENZENE	662	U	UG/K
1,4-DIOXANE	662	U	UG/K
1,4-NAPHTHOQUINONE	662	U	UG/K
1-NAPHTHYLAMINE	662	U	UG/K
2,3,4,6-TETRACHLOROPHENOL	662	U	UG/K
2,4,5-TRICHLOROPHENOL	662	U	UG/K
2,4,6-TRICHLOROPHENOL	662	U	UG/K
2,4-DICHLOROPHENOL	662	U	UG/K
2,4-DIMETHYLPHENOL	662	U	UG/K
2,4-DINITROPHENOL	1320	U	UG/K
2,4-DINITROTOLUENE	662	U	UG/K
2,6-DICHLOROPHENOL	662	U	UG/K
2,6-DINITROTOLUENE	662	U	UG/K
2-ACETYLAMINOFLUORENE	662	U	UG/K
2-CHLORONAPHTHALENE	662	U	UG/K
2-CHLOROPHENOL	662	U	UG/K
2-METHYL-4,6-DINITROPHENOL	662	U	UG/K
2-METHYLNAPHTHALENE	662	U	UG/K
2-METHYLPHENOL	662	U	UG/K
2-NAPHTHYLAMINE	662	U	UG/K
2-NITROANILINE	662	U	UG/K
2-NITROPHENOL	662	U	UG/K
2-PICOLINE	662	U	UG/K
3,3'-DICHLOROBENZIDINE	1320	U	UG/K
3,3'-DIMETHYLBENZIDINE	3310	U	UG/K
3-METHYLCHOLANTHRENE	662	U	UG/K
3-NITROANILINE	662	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69580S

SEMIVOLATILES

4-AMINOBIPHENYL	662	U	UG/KG
4-BROMOPHENYL PHENYL ETHER	662	U	UG/KG
4-CHLORO-3-METHYLPHENOL	662	U	UG/KG
4-CHLOROANILINE	662	U	UG/KG
4-CHLOROPHENYL PHENYL ETHER	662	U	UG/KG
4-NITROANILINE	662	U	UG/KG
4-NITROPHENOL	662	U	UG/KG
4-NITROQUINOLINE-1-OXIDE	662	U	UG/KG
5-NITRO-O-TOLUIDINE	662	U	UG/KG
7,12-DIMETHYLBENZ(A)ANTHRACENE	662	U	UG/KG
A,A-DIMETHYLPHENETHYLAMINE	662	U	UG/KG
ACENAPHTHENE	662	U	UG/KG
ACENAPHTHYLENE	662	U	UG/KG
ACETOPHENONE	662	U	UG/KG
ANILINE	662	U	UG/KG
ANTHRACENE	662	U	UG/KG
ARAMITE	662	U	UG/KG
BENZO(A)ANTHRACENE	662	U	UG/KG
BENZO(A)PYRENE	662	U	UG/KG
BENZO(B)FLUORANTHENE	662	U	UG/KG
BENZO(G,H,I)PERYLENE	662	U	UG/KG
BENZO(K)FLUORANTHENE	662	U	UG/KG
BENZYL ALCOHOL	662	U	UG/KG
BIS(2-CHLOROETHOXY)METHANE	662	U	UG/KG
BIS(2-CHLOROETHYL)ETHER	662	U	UG/KG
BIS(2-ETHYLHEXYL)PHTHALATE	662	U	UG/KG
BUTYL BENZYL PHTHALATE	662	U	UG/KG
CHLOROBENZILATE	3310	U	UG/KG
CHRYSENE	662	U	UG/KG
DI-N-BUTYL PHTHALATE	662	U	UG/KG
DI-N-OCTYL PHTHALATE	662	U	UG/KG
DIALLATE	662	U	UG/KG
DIBENZO(A,H)ANTHRACENE	662	U	UG/KG
DIBENZOFURAN	662	U	UG/KG
DIETHYL PHTHALATE	662	U	UG/KG
DIMETHOATE	3310	U	UG/KG
DIMETHYL PHTHALATE	662	U	UG/KG
DINOSEB	662	U	UG/KG
DIPHENYLAMINE	662	U	UG/KG
DISULFOTON	662	U	UG/KG
ETHYL METHACRYL	662	U	UG/KG

ETHYL METHANESULFONATE	662	U	UG/KG
FAMPHUR	662	U	UG/KG
FLUORANTHENE	662	U	UG/KG
FLUORENE	662	U	UG/KG
HEXACHLOROBENZENE	662	U	UG/KG
HEXACHLOROBUTADIENE	662	U	UG/KG
HEXACHLOROCYCLOPENTADIENE	662	U	UG/KG
HEXACHLOROETHANE	662	U	UG/KG
HEXACHLOROPROPENE	662	U	UG/KG
INDENO(1,2,3-CD) PYRENE	662	U	UG/KG
ISODRIN	662	U	UG/KG
ISOPHORONE	662	U	UG/KG
ISOSAFROLE	662	U	UG/KG
KEPONE	662	U	UG/KG
METHAPYRILENE	3310	U	UG/KG
METHYL METHANESULFONATE	662	U	UG/KG
N-NITROSO-DI-N-PROPYLAMINE	662	U	UG/KG
N-NITROSODI-N-BUTYLAMINE	662	U	UG/KG
N-NITROSODIETHYLAMINE	662	U	UG/KG
N-NITROSODIMETHYLAMINE	662	U	UG/KG
N-NITROSODIPHENYLAMINE	662	U	UG/KG
N-NITROSOMETHYLETHYLAMINE	662	U	UG/KG
N-NITROSOMORPHOLINE	662	U	UG/KG
N-NITROSOPIPERIDINE	662	U	UG/KG
N-NITROSOPYRROLIDINE	662	U	UG/KG
NAPHTHALENE	662	U	UG/KG
NITROBENZENE	662	U	UG/KG
O,O,O-TRIETHYLPHOSPHOROTHIOATE	662	U	UG/KG
O-TOLUIDINE	662	U	UG/KG
P-CRESOL	662	U	UG/KG
P-DIMETHYLAMINOAZOBENZENE	662	U	UG/KG
P-PHENYLENEDIAMINE	1320	U	UG/KG
PENTACHLOROBENZENE	662	U	UG/KG
PENTACHLOROETHANE	662	U	UG/KG
PENTACHLORONITROBENZENE	662	U	UG/KG
PENTACHLOROPHENOL	662	U	UG/KG
PHENACETIN	662	U	UG/KG
PHENANTHRENE	662	U	UG/KG
PHENOL	[illegible]	U	UG/KG
PRONAMIDE	[illegible]	U	UG/KG

PYRENE	662	U	UG/K
PYRIDINE	662	U	UG/K
SAFROLE	662	U	UG/K
SULFOTEP	662	U	UG/K
THIONAZIN	662	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69580S

SEMIVOLATILES

Sample Number: S4SS-7
Sample Date: 9/29/96
Laboratory ID: 9609580-06
QC Type: NORMAL
% Moisture: 37
Location: S4SS-7

	RESULT	QUAL	UNITS
,2,4,5-TETRACHLOROBENZENE	518	U	UG/KG
,2,4-TRICHLOROBENZENE	518	U	UG/KG
,2-DICHLOROBENZENE	518	U	UG/KG
,3,5-TRINITROBENZENE	2590	U	UG/KG
,3-DICHLOROBENZENE	518	U	UG/KG
,3-DINITROBENZENE	518	U	UG/KG
,4-DICHLOROBENZENE	518	U	UG/KG
4-DIOXANE	518	U	UG/KG
4-NAPHTHOQUINONE	518	U	UG/KG
NAPHTHYLAMINE	518	U	UG/KG
3,4,6-TETRACHLOROPHENOL	518	U	UG/KG
4,5-TRICHLOROPHENOL	518	U	UG/KG
4,6-TRICHLOROPHENOL	518	U	UG/KG
4-DICHLOROPHENOL	518	U	UG/KG
4-DIMETHYLPHENOL	518	U	UG/KG
4-DINITROPHENOL	1040	U	UG/KG
4-DINITROTOLUENE	518	U	UG/KG
6-DICHLOROPHENOL	518	U	UG/KG
6-DINITROTOLUENE	518	U	UG/KG
ACETYLAMINOFLUORENE	518	U	UG/KG
CHLORONAPHTHALENE	518	U	UG/KG
CHLOROPHENOL	518	U	UG/KG
METHYL-4,6-DINITROPHENOL	518	U	UG/KG
METHYLNAPHTHALENE	518	U	UG/KG
METHYLPHENOL	518	U	UG/KG
NAPHTHYLAMINE	518	U	UG/KG
NITROANILINE	518	U	UG/KG
NITROPHENOL	518	U	UG/KG
PICOLINE	518	U	UG/KG
'-DICHLOROBENZIDINE	1040	U	UG/KG
'-DIMETHYLBENZIDINE	2590	U	UG/KG
METHYLCHOLANTHRENE	518	U	UG/KG
NITROANILINE	518	U	UG/KG
4-AMINOBIPHENYL	518	U	UG/KG
4-BROMOPHENYL PHENYL ETHER	518	U	UG/KG
4-CHLORO-3-METHYLPHENOL	518	U	UG/KG
4-CHLOROANILINE	518	U	UG/KG
4-CHLOROPHENYL PHENYL ETHER	518	U	UG/KG
4-NITROANILINE	518	U	UG/KG
4-NITROPHENOL	518	U	UG/KG
4-NITROQUINOLINE-1-OXIDE	518	U	UG/KG
5-NITRO-O-TOLUIDINE	518	U	UG/KG
7,12-DIMETHYLBENZ(A)ANTHRACENE	518	U	UG/KG
A,A-DIMETHYLPHENETHYLAMINE	518	U	UG/KG
ACENAPHTHENE	518	U	UG/KG
ACENAPHTHYLENE	518	U	UG/KG
ACETOPHENONE	518	U	UG/KG
ANILINE	518	U	UG/KG
ANTHRACENE	518	U	UG/KG
ARAMITE	518	U	UG/KG
BENZO(A)ANTHRACENE	518	U	UG/KG
BENZO(A)PYRENE	518	U	UG/KG
BENZO(B)FLUORANTHENE	518	U	UG/KG
BENZO(G,H,I)PERYLENE	518	U	UG/KG
BENZO(K)FLUORANTHENE	518	U	UG/KG
BENZYL ALCOHOL	518	U	UG/KG
BIS(2-CHLOROETHOXY)METHANE	518	U	UG/KG
BIS(2-CHLOROETHYL)ETHER	518	U	UG/KG
BIS(2-ETHYLHEXYL)PHTHALATE	518	U	UG/KG
BUTYL BENZYL PHTHALATE	518	U	UG/KG
CHLOROBENZILATE	2590	U	UG/KG
CHRYSENE	518	U	UG/KG
DI-N-BUTYL PHTHALATE	518	U	UG/KG
DI-N-OCTYL PHTHALATE	518	U	UG/KG
DIALLATE	518	U	UG/KG
DIBENZO(A,H)ANTHRACENE	518	U	UG/KG
DIBENZOFURAN	518	U	UG/KG
DIETHYL PHTHALATE	518	U	UG/KG
DIMETHOATE	2590	U	UG/KG
DIMETHYL PHTHALATE	518	U	UG/KG
DINOSEB	518	U	UG/KG
DIPHENYLAMINE	518	U	UG/KG
DISULFOTON	518	U	UG/KG
ETHYL METHACRYLATE	518	U	UG/KG
ETHYL METHANESULFONATE	518	U	UG/K
FAMPHUR	518	U	UG/K
FLUORANTHENE	518	U	UG/K
FLUORENE	518	U	UG/K
HEXACHLOROBENZENE	518	U	UG/K
HEXACHLOROBUTADIENE	518	U	UG/K
HEXACHLOROCYCLOPENTADIENE	518	U	UG/K
HEXACHLOROETHANE	518	U	UG/K
HEXACHLOROPROPENE	518	U	UG/K
INDENO(1,2,3-CD) PYRENE	518	U	UG/K
ISODRIN	518	U	UG/K
ISOPHORONE	518	U	UG/K
ISOSAFROLE	518	U	UG/K
KEPONE	518	U	UG/K
METHAPYRILENE	2590	U	UG/K
METHYL METHANESULFONATE	518	U	UG/K
N-NITROSO-DI-N-PROPYLAMINE	518	U	UG/K
N-NITROSODI-N-BUTYLAMINE	518	U	UG/K
N-NITROSODIETHYLAMINE	518	U	UG/K
N-NITROSODIMETHYLAMINE	518	U	UG/K
N-NITROSODIPHENYLAMINE	518	U	UG/K
N-NITROSOMETHYLETHYLAMINE	518	U	UG/K
N-NITROSOMORPHOLINE	518	U	UG/K
N-NITROSOPIPERIDINE	518	U	UG/K
N-NITROSOPYRROLIDINE	518	U	UG/K
NAPHTHALENE	518	U	UG/K
NITROBENZENE	518	U	UG/K
O,O,O-TRIETHYLPHOSPHOROTHIOATE	518	U	UG/K
O-TOLUIDINE	518	U	UG/K
P-CRESOL	518	U	UG/K
P-DIMETHYLAMINOAZOBENZENE	518	U	UG/K
P-PHENYLENEDIAMINE	1040	U	UG/K
PENTACHLOROBENZENE	518	U	UG/K
PENTACHLOROETHANE	518	U	UG/K
PENTACHLORONITROBENZENE	518	U	UG/K
PENTACHLOROPHENOL	518	U	UG/K
PHENACETIN	518	U	UG/K
PHENANTHRENE	518	U	UG/K
PHENOL	518	U	UG/K
PRONAMIDE	518	U	UG/K

:TO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69580S

EMIVOLATILES

YRENE	518	U	UG/KG
YRIDINE	518	U	UG/KG
AFROLE	518	U	UG/KG
ULFOTEP	518	U	UG/KG
HIONAZIN	518	U	UG/KG

Sample Number: S5DPSS
Sample Date: 9/29/96
Laboratory ID: 9609580-12
QC Type: NORMAL
% Moisture: 42
Location: S5DPSS

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	563	U	UG/KG
1,2,4-TRICHLOROBENZENE	563	U	UG/KG
1,2-DICHLOROBENZENE	563	U	UG/KG
1,3,5-TRINITROBENZENE	2820	U	UG/KG
1,3-DICHLOROBENZENE	563	U	UG/KG
1,3-DINITROBENZENE	563	U	UG/KG
1,4-DICHLOROBENZENE	563	U	UG/KG
1,4-DIOXANE	563	U	UG/KG
1,4-NAPHTHOQUINONE	563	U	UG/KG
1-NAPHTHYLAMINE	563	U	UG/KG
2,3,4,6-TETRACHLOROPHENOL	563	U	UG/KG
2,4,5-TRICHLOROPHENOL	563	U	UG/KG
2,4,6-TRICHLOROPHENOL	563	U	UG/KG
2,4-DICHLOROPHENOL	563	U	UG/KG
2,4-DIMETHYLPHENOL	563	U	UG/KG
2,4-DINITROPHENOL	1130	U	UG/KG
2,4-DINITROTOLUENE	563	U	UG/KG
2,6-DICHLOROPHENOL	563	U	UG/KG
2,6-DINITROTOLUENE	563	U	UG/KG
2-ACETYLAMINOFLUORENE	563	U	UG/KG
2-CHLORONAPHTHALENE	563	U	UG/KG
2-CHLOROPHENOL	563	U	UG/KG
2-METHYL-4,6-DINITROPHENOL	563	U	UG/KG
2-METHYLNAPHTHALENE	563	U	UG/KG
2-METHYLPHENOL	563	U	UG/KG
2-NAPHTHYLAMINE	563	U	UG/KG
2-NITROANILINE	563	U	UG/KG
2-NITROPHENOL	563	U	UG/KG
2-PICOLINE	563	U	UG/KG
3,3'-DICHLOROBENZIDINE	2820	U	UG/KG
3,3'-DIMETHYLBENZIDINE	2820	U	UG/KG
3-METHYLCHOLANTHRENE	563	U	UG/KG
3-NITROANILINE	5[illegible]	U	UG/KG
4-AMINOBIPHENYL	563	U	UG/K
4-BROMOPHENYL PHENYL ETHER	563	U	UG/K
4-CHLORO-3-METHYLPHENOL	563	U	UG/K
4-CHLOROANILINE	563	U	UG/K
4-CHLOROPHENYL PHENYL ETHER	563	U	UG/K
4-NITROANILINE	563	U	UG/K
4-NITROPHENOL	1130	U	UG/K
4-NITROQUINOLINE-1-OXIDE	563	U	UG/K
5-NITRO-O-TOLUIDINE	563	U	UG/K
7,12-DIMETHYLBENZ(A)ANTHRACENE	563	U	UG/K
A,A-DIMETHYLPHENETHYLAMINE	563	U	UG/K
ACENAPHTHENE	563	U	UG/K
ACENAPHTHYLENE	563	U	UG/K
ACETOPHENONE	563	U	UG/K
ANILINE	563	U	UG/K
ANTHRACENE	563	U	UG/K
ARAMITE	563	U	UG/K
BENZO(A)ANTHRACENE	563	U	UG/K
BENZO(A)PYRENE	563	U	UG/K
BENZO(B)FLUORANTHENE	563	U	UG/K
BENZO(G,H,I)PERYLENE	563	U	UG/K
BENZO(K)FLUORANTHENE	563	U	UG/K
BENZYL ALCOHOL	563	U	UG/K
BIS(2-CHLOROETHOXY)METHANE	563	U	UG/K
BIS(2-CHLOROETHYL)ETHER	563	U	UG/K
BIS(2-ETHYLHEXYL)PHTHALATE	459	J	UG/K
BUTYL BENZYL PHTHALATE	470	J	UG/K
CHLOROBENZILATE	2820	U	UG/K
CHRYSENE	563	U	UG/K
DI-N-BUTYL PHTHALATE	563	U	UG/K
DI-N-OCTYL PHTHALATE	563	U	UG/K
DIALLATE	563	U	UG/K
DIBENZO(A,H)ANTHRACENE	563	U	UG/K
DIBENZOFURAN	563	U	UG/K
DIETHYL PHTHALATE	563	U	UG/K
DIMETHOATE	2820	U	UG/K
DIMETHYL PHTHALATE	563	U	UG/K
DINOSEB	563	U	UG/K
DIPHENYLAMINE	563	U	UG/K
DISULFOTON	563	U	[illegible]
ETHYL METHACRYLATE	563	U	[illegible]

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69580S

SEMIVOLATILES

ETHYL METHANESULFONATE	563	U	UG/KG
FAMPHUR	563	U	UG/KG
FLUORANTHENE	563	U	UG/KG
FLUORENE	563	U	UG/KG
HEXACHLOROBENZENE	563	U	UG/KG
HEXACHLOROBUTADIENE	563	U	UG/KG
HEXACHLOROCYCLOPENTADIENE	563	U	UG/KG
HEXACHLOROETHANE	563	U	UG/KG
HEXACHLOROPROPENE	563	U	UG/KG
INDENO(1,2,3-CD) PYRENE	563	U	UG/KG
ISODRIN	563	U	UG/KG
ISOPHORONE	563	U	UG/KG
ISOSAFROLE	563	U	UG/KG
KEPONE	563	U	UG/KG
METHAPYRILENE	2820	U	UG/KG
METHYL METHANESULFONATE	563	U	UG/KG
N-NITROSO-DI-N-PROPYLAMINE	563	U	UG/KG
N-NITROSODI-N-BUTYLAMINE	563	U	UG/KG
N-NITROSODIETHYLAMINE	563	U	UG/KG
N-NITROSODIMETHYLAMINE	563	U	UG/KG
N-NITROSODIPHENYLAMINE	563	U	UG/KG
N-NITROSOMETHYLETHYLAMINE	563	U	UG/KG
N-NITROSOMORPHOLINE	563	U	UG/KG
N-NITROSOPIPERIDINE	563	U	UG/KG
N-NITROSOPYRROLIDINE	563	U	UG/KG
NAPHTHALENE	563	U	UG/KG
NITROBENZENE	563	U	UG/KG
O,O,O-TRIETHYLPHOSPHOROTHIOATE	563	U	UG/KG
O-TOLUIDINE	563	U	UG/KG
P-CRESOL	563	U	UG/KG
P-DIMETHYLAMINOAZOBENZENE	563	U	UG/KG
P-PHENYLENEDIAMINE	1130	U	UG/KG
PENTACHLOROBENZENE	563	U	UG/KG
PENTACHLOROETHANE	563	U	UG/KG
PENTACHLORONITROBENZENE	563	U	UG/KG
PENTACHLOROPHENOL	563	U	UG/KG
PHENACETIN	563	U	UG/KG
PHENANTHRENE	563	U	UG/KG
PHENOL	563	U	UG/KG
PRONAMIDE	563	U	UG/KG

PYRENE	563	U	UG/KG
PYRIDINE	563	U	UG/KG
SAFROLE	563	U	UG/KG
SULFOTEP	563	U	UG/KG
THIONAZIN	563	U	UG/KG

Sample Number: S5SS-3
Sample Date: 9/29/96
Laboratory ID: 9609580-10
QC Type: NORMAL
% Moisture: 66
Location: S5SS-3

	RESULT	QUAL	UNIT
1,2,4,5-TETRACHLOROBENZENE	974	U	UG/K
1,2,4-TRICHLOROBENZENE	974	U	UG/K
1,2-DICHLOROBENZENE	974	U	UG/K
1,3,5-TRINITROBENZENE	4870	U	UG/K
1,3-DICHLOROBENZENE	974	U	UG/K
1,3-DINITROBENZENE	974	U	UG/K
1,4-DICHLOROBENZENE	974	U	UG/K
1,4-DIOXANE	974	U	UG/K
1,4-NAPHTHOQUINONE	974	U	UG/K
1-NAPHTHYLAMINE	974	U	UG/K
2,3,4,6-TETRACHLOROPHENOL	974	U	UG/K
2,4,5-TRICHLOROPHENOL	974	U	UG/K
2,4,6-TRICHLOROPHENOL	974	U	UG/K
2,4-DICHLOROPHENOL	974	U	UG/K
2,4-DIMETHYLPHENOL	974	U	UG/K
2,4-DINITROPHENOL	1950	U	UG/K
2,4-DINITROTOLUENE	974	U	UG/K
2,6-DICHLOROPHENOL	974	U	UG/K
2,6-DINITROTOLUENE	974	U	UG/K
2-ACETYLAMINOFLUORENE	974	U	UG/K
2-CHLORONAPHTHALENE	974	U	UG/K
2-CHLOROPHENOL	974	U	UG/K
2-METHYL-4,6-DINITROPHENOL	974	U	UG/K
2-METHYLNAPHTHALENE	974	U	UG/K
2-METHYLPHENOL	974	U	UG/K
2-NAPHTHYLAMINE	974	U	UG/K
2-NITROANILINE	974	U	UG/K
2-NITROPHENOL	974	U	UG/K
2-PICOLINE	974	U	UG/K
3,3'-DICHLOROBENZIDINE	1950	U	UG/K
3,3'-DIMETHYLBENZIDINE	4870	U	UG/K
3-METHYLCHOLANTHRENE	974	U	UG/K
3-NITROANILINE	974	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69580S

SEMIVOLATILES

-AMINOBIPHENYL	974	U	UG/KG
-BROMOPHENYL PHENYL ETHER	974	U	UG/KG
-CHLORO-3-METHYLPHENOL	974	U	UG/KG
-CHLOROANILINE	974	U	UG/KG
-CHLOROPHENYL PHENYL ETHER	974	U	UG/KG
-NITROANILINE	974	U	UG/KG
-NITROPHENOL	974	U	UG/KG
-NITROQUINOLINE-1-OXIDE	974	U	UG/KG
-NITRO-O-TOLUIDINE	974	U	UG/KG
.12-DIMETHYLBENZ(A)ANTHRACENE	974	U	UG/KG
A-DIMETHYLPHENETHYLAMINE	974	U	UG/KG
CENAPHTHENE	974	U	UG/KG
CENAPHTHYLENE	974	U	UG/KG
CETOPHENONE	974	U	UG/KG
NILINE	974	U	UG/KG
NTHRACENE	974	U	UG/KG
RAMITE	974	U	UG/KG
ENZO(A)ANTHRACENE	974	U	UG/KG
ENZO(A)PYRENE	974	U	UG/KG
ENZO(B)FLUORANTHENE	974	U	UG/KG
ENZO(G,H,I)PERYLENE	974	U	UG/KG
ENZO(K)FLUORANTHENE	974	U	UG/KG
ENZYL ALCOHOL	974	U	UG/KG
S(2-CHLOROETHOXY)METHANE	974	U	UG/KG
S(2-CHLOROETHYL)ETHER	974	U	UG/KG
S(2-ETHYLHEXYL)PHTHALATE	974	U	UG/KG
JTYL BENZYL PHTHALATE	974	U	UG/KG
HLOROBENZILATE	4870	U	UG/KG
RYSENE	974	U	UG/KG
-N-BUTYL PHTHALATE	974	U	UG/KG
-N-OCTYL PHTHALATE	974	U	UG/KG
ALLATE	974	U	UG/KG
BENZO(A,H)ANTHRACENE	974	U	UG/KG
BENZOFURAN	974	U	UG/KG
ETHYL PHTHALATE	974	U	UG/KG
METHOATE	4870	U	UG/KG
METHYL PHTHALATE	974	U	UG/KG
NOSEB	974	U	UG/KG
PHENYLAMINE	974	U	UG/KG
SULFOTON	974	U	UG/KG
HYL METHACRYLAT	974	U	UG/KG

ETHYL METHANESULFONATE	974	U	UG/KG
FAMPHUR	974	U	UG/KG
FLUORANTHENE	974	U	UG/KG
FLUORENE	974	U	UG/KG
HEXACHLOROBENZENE	974	U	UG/KG
HEXACHLOROBUTADIENE	974	U	UG/KG
HEXACHLOROCYCLOPENTADIENE	974	U	UG/KG
HEXACHLOROETHANE	974	U	UG/KG
HEXACHLOROPROPENE	974	U	UG/KG
INDENO(1,2,3-CD) PYRENE	974	U	UG/KG
ISODRIN	974	U	UG/KG
ISOPHORONE	974	U	UG/KG
ISOSAFROLE	974	U	UG/KG
KEPONE	974	U	UG/KG
METHAPYRILENE	4870	U	UG/KG
METHYL METHANESULFONATE	974	U	UG/KG
N-NITROSO-DI-N-PROPYLAMINE	974	U	UG/KG
N-NITROSODI-N-BUTYLAMINE	974	U	UG/KG
N-NITROSODIETHYLAMINE	974	U	UG/KG
N-NITROSODIMETHYLAMINE	974	U	UG/KG
N-NITROSODIPHENYLAMINE	974	U	UG/KG
N-NITROSOMETHYLETHYLAMINE	974	U	UG/KG
N-NITROSOMORPHOLINE	974	U	UG/KG
N-NITROSOPIPERIDINE	974	U	UG/KG
N-NITROSOPYRROLIDINE	974	U	UG/KG
NAPHTHALENE	974	U	UG/KG
NITROBENZENE	974	U	UG/KG
O,O,O-TRIETHYLPHOSPHOROTHIOATE	974	U	UG/KG
O-TOLUIDINE	974	U	UG/KG
P-CRESOL	974	U	UG/KG
P-DIMETHYLAMINOAZOBENZENE	974	U	UG/KG
P-PHENYLENEDIAMINE	1950	U	UG/KG
PENTACHLOROBENZENE	974	U	UG/KG
PENTACHLOROETHANE	974	U	UG/KG
PENTACHLORONITROBENZENE	974	U	UG/KG
PENTACHLOROPHENOL	974	U	UG/KG
PHENACETIN	974	U	UG/KG
PHENANTHRENE	974	U	UG/KG
PHENOL	974	U	UG/KG
PRONAMIDE		U	UG/KG

PYRENE	974	U	UG/K
PYRIDINE	974	U	UG/K
SAFROLE	974	U	UG/K
SULFOTEP	974	U	UG/K
THIONAZIN	974	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69580S

SEMIVOLATILES

Sample Number: S5SS-4
Sample Date: 9/29/96
Laboratory ID: 9609580-09
QC Type: NORMAL
% Moisture: 61
Location: S5SS-4

	RESULT	QUAL	UNITS
,2,4,5-TETRACHLOROBENZENE	848	U	UG/KG
,2,4-TRICHLOROBENZENE	848	U	UG/KG
.2-DICHLOROBENZENE	848	U	UG/KG
,3,5-TRINITROBENZENE	4240	U	UG/KG
,3-DICHLOROBENZENE	848	U	UG/KG
,3-DINITROBENZENE	848	U	UG/KG
.4-DICHLOROBENZENE	848	U	UG/KG
.4-DIOXANE	848	U	UG/KG
4-NAPHTHOQUINONE	848	U	UG/KG
NAPHTHYLAMINE	848	U	UG/KG
3,4,6-TETRACHLOROPHENOL	848	U	UG/KG
4,5-TRICHLOROPHENOL	848	U	UG/KG
4,6-TRICHLOROPHENOL	848	U	UG/KG
4-DICHLOROPHENOL	848	U	UG/KG
4-DIMETHYLPHENOL	848	U	UG/KG
4-DINITROPHENOL	1700	U	UG/KG
4-DINITROTOLUENE	848	U	UG/KG
6-DICHLOROPHENOL	848	U	UG/KG
6-DINITROTOLUENE	848	U	UG/KG
ACETYLAMINOFLUORENE	848	U	UG/KG
CHLORONAPHTHALENE	848	U	UG/KG
CHLOROPHENOL	848	U	UG/KG
METHYL-4,6-DINITROPHENOL	848	U	UG/KG
METHYLNAPHTHALENE	848	U	UG/KG
METHYLPHENOL	848	U	UG/KG
NAPHTHYLAMINE	848	U	UG/KG
NITROANILINE	848	U	UG/KG
NITROPHENOL	848	U	UG/KG
PICOLINE	848	U	UG/KG
-DICHLOROBENZIDINE	1700	U	UG/KG
-DIMETHYLBENZIDINE	4240	U	UG/KG
METHYLCHOLANTHRENE	848	U	UG/KG
NITROANILINE	848	U	UG/KG
4-AMINOBIPHENYL	848	U	UG/KG
4-BROMOPHENYL PHENYL ETHER	848	U	UG/KG
4-CHLORO-3-METHYLPHENOL	848	U	UG/KG
4-CHLOROANILINE	848	U	UG/KG
4-CHLOROPHENYL PHENYL ETHER	848	U	UG/KG
4-NITROANILINE	848	U	UG/KG
4-NITROPHENOL	848	U	UG/KG
4-NITROQUINOLINE-1-OXIDE	848	U	UG/KG
5-NITRO-O-TOLUIDINE	848	U	UG/KG
7,12-DIMETHYLBENZ(A)ANTHRACENE	848	U	UG/KG
A,A-DIMETHYLPHENETHYLAMINE	848	U	UG/KG
ACENAPHTHENE	848	U	UG/KG
ACENAPHTHYLENE	848	U	UG/KG
ACETOPHENONE	848	U	UG/KG
ANILINE	848	U	UG/KG
ANTHRACENE	848	U	UG/KG
ARAMITE	848	U	UG/KG
BENZO(A)ANTHRACENE	848	U	UG/KG
BENZO(A)PYRENE	848	U	UG/KG
BENZO(B)FLUORANTHENE	848	U	UG/KG
BENZO(G,H,I)PERYLENE	848	U	UG/KG
BENZO(K)FLUORANTHENE	848	U	UG/KG
BENZYL ALCOHOL	848	U	UG/KG
BIS(2-CHLOROETHOXY)METHANE	848	U	UG/KG
BIS(2-CHLOROETHYL)ETHER	848	U	UG/KG
BIS(2-ETHYLHEXYL)PHTHALATE	848	U	UG/KG
BUTYL BENZYL PHTHALATE	848	U	UG/KG
CHLOROBENZILATE	4240	U	UG/KG
CHRYSENE	848	U	UG/KG
DI-N-BUTYL PHTHALATE	848	U	UG/KG
DI-N-OCTYL PHTHALATE	848	U	UG/KG
DIALLATE	848	U	UG/KG
DIBENZO(A,H)ANTHRACENE	848	U	UG/KG
DIBENZOFURAN	848	U	UG/KG
DIETHYL PHTHALATE	848	U	UG/KG
DIMETHOATE	4240	U	UG/KG
DIMETHYL PHTHALATE	848	U	UG/KG
DINOSEB	848	U	UG/KG
DIPHENYLAMINE	848	U	UG/KG
DISULFOTON	848	U	UG/KG
ETHYL METHACRYLATE	848	U	UG/KG
ETHYL METHANESULFONATE	848	U	UG/K
FAMPHUR	848	U	UG/K
FLUORANTHENE	848	U	UG/K
FLUORENE	848	U	UG/K
HEXACHLOROBENZENE	848	U	UG/K
HEXACHLOROBUTADIENE	848	U	UG/K
HEXACHLOROCYCLOPENTADIENE	848	U	UG/K
HEXACHLOROETHANE	848	U	UG/K
HEXACHLOROPROPENE	848	U	UG/K
INDENO(1,2,3-CD) PYRENE	848	U	UG/K
ISODRIN	848	U	UG/K
ISOPHORONE	848	U	UG/K
ISOSAFROLE	848	U	UG/K
KEPONE	848	U	UG/K
METHAPYRILENE	4240	U	UG/K
METHYL METHANESULFONATE	848	U	UG/K
N-NITROSO-DI-N-PROPYLAMINE	848	U	UG/K
N-NITROSODI-N-BUTYLAMINE	848	U	UG/K
N-NITROSODIETHYLAMINE	848	U	UG/K
N-NITROSODIMETHYLAMINE	848	U	UG/K
N-NITROSODIPHENYLAMINE	848	U	UG/K
N-NITROSOMETHYLETHYLAMINE	848	U	UG/K
N-NITROSOMORPHOLINE	848	U	UG/K
N-NITROSOPIPERIDINE	848	U	UG/K
N-NITROSOPYRROLIDINE	848	U	UG/K
NAPHTHALENE	848	U	UG/K
NITROBENZENE	848	U	UG/K
O,O,O-TRIETHYLPHOSPHOROTHIOATE	848	U	UG/K
O-TOLUIDINE	848	U	UG/K
P-CRESOL	848	U	UG/K
P-DIMETHYLAMINOAZOBENZENE	848	U	UG/K
P-PHENYLENEDIAMINE	1700	U	UG/K
PENTACHLOROBENZENE	848	U	UG/K
PENTACHLOROETHANE	848	U	UG/K
PENTACHLORONITROBENZENE	848	U	UG/K
PENTACHLOROPHENOL	848	U	UG/K
PHENACETIN	848	U	UG/K
PHENANTHRENE	848	U	UG/K
PHENOL	848	U	UG/K
PRONAMIDE	848	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69580S

SEMIVOLATILES

PYRENE	848	U	UG/KG
PYRIDINE	848	U	UG/KG
SAFROLE	848	U	UG/KG
SULFOTEP	848	U	UG/KG
THIONAZIN	848	U	UG/KG

Sample Number: S5SS-5
Sample Date: 9/29/96
Laboratory ID: 9609580-11
QC Type: NORMAL
% Moisture: 47
Location: S5SS-5

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	616	U	UG/KG
1,2,4-TRICHLOROBENZENE	616	U	UG/KG
1,2-DICHLOROBENZENE	616	U	UG/KG
1,3,5-TRINITROBENZENE	3080	U	UG/KG
1,3-DICHLOROBENZENE	616	U	UG/KG
1,3-DINITROBENZENE	616	U	UG/KG
1,4-DICHLOROBENZENE	616	U	UG/KG
1,4-DIOXANE	616	U	UG/KG
1,4-NAPHTHOQUINONE	616	U	UG/KG
1-NAPHTHYLAMINE	616	U	UG/KG
2,3,4,6-TETRACHLOROPHENOL	616	U	UG/KG
2,4,5-TRICHLOROPHENOL	616	U	UG/KG
2,4,6-TRICHLOROPHENOL	616	U	UG/KG
2,4-DICHLOROPHENOL	616	U	UG/KG
2,4-DIMETHYLPHENOL	616	U	UG/KG
2,4-DINITROPHENOL	1230	U	UG/KG
2,4-DINITROTOLUENE	616	U	UG/KG
2,6-DICHLOROPHENOL	616	U	UG/KG
2,6-DINITROTOLUENE	616	U	UG/KG
2-ACETYLAMINOFLUORENE	616	U	UG/KG
2-CHLORONAPHTHALENE	616	U	UG/KG
2-CHLOROPHENOL	616	U	UG/KG
2-METHYL-4,6-DINITROPHENOL	616	U	UG/KG
2-METHYLNAPHTHALENE	616	U	UG/KG
2-METHYLPHENOL	616	U	UG/KG
2-NAPHTHYLAMINE	616	U	UG/KG
2-NITROANILINE	616	U	UG/KG
2-NITROPHENOL	616	U	UG/KG
2-PICOLINE	616	U	UG/KG
3,3'-DICHLOROBENZIDINE	1230	U	UG/KG
3,3'-DIMETHYLBENZIDINE	3080	U	UG/KG
3-METHYLCHOLANTHRENE	616	U	UG/KG
3-NITROANILINE	[illegible]	U	UG/KG
4-AMINOBIPHENYL	616	U	UG/K
4-BROMOPHENYL PHENYL ETHER	616	U	UG/K
4-CHLORO-3-METHYLPHENOL	616	U	UG/K
4-CHLOROANILINE	616	U	UG/K
4-CHLOROPHENYL PHENYL ETHER	616	U	UG/K
4-NITROANILINE	616	U	UG/K
4-NITROPHENOL	616	U	UG/K
4-NITROQUINOLINE-1-OXIDE	616	U	UG/K
5-NITRO-O-TOLUIDINE	616	U	UG/K
7,12-DIMETHYLBENZ(A)ANTHRACENE	616	U	UG/K
A,A-DIMETHYLPHENETHYLAMINE	616	U	UG/K
ACENAPHTHENE	616	U	UG/K
ACENAPHTHYLENE	616	U	UG/K
ACETOPHENONE	616	U	UG/K
ANILINE	616	U	UG/K
ANTHRACENE	616	U	UG/K
ARAMITE	616	U	UG/K
BENZO(A)ANTHRACENE	616	U	UG/K
BENZO(A)PYRENE	616	U	UG/K
BENZO(B)FLUORANTHENE	616	U	UG/K
BENZO(G,H,I)PERYLENE	616	U	UG/K
BENZO(K)FLUORANTHENE	616	U	UG/K
BENZYL ALCOHOL	616	U	UG/K
BIS(2-CHLOROETHOXY)METHANE	616	U	UG/K
BIS(2-CHLOROETHYL)ETHER	616	U	UG/K
BIS(2-ETHYLHEXYL)PHTHALATE	476	J	UG/K
BUTYL BENZYL PHTHALATE	520	J	UG/K
CHLOROBENZILATE	3080	U	UG/K
CHRYSENE	616	U	UG/K
DI-N-BUTYL PHTHALATE	616	U	UG/K
DI-N-OCTYL PHTHALATE	616	U	UG/K
DIALLATE	616	U	UG/K
DIBENZO(A,H)ANTHRACENE	616	U	UG/K
DIBENZOFURAN	616	U	UG/K
DIETHYL PHTHALATE	616	U	UG/K
DIMETHOATE	3080	U	UG/K
DIMETHYL PHTHALATE	616	U	UG/K
DINOSEB	616	U	UG/K
DIPHENYLAMINE	616	U	UG/K
DISULFOTON	616	U	[illegible]
ETHYL METHACRYLATE	616	U	[illegible]

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69580S

SEMIVOLATILES

ETHYL METHANESULFONATE	616	U	UG/KG
FAMPHUR	616	U	UG/KG
FLUORANTHENE	616	U	UG/KG
FLUORENE	616	U	UG/KG
HEXACHLOROBENZENE	616	U	UG/KG
HEXACHLOROBUTADIENE	616	U	UG/KG
HEXACHLOROCYCLOPENTADIENE	616	U	UG/KG
HEXACHLOROETHANE	616	U	UG/KG
HEXACHLOROPROPENE	616	U	UG/KG
INDENO(1,2,3-CD) PYRENE	616	U	UG/KG
ISODRIN	616	U	UG/KG
ISOPHORONE	616	U	UG/KG
ISOSAFROLE	616	U	UG/KG
KEPONE	616	U	UG/KG
METHAPYRILENE	3080	U	UG/KG
METHYL METHANESULFONATE	616	U	UG/KG
N-NITROSO-DI-N-PROPYLAMINE	616	U	UG/KG
N-NITROSODI-N-BUTYLAMINE	616	U	UG/KG
N-NITROSODIETHYLAMINE	616	U	UG/KG
N-NITROSODIMETHYLAMINE	616	U	UG/KG
N-NITROSODIPHENYLAMINE	616	U	UG/KG
N-NITROSOMETHYLETHYLAMINE	616	U	UG/KG
N-NITROSOMORPHOLINE	616	U	UG/KG
N-NITROSOPIPERIDINE	616	U	UG/KG
N-NITROSOPYRROLIDINE	616	U	UG/KG
NAPHTHALENE	616	U	UG/KG
NITROBENZENE	616	U	UG/KG
O,O,O-TRIETHYLPHOSPHOROTHIOATE	616	U	UG/KG
O-TOLUIDINE	616	U	UG/KG
P-CRESOL	616	U	UG/KG
P-DIMETHYLAMINOAZOBENZENE	616	U	UG/KG
P-PHENYLENEDIAMINE	1230	U	UG/KG
PENTACHLOROBENZENE	616	U	UG/KG
PENTACHLOROETHANE	616	U	UG/KG
PENTACHLORONITROBENZENE	616	U	UG/KG
PENTACHLOROPHENOL	616	U	UG/KG
PHENACETIN	616	U	UG/KG
PHENANTHRENE	616	U	UG/KG
PHENOL	616	U	UG/KG
PRONAMIDE	616	U	UG/KG
PYRENE	616	U	UG/KG
PYRIDINE	616	U	UG/KG
SAFROLE	616	U	UG/KG
SULFOTEP	616	U	UG/KG
THIONAZIN	616	U	UG/KG

Sample Number: S5SS-6
Sample Date: 9/29/96
Laboratory ID: 9609580-08
QC Type: NORMAL
% Moisture: 77
Location: S5SS-6

	RESULT	QUAL	UNIT
1,2,4,5-TETRACHLOROBENZENE	1430	U	UG/K
1,2,4-TRICHLOROBENZENE	1430	U	UG/K
1,2-DICHLOROBENZENE	1430	U	UG/K
1,3,5-TRINITROBENZENE	7140	U	UG/K
1,3-DICHLOROBENZENE	1430	U	UG/K
1,3-DINITROBENZENE	1430	U	UG/K
1,4-DICHLOROBENZENE	1430	U	UG/K
1,4-DIOXANE	1430	U	UG/K
1,4-NAPHTHOQUINONE	1430	U	UG/K
1-NAPHTHYLAMINE	1430	U	UG/K
2,3,4,6-TETRACHLOROPHENOL	1430	U	UG/K
2,4,5-TRICHLOROPHENOL	1430	U	UG/K
2,4,6-TRICHLOROPHENOL	1430	U	UG/K
2,4-DICHLOROPHENOL	1430	U	UG/K
2,4-DIMETHYLPHENOL	1430	U	UG/K
2,4-DINITROPHENOL	2860	U	UG/K
2,4-DINITROTOLUENE	1430	U	UG/K
2,6-DICHLOROPHENOL	1430	U	UG/K
2,6-DINITROTOLUENE	1430	U	UG/K
2-ACETYLAMINOFLUORENE	1430	U	UG/K
2-CHLORONAPHTHALENE	1430	U	UG/K
2-CHLOROPHENOL	1430	U	UG/K
2-METHYL-4,6-DINITROPHENOL	1430	U	UG/K
2-METHYLNAPHTHALENE	1430	U	UG/K
2-METHYLPHENOL	1430	U	UG/K
2-NAPHTHYLAMINE	1430	U	UG/K
2-NITROANILINE	1430	U	UG/K
2-NITROPHENOL	1430	U	UG/K
2-PICOLINE	1430	U	UG/K
3,3'-DICHLOROBENZIDINE	2860	U	UG/K
3,3'-DIMETHYLBENZIDINE	7140	U	UG/K
3-METHYLCHOLANTHRENE	1430	U	UG/K
3-NITROANILINE	1430	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69580S

SEMIVOLATILES

4-AMINOBIPHENYL	1430	U	UG/KG
4-BROMOPHENYL PHENYL ETHER	1430	U	UG/KG
4-CHLORO-3-METHYLPHENOL	1430	U	UG/KG
4-CHLOROANILINE	1430	U	UG/KG
4-CHLOROPHENYL PHENYL ETHER	1430	U	UG/KG
4-NITROANILINE	1430	U	UG/KG
4-NITROPHENOL	1430	U	UG/KG
4-NITROQUINOLINE-1-OXIDE	1430	U	UG/KG
5-NITRO-O-TOLUIDINE	1430	U	UG/KG
7,12-DIMETHYLBENZ(A)ANTHRACENE	1430	U	UG/KG
A,A-DIMETHYLPHENETHYLAMINE	1430	U	UG/KG
ACENAPHTHENE	1430	U	UG/KG
ACENAPHTHYLENE	1430	U	UG/KG
ACETOPHENONE	1430	U	UG/KG
ANILINE	1430	U	UG/KG
ANTHRACENE	1430	U	UG/KG
ARAMITE	1430	U	UG/KG
BENZO(A)ANTHRACENE	1430	U	UG/KG
BENZO(A)PYRENE	1430	U	UG/KG
BENZO(B)FLUORANTHENE	1430	U	UG/KG
BENZO(G,H,I)PERYLENE	1430	U	UG/KG
BENZO(K)FLUORANTHENE	1430	U	UG/KG
BENZYL ALCOHOL	1430	U	UG/KG
BIS(2-CHLOROETHOXY)METHANE	1430	U	UG/KG
BIS(2-CHLOROETHYL)ETHER	1430	U	UG/KG
BIS(2-ETHYLHEXYL)PHTHALATE	1430	U	UG/KG
BUTYL BENZYL PHTHALATE	1430	U	UG/KG
CHLOROBENZILATE	7140	U	UG/KG
CHRYSENE	1430	U	UG/KG
DI-N-BUTYL PHTHALATE	1430	U	UG/KG
DI-N-OCTYL PHTHALATE	1430	U	UG/KG
DIALLATE	1430	U	UG/KG
DIBENZO(A,H)ANTHRACENE	1430	U	UG/KG
DIBENZOFURAN	1430	U	UG/KG
DIETHYL PHTHALATE	1430	U	UG/KG
DIMETHOATE	7140	U	UG/KG
DIMETHYL PHTHALATE	1430	U	UG/KG
DINOSEB	1430	U	UG/KG
DIPHENYLAMINE	1430	U	UG/KG
DISULFOTON	1430	U	UG/KG
ETHYL METHACRYL/	1430	U	UG/KG

ETHYL METHANESULFONATE	1430	U	UG/KG
FAMPHUR	1430	U	UG/KG
FLUORANTHENE	1430	U	UG/KG
FLUORENE	1430	U	UG/KG
HEXACHLOROBENZENE	1430	U	UG/KG
HEXACHLOROBUTADIENE	1430	U	UG/KG
HEXACHLOROCYCLOPENTADIENE	1430	U	UG/KG
HEXACHLOROETHANE	1430	U	UG/KG
HEXACHLOROPROPENE	1430	U	UG/KG
INDENO(1,2,3-CD) PYRENE	1430	U	UG/KG
ISODRIN	1430	U	UG/KG
ISOPHORONE	1430	U	UG/KG
ISOSAFROLE	1430	U	UG/KG
KEPONE	1430	U	UG/KG
METHAPYRILENE	7140	U	UG/KG
METHYL METHANESULFONATE	1430	U	UG/KG
N-NITROSO-DI-N-PROPYLAMINE	1430	U	UG/KG
N-NITROSODI-N-BUTYLAMINE	1430	U	UG/KG
N-NITROSODIETHYLAMINE	1430	U	UG/KG
N-NITROSODIMETHYLAMINE	1430	U	UG/KG
N-NITROSODIPHENYLAMINE	1430	U	UG/KG
N-NITROSOMETHYLETHYLAMINE	1430	U	UG/KG
N-NITROSOMORPHOLINE	1430	U	UG/KG
N-NITROSOPIPERIDINE	1430	U	UG/KG
N-NITROSOPYRROLIDINE	1430	U	UG/KG
NAPHTHALENE	1430	U	UG/KG
NITROBENZENE	1430	U	UG/KG
O,O,O-TRIETHYLPHOSPHOROTHIOATE	1430	U	UG/KG
O-TOLUIDINE	1430	U	UG/KG
P-CRESOL	1430	U	UG/KG
P-DIMETHYLAMINOAZOBENZENE	1430	U	UG/KG
P-PHENYLENEDIAMINE	2860	U	UG/KG
PENTACHLOROBENZENE	1430	U	UG/KG
PENTACHLOROETHANE	1430	U	UG/KG
PENTACHLORONITROBENZENE	1430	U	UG/KG
PENTACHLOROPHENOL	1430	U	UG/KG
PHENACETIN	1430	U	UG/KG
PHENANTHRENE	1430	U	UG/KG
PHENOL	1430	U	UG/KG
PROPAMIDE		U	UG/KG

PYRENE	1430	U	UG/K
PYRIDINE	1430	U	UG/K
SAFROLE	1430	U	UG/K
SULFOTEP	1430	U	UG/K
THIONAZIN	1430	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69580S

VOLATILES

Sample Number: B7SS-01
Sample Date: 9/27/96
Laboratory ID: 9609580-01
QC Type: NORMAL
% Moisture: 56
Location: B7SS-1

	RESULT	QUAL	UNITS
1,2-DICHLOROBENZENE	4.5	U	UG/KG
1,3-DICHLOROBENZENE	4.5	U	UG/KG
1,4-DICHLOROBENZENE	4.5	U	UG/KG
BENZENE	4.5	U	UG/KG
CHLOROBENZENE	4.5	U	UG/KG
ETHYLBENZENE	4.5	U	UG/KG
TOLUENE	5	U	UG/KG
XYLENES (TOTAL)	13.6	U	UG/KG

Sample Number: B7SS-02
Sample Date: 9/27/96
Laboratory ID: 9609580-02
QC Type: NORMAL
% Moisture: 68
Location: B7SS-2

	RESULT	QUAL	UNITS
1,2-DICHLOROBENZENE	6.2	U	UG/KG
1,3-DICHLOROBENZENE	6.2	U	UG/KG
1,4-DICHLOROBENZENE	6.2	U	UG/KG
BENZENE	6.2	U	UG/KG
CHLOROBENZENE	6.2	U	UG/KG
ETHYLBENZENE	6.2	U	UG/KG
TOLUENE	6	U	UG/KG
XYLENES (TOTAL)	18.8	U	UG/KG

Sample Number: S4DPSS
Sample Date: 9/29/96
Laboratory ID: 9609580-07
QC Type: NORMAL
% Moisture: 37
Location: S4DPSS

	RESULT	QUAL	UNIT
1,1,1,2-TETRACHLOROETHANE	3.2	U	UG/K
1,1,1-TRICHLOROETHANE	3.2	U	UG/K
1,1,2,2-TETRACHLOROETHANE	3.2	U	UG/K
1,1,2-TRICHLOROETHANE	3.2	U	UG/K
1,1-DICHLOROETHANE	3.2	U	UG/K
1,1-DICHLOROETHENE	3.2	U	UG/K
1,2,3-TRICHLOROPROPANE	1.6	U	UG/K
1,2-DIBROMO-3-CHLOROPROPANE	1.6	U	UG/K
1,2-DIBROMOETHANE	1.6	U	UG/K
1,2-DICHLOROETHANE	3.2	U	UG/K
1,2-DICHLOROPROPANE	3.2	U	UG/K
2-BUTANONE	7.9	U	UG/K
2-CHLORO-1,3-BUTADIENE	1.6	UR	UG/K
2-HEXANONE	7.9	U	UG/K
4-METHYL-2-PENTANONE	7.9	U	UG/K
ACETONE	43.6		UG/K
ACETONITRILE	7.9	U	UG/K
ACROLEIN	15.9	UR	UG/K
ACRYLONITRILE	15.9	U	UG/K
ALLYL CHLORIDE	7.9	U	UG/K
BENZENE	3.2	U	UG/K
BIS(2-CHLOROISOPROPYL)ETHER	15.9	U	UG/K
BROMODICHLOROMETHANE	3.2	U	UG/K
BROMOFORM	3.2	U	UG/K
BROMOMETHANE	3.2	U	UG/K
CARBON DISULFIDE	7.9	U	UG/K
CARBON TETRACHLORIDE	3.2	U	UG/K
CHLOROBENZENE	3.2	U	UG/K
CHLORODIBROMOMETHANE	3.2	U	UG/K
CHLOROETHANE	3.2	U	UG/K
CHLOROFORM	3.2	U	UG/K
CHLOROMETHANE	3.2	U	UG/K
CIS-1,3-DICHLOROPROPENE	3.2	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69580S

VOLATILES

DIBROMOMETHANE	3.2	U	UG/KG
DICHLORODIFLUOROMETHANE	3.2	U	UG/KG
ETHYL CYANIDE	15.9	UR	UG/KG
ETHYLBENZENE	3.2	U	UG/KG
IODOMETHANE	4	U	UG/KG
ISOBUTYL ALCOHOL	15.9	UR	UG/KG
METHACRYLONITRILE	7.9	UR	UG/KG
METHYL METHACRYLATE	7.9	U	UG/KG
METHYLENE CHLORIDE	7.9	U	UG/KG
STYRENE	3.2	U	UG/KG
TETRACHLOROETHENE	2	J	UG/KG
TOLUENE	3	U	UG/KG
TRANS-1,2-DICHLOROETHENE	3.2	U	UG/KG
TRANS-1,3-DICHLOROPROPENE	3.2	U	UG/KG
TRANS-1,4-DICHLORO-2-BUTENE	7.9	U	UG/KG
TRICHLOROETHENE	3.2	U	UG/KG
TRICHLOROFLUOROMETHANE	3.2	U	UG/KG
VINYL ACETATE	7.9	U	UG/KG
VINYL CHLORIDE	3.2	U	UG/KG
XYLENES (TOTAL)	6.3	U	UG/KG

Sample Number: S4SS-4
Sample Date: 9/29/96
Laboratory ID: 9609580-03
QC Type: NORMAL
% Moisture: 64
Location: S4SS-4

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	5.6	U	UG/KG
1,1,1-TRICHLOROETHANE	5.6	U	UG/KG
1,1,2,2-TETRACHLOROETHANE	5.6	U	UG/KG
1,1,2-TRICHLOROETHANE	5.6	U	UG/KG
1,1-DICHLOROETHANE	5.6	U	UG/KG
1,1-DICHLOROETHENE	5.6	U	UG/KG
1,2,3-TRICHLOROPROPANE	2.8	U	UG/KG
1,2-DIBROMO-3-CHLOROPROPANE	2.8	U	UG/KG
1,2-DIBROMOETHANE	2.8	U	UG/KG
1,2-DICHLOROETHANE	5.6	U	UG/KG
1,2-DICHLOROPROPANE	5.6	U	UG/KG
2-BUTANONE	13.9	U	UG/KG
2-CHLORO-1,3-BUTADIENE	2.8	UR	UG/KG
2-HEXANONE	13.9	U	UG/KG
4-METHYL-2-PENTANONE	13.9	U	UG/KG
ACETONE	27.8	U	UG/KG
ACETONITRILE	13.9	U	UG/KG
ACROLEIN	27.8	UR	UG/KG
ACRYLONITRILE	27.8	U	UG/KG
ALLYL CHLORIDE	13.9	U	UG/KG
BENZENE	5.6	U	UG/KG
BIS(2-CHLOROISOPROPYL)ETHER	27.8	U	UG/KG
BROMODICHLOROMETHANE	5.6	U	UG/KG
BROMOFORM	5.6	U	UG/KG
BROMOMETHANE	5.6	U	UG/KG
CARBON DISULFIDE	13.9	U	UG/KG
CARBON TETRACHLORIDE	5.6	U	UG/KG
CHLOROBENZENE	5.6	U	UG/KG
CHLORODIBROMOMETHANE	5.6	U	UG/KG
CHLOROETHANE	5.6	U	UG/KG
CHLOROFORM	5.6	U	UG/KG
CHLOROMETHANE	5.6	U	UG/KG
CIS-1,3-DICHLOROPROPENE	5.6	U	UG/KG

DIBROMOMETHANE	5.6	U	UG/K
DICHLORODIFLUOROMETHANE	5.6	U	UG/K
ETHYL CYANIDE	27.8	UR	UG/K
ETHYLBENZENE	5.6	U	UG/K
IODOMETHANE	6.9	U	UG/K
ISOBUTYL ALCOHOL	27.8	UR	UG/K
METHACRYLONITRILE	13.9	UR	UG/K
METHYL METHACRYLATE	13.9	U	UG/K
METHYLENE CHLORIDE	14	U	UG/K
STYRENE	5.6	U	UG/K
TETRACHLOROETHENE	2	J	UG/K
TOLUENE	6	U	UG/K
TRANS-1,2-DICHLOROETHENE	5.6	U	UG/K
TRANS-1,3-DICHLOROPROPENE	5.6	U	UG/K
TRANS-1,4-DICHLORO-2-BUTENE	13.9	U	UG/K
TRICHLOROETHENE	5.6	U	UG/K
TRICHLOROFLUOROMETHANE	5.6	U	UG/K
VINYL ACETATE	13.9	U	UG/K
VINYL CHLORIDE	5.6	U	UG/K
XYLENES (TOTAL)	11.1	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69580S

VOLATILES

Sample Number: S4SS-5
Sample Date: 9/29/96
Laboratory ID: 9609580-04
QC Type: NORMAL
% Moisture: 50
Location: S4SS-5

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	4	U	UG/KG
1,1,1-TRICHLOROETHANE	4	U	UG/KG
1,1,2,2-TETRACHLOROETHANE	4	U	UG/KG
1,1,2-TRICHLOROETHANE	4	U	UG/KG
1,1-DICHLOROETHANE	4	U	UG/KG
1,1-DICHLOROETHENE	4	U	UG/KG
1,2,3-TRICHLOROPROPANE	2	U	UG/KG
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/KG
1,2-DIBROMOETHANE	2	U	UG/KG
1,2-DICHLOROETHANE	4	U	UG/KG
1,2-DICHLOROPROPANE	4	U	UG/KG
2-BUTANONE	10	U	UG/KG
2-CHLORO-1,3-BUTADIENE	2	UR	UG/KG
2-HEXANONE	10	U	UG/KG
4-METHYL-2-PENTANONE	10	U	UG/KG
ACETONE	20	U	UG/KG
ACETONITRILE	10	U	UG/KG
ACROLEIN	20	UR	UG/KG
ACRYLONITRILE	20	U	UG/KG
ALLYL CHLORIDE	10	U	UG/KG
BENZENE	4	U	UG/KG
BIS(2-CHLOROISOPROPYL)ETHER	20	U	UG/KG
BROMODICHLOROMETHANE	4	U	UG/KG
BROMOFORM	4	U	UG/KG
BROMOMETHANE	4	U	UG/KG
CARBON DISULFIDE	10	U	UG/KG
CARBON TETRACHLORIDE	4	U	UG/KG
CHLOROBENZENE	4	U	UG/KG
CHLORODIBROMOMETHANE	4	U	UG/KG
CHLOROETHANE	4	U	UG/KG
CHLOROFORM	4	U	UG/KG
CHLOROMETHANE	4	U	UG/KG
CIS-1,3-DICHLOROPROPENE	4	U	UG/KG
DIBROMOMETHANE	4	U	UG/KG
DICHLORODIFLUOROMETHANE	4	U	UG/KG
ETHYL CYANIDE	20	UR	UG/KG
ETHYLBENZENE	4	U	UG/KG
IODOMETHANE	5	U	UG/KG
ISOBUTYL ALCOHOL	20	UR	UG/KG
METHACRYLONITRILE	10	UR	UG/KG
METHYL METHACRYLATE	10	U	UG/KG
METHYLENE CHLORIDE	10	U	UG/KG
STYRENE	4	U	UG/KG
TETRACHLOROETHENE	0.97	J	UG/KG
TOLUENE	4	U	UG/KG
TRANS-1,2-DICHLOROETHENE	4	U	UG/KG
TRANS-1,3-DICHLOROPROPENE	4	U	UG/KG
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/KG
TRICHLOROETHENE	4	U	UG/KG
TRICHLOROFLUOROMETHANE	4	U	UG/KG
VINYL ACETATE	10	U	UG/KG
VINYL CHLORIDE	4	U	UG/KG
XYLENES (TOTAL)	8	U	UG/KG

Sample Number: S4SS-6
Sample Date: 9/29/96
Laboratory ID: 9609580-05
QC Type: NORMAL
% Moisture: 50
Location: S4SS-6

	RESULT	QUAL	UNIT
1,1,1,2-TETRACHLOROETHANE	4	U	UG/K
1,1,1-TRICHLOROETHANE	4	U	UG/K
1,1,2,2-TETRACHLOROETHANE	4	U	UG/K
1,1,2-TRICHLOROETHANE	4	U	UG/K
1,1-DICHLOROETHANE	4	U	UG/K
1,1-DICHLOROETHENE	4	U	UG/K
1,2,3-TRICHLOROPROPANE	2	U	UG/K
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/K
1,2-DIBROMOETHANE	2	U	UG/K
1,2-DICHLOROETHANE	4	U	UG/K
1,2-DICHLOROPROPANE	4	U	UG/K
2-BUTANONE	10	U	UG/K
2-CHLORO-1,3-BUTADIENE	2	UR	UG/K
2-HEXANONE	10	U	UG/K
4-METHYL-2-PENTANONE	10	U	UG/K
ACETONE	20	U	UG/K
ACETONITRILE	10	U	UG/K
ACROLEIN	20	UR	UG/K
ACRYLONITRILE	20	U	UG/K
ALLYL CHLORIDE	10	U	UG/K
BENZENE	4	U	UG/K
BIS(2-CHLOROISOPROPYL)ETHER	20	U	UG/K
BROMODICHLOROMETHANE	4	U	UG/K
BROMOFORM	4	U	UG/K
BROMOMETHANE	4	U	UG/K
CARBON DISULFIDE	10	U	UG/K
CARBON TETRACHLORIDE	4	U	UG/K
CHLOROBENZENE	4	U	UG/K
CHLORODIBROMOMETHANE	4	U	UG/K
CHLOROETHANE	4	U	UG/K
CHLOROFORM	4	U	UG/K
CHLOROMETHANE	4	U	UG/K
CIS-1,3-DICHLOROPROPENE	4	U	UG/K

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VOLATILES

DIBROMOMETHANE	4	U	UG/KG
DICHLORODIFLUOROMETHANE	4	U	UG/KG
ETHYL CYANIDE	20	UR	UG/KG
ETHYLBENZENE	4	U	UG/KG
IODOMETHANE	5	U	UG/KG
ISOBUTYL ALCOHOL	20	UR	UG/KG
METHACRYLONITRILE	10	UR	UG/KG
METHYL METHACRYLATE	10	U	UG/KG
METHYLENE CHLORIDE	10	U	UG/KG
STYRENE	4	U	UG/KG
TETRACHLOROETHENE	1.5	J	UG/KG
TOLUENE	4	U	UG/KG
TRANS-1,2-DICHLOROETHENE	4	U	UG/KG
TRANS-1,3-DICHLOROPROPENE	4	U	UG/KG
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/KG
TRICHLOROETHENE	4	U	UG/KG
TRICHLOROFLUOROMETHANE	4	U	UG/KG
VINYL ACETATE	10	U	UG/KG
VINYL CHLORIDE	4	U	UG/KG
XYLENES (TOTAL)	8	U	UG/KG

Sample Number: S4SS-7
Sample Date: 9/29/96
Laboratory ID: 9609580-06
QC Type: NORMAL
% Moisture: 37
Location: S4SS-7

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	3	U	UG/KG
1,1,1-TRICHLOROETHANE	3.2	U	UG/KG
1,1,2,2-TETRACHLOROETHANE	3.2	U	UG/KG
1,1,2-TRICHLOROETHANE	3.2	U	UG/KG
1,1-DICHLOROETHANE	3.2	U	UG/KG
1,1-DICHLOROETHENE	3.2	U	UG/KG
1,2,3-TRICHLOROPROPANE	2	U	UG/KG
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/KG
1,2-DIBROMOETHANE	2	U	UG/KG
1,2-DICHLOROETHANE	3.2	U	UG/KG
1,2-DICHLOROPROPANE	3.2	U	UG/KG
2-BUTANONE	7.9	U	UG/KG
2-CHLORO-1,3-BUTADIENE	2	UR	UG/KG
2-HEXANONE	7.9	U	UG/KG
4-METHYL-2-PENTANONE	7.9	U	UG/KG
ACETONE	32.3		UG/KG
ACETONITRILE	8	U	UG/KG
ACROLEIN	15.9	UR	UG/KG
ACRYLONITRILE	15.9	U	UG/KG
ALLYL CHLORIDE	8	U	UG/KG
BENZENE	3.2	U	UG/KG
BIS(2-CHLOROISOPROPYL)ETHER	16	U	UG/KG
BROMODICHLOROMETHANE	3.2	U	UG/KG
BROMOFORM	3.2	U	UG/KG
BROMOMETHANE	3.2	U	UG/KG
CARBON DISULFIDE	7.9	U	UG/KG
CARBON TETRACHLORIDE	3.2	U	UG/KG
CHLOROBENZENE	3.2	U	UG/KG
CHLORODIBROMOMETHANE	3.2	U	UG/KG
CHLOROETHANE	3.2	U	UG/KG
CHLOROFORM	3.2	U	UG/KG
CHLOROMETHANE	3.2	U	UG/KG
CIS-1,3-DICHLOROPROPENE	3.2	U	UG/KG
DIBROMOMETHANE	3	U	UG/K
DICHLORODIFLUOROMETHANE	3.2	U	UG/K
ETHYL CYANIDE	16	UR	UG/K
ETHYLBENZENE	3.2	U	UG/K
IODOMETHANE	4	U	UG/K
ISOBUTYL ALCOHOL	16	UR	UG/K
METHACRYLONITRILE	8	UR	UG/K
METHYL METHACRYLATE	8	U	UG/K
METHYLENE CHLORIDE	8	U	UG/K
STYRENE	3.2	U	UG/K
TETRACHLOROETHENE	0.48	J	UG/K
TOLUENE	3	U	UG/K
TRANS-1,2-DICHLOROETHENE	3.2	U	UG/K
TRANS-1,3-DICHLOROPROPENE	3.2	U	UG/K
TRANS-1,4-DICHLORO-2-BUTENE	8	U	UG/K
TRICHLOROETHENE	3.2	U	UG/K
TRICHLOROFLUOROMETHANE	3.2	U	UG/K
VINYL ACETATE	7.9	U	UG/K
VINYL CHLORIDE	3.2	U	UG/K
XYLENES, TOTAL	6	U	UG/K

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VOLATILES

Sample Number: S5DPSS
Sample Date: 9/29/96
Laboratory ID: 9609580-12
QC Type: NORMAL
% Moisture: 42
Location: S5DPSS

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	3.4	U	UG/KG
1,1,1-TRICHLOROETHANE	3.4	U	UG/KG
1,1,2,2-TETRACHLOROETHANE	3.4	U	UG/KG
1,1,2-TRICHLOROETHANE	3.4	U	UG/KG
1,1-DICHLOROETHANE	3.4	U	UG/KG
1,1-DICHLOROETHENE	3.4	U	UG/KG
1,2,3-TRICHLOROPROPANE	1.7	U	UG/KG
1,2-DIBROMO-3-CHLOROPROPANE	1.7	U	UG/KG
1,2-DIBROMOETHANE	1.7	U	UG/KG
1,2-DICHLOROETHANE	3.4	U	UG/KG
1,2-DICHLOROPROPANE	3.4	U	UG/KG
2-BUTANONE	8.6	U	UG/KG
2-CHLORO-1,3-BUTADIENE	1.7	UR	UG/KG
2-HEXANONE	8.6	U	UG/KG
4-METHYL-2-PENTANONE	8.6	U	UG/KG
ACETONE	17.2	U	UG/KG
ACETONITRILE	8.6	U	UG/KG
ACROLEIN	17.2	UR	UG/KG
ACRYLONITRILE	17.2	U	UG/KG
ALLYL CHLORIDE	8.6	U	UG/KG
BENZENE	3.4	U	UG/KG
BIS(2-CHLOROISOPROPYL)ETHER	17.2	U	UG/KG
BROMODICHLOROMETHANE	3.4	U	UG/KG
BROMOFORM	3.4	U	UG/KG
BROMOMETHANE	3.4	U	UG/KG
CARBON DISULFIDE	8.6	U	UG/KG
CARBON TETRACHLORIDE	3.4	U	UG/KG
CHLOROBENZENE	3.4	U	UG/KG
CHLORODIBROMOMETHANE	3.4	U	UG/KG
CHLOROETHANE	3.4	U	UG/KG
CHLOROFORM	3.4	U	UG/KG
CHLOROMETHANE	3.4	U	UG/KG
CIS-1,3-DICHLOROPROPENE	3.4	U	UG/KG
DIBROMOMETHANE	3.4	U	UG/KG
DICHLORODIFLUOROMETHANE	3.4	U	UG/KG
ETHYL CYANIDE	17.2	UR	UG/KG
ETHYLBENZENE	3.4	U	UG/KG
IODOMETHANE	4.3	U	UG/KG
ISOBUTYL ALCOHOL	17.2	UR	UG/KG
METHACRYLONITRILE	8.6	UR	UG/KG
METHYL METHACRYLATE	8.6	U	UG/KG
METHYLENE CHLORIDE	9	U	UG/KG
STYRENE	3.4	U	UG/KG
TETRACHLOROETHENE	3.4	U	UG/KG
TOLUENE	3	U	UG/KG
TRANS-1,2-DICHLOROETHENE	3.4	U	UG/KG
TRANS-1,3-DICHLOROPROPENE	3.4	U	UG/KG
TRANS-1,4-DICHLORO-2-BUTENE	8.6	U	UG/KG
TRICHLOROETHENE	3.4	U	UG/KG
TRICHLOROFLUOROMETHANE	3.4	U	UG/KG
VINYL ACETATE	8.6	U	UG/KG
VINYL CHLORIDE	3.4	U	UG/KG
XYLENES (TOTAL)	6.9	U	UG/KG

Sample Number: S5SS-3
Sample Date: 9/29/96
Laboratory ID: 9609580-10
QC Type: NORMAL
% Moisture: 66
Location: S5SS-3

	RESULT	QUAL	UNIT
1,1,1,2-TETRACHLOROETHANE	5.9	U	UG/K
1,1,1-TRICHLOROETHANE	5.9	U	UG/K
1,1,2,2-TETRACHLOROETHANE	5.9	U	UG/K
1,1,2-TRICHLOROETHANE	5.9	U	UG/K
1,1-DICHLOROETHANE	5.9	U	UG/K
1,1-DICHLOROETHENE	5.9	U	UG/K
1,2,3-TRICHLOROPROPANE	2.9	U	UG/K
1,2-DIBROMO-3-CHLOROPROPANE	2.9	U	UG/K
1,2-DIBROMOETHANE	2.9	U	UG/K
1,2-DICHLOROETHANE	5.9	U	UG/K
1,2-DICHLOROPROPANE	5.9	U	UG/K
2-BUTANONE	14.7	U	UG/K
2-CHLORO-1,3-BUTADIENE	2.9	UR	UG/K
2-HEXANONE	14.7	U	UG/K
4-METHYL-2-PENTANONE	14.7	U	UG/K
ACETONE	79.4		UG/K
ACETONITRILE	14.7	U	UG/K
ACROLEIN	29.4	UR	UG/K
ACRYLONITRILE	29.4	U	UG/K
ALLYL CHLORIDE	14.7	U	UG/K
BENZENE	5.9	U	UG/K
BIS(2-CHLOROISOPROPYL)ETHER	29.4	U	UG/K
BROMODICHLOROMETHANE	5.9	U	UG/K
BROMOFORM	5.9	U	UG/K
BROMOMETHANE	5.9	U	UG/K
CARBON DISULFIDE	14.7	U	UG/K
CARBON TETRACHLORIDE	5.9	U	UG/K
CHLOROBENZENE	5.9	U	UG/K
CHLORODIBROMOMETHANE	5.9	U	UG/K
CHLOROETHANE	5.9	U	UG/K
CHLOROFORM	5.9	U	UG/K
CHLOROMETHANE	5.9	U	UG/K
CIS-1,3-DICHLOROPROPENE	5.9	U	UG/K

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VOLATILES

DIBROMOMETHANE	5.9	U	UG/KG
DICHLORODIFLUOROMETHANE	5.9	U	UG/KG
ETHYL CYANIDE	29.4	UR	UG/KG
ETHYLBENZENE	5.9	U	UG/KG
IODOMETHANE	7.4	U	UG/KG
ISOBUTYL ALCOHOL	29.4	UR	UG/KG
METHACRYLONITRILE	14.7	UR	UG/KG
METHYL METHACRYLATE	14.7	U	UG/KG
METHYLENE CHLORIDE	15	U	UG/KG
STYRENE	5.9	U	UG/KG
TETRACHLOROETHENE	10.2		UG/KG
TOLUENE	5.9	U	UG/KG
TRANS-1,2-DICHLOROETHENE	5.9	U	UG/KG
TRANS-1,3-DICHLOROPROPENE	5.9	U	UG/KG
TRANS-1,4-DICHLORO-2-BUTENE	14.7	U	UG/KG
TRICHLOROETHENE	5.9	U	UG/KG
TRICHLOROFLUOROMETHANE	5.9	U	UG/KG
VINYL ACETATE	14.7	U	UG/KG
VINYL CHLORIDE	5.9	U	UG/KG
XYLENES (TOTAL)	11.8	U	UG/KG

Sample Number: S5SS-4
Sample Date: 9/29/96
Laboratory ID: 9609580-09
QC Type: NORMAL
% Moisture: 61
Location: S5SS-4

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	5.1	U	UG/KG
1,1,1-TRICHLOROETHANE	5.1	U	UG/KG
1,1,2,2-TETRACHLOROETHANE	5.1	U	UG/KG
1,1,2-TRICHLOROETHANE	5.1	U	UG/KG
1,1-DICHLOROETHANE	5.1	U	UG/KG
1,1-DICHLOROETHENE	5.1	U	UG/KG
1,2,3-TRICHLOROPROPANE	2.6	U	UG/KG
1,2-DIBROMO-3-CHLOROPROPANE	2.6	U	UG/KG
1,2-DIBROMOETHANE	2.6	U	UG/KG
1,2-DICHLOROETHANE	5.1	U	UG/KG
1,2-DICHLOROPROPANE	5.1	U	UG/KG
2-BUTANONE	12.8	U	UG/KG
2-CHLORO-1,3-BUTADIENE	2.6	UR	UG/KG
2-HEXANONE	12.8	U	UG/KG
4-METHYL-2-PENTANONE	12.8	U	UG/KG
ACETONE	25.6	U	UG/KG
ACETONITRILE	12.8	U	UG/KG
ACROLEIN	25.6	UR	UG/KG
ACRYLONITRILE	25.6	U	UG/KG
ALLYL CHLORIDE	12.8	U	UG/KG
BENZENE	5.1	U	UG/KG
BIS(2-CHLOROISOPROPYL)ETHER	25.6	U	UG/KG
BROMODICHLOROMETHANE	5.1	U	UG/KG
BROMOFORM	5.1	U	UG/KG
BROMOMETHANE	5.1	U	UG/KG
CARBON DISULFIDE	12.8	U	UG/KG
CARBON TETRACHLORIDE	5.1	U	UG/KG
CHLOROBENZENE	5.1	U	UG/KG
CHLORODIBROMOMETHANE	5.1	U	UG/KG
CHLOROETHANE	5.1	U	UG/KG
CHLOROFORM	5.1	U	UG/KG
CHLOROMETHANE	5.1	U	UG/KG
CIS-1,3-DICHLOROPROPENE	5.1	U	UG/KG

DIBROMOMETHANE	5.1	U	UG/K
DICHLORODIFLUOROMETHANE	5.1	U	UG/K
ETHYL CYANIDE	25.6	UR	UG/K
ETHYLBENZENE	5.1	U	UG/K
IODOMETHANE	6.4	U	UG/K
ISOBUTYL ALCOHOL	25.6	UR	UG/K
METHACRYLONITRILE	12.8	UR	UG/K
METHYL METHACRYLATE	12.8	U	UG/K
METHYLENE CHLORIDE	13	U	UG/K
STYRENE	5.1	U	UG/K
TETRACHLOROETHENE	2.5	J	UG/K
TOLUENE	5.1	U	UG/K
TRANS-1,2-DICHLOROETHENE	5.1	U	UG/K
TRANS-1,3-DICHLOROPROPENE	5.1	U	UG/K
TRANS-1,4-DICHLORO-2-BUTENE	12.8	U	UG/K
TRICHLOROETHENE	5.1	U	UG/K
TRICHLOROFLUOROMETHANE	5.1	U	UG/K
VINYL ACETATE	12.8	U	UG/K
VINYL CHLORIDE	5.1	U	UG/K
XYLENES (TOTAL)	10.2	U	UG/K

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VOLATILES

Sample Number: S5SS-5
Sample Date: 9/29/96
Laboratory ID: 9609580-11
QC Type: NORMAL
% Moisture: 47
Location: S5SS-5

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	3.8	U	UG/KG
1,1,1-TRICHLOROETHANE	3.8	U	UG/KG
1,1,2,2-TETRACHLOROETHANE	3.8	U	UG/KG
1,1,2-TRICHLOROETHANE	3.8	U	UG/KG
1,1-DICHLOROETHANE	3.8	U	UG/KG
1,1-DICHLOROETHENE	3.8	U	UG/KG
1,2,3-TRICHLOROPROPANE	1.9	U	UG/KG
1,2-DIBROMO-3-CHLOROPROPANE	1.9	U	UG/KG
1,2-DIBROMOETHANE	1.9	U	UG/KG
1,2-DICHLOROETHANE	3.8	U	UG/KG
1,2-DICHLOROPROPANE	3.8	U	UG/KG
2-BUTANONE	9.4	U	UG/KG
2-CHLORO-1,3-BUTADIENE	1.9	UR	UG/KG
2-HEXANONE	9.4	U	UG/KG
4-METHYL-2-PENTANONE	9.4	U	UG/KG
ACETONE	18.9	U	UG/KG
ACETONITRILE	9.4	U	UG/KG
ACROLEIN	18.9	UR	UG/KG
ACRYLONITRILE	18.9	U	UG/KG
ALLYL CHLORIDE	9.4	U	UG/KG
BENZENE	3.8	U	UG/KG
BIS(2-CHLOROISOPROPYL)ETHER	18.9	U	UG/KG
BROMODICHLOROMETHANE	3.8	U	UG/KG
BROMOFORM	3.8	U	UG/KG
BROMOMETHANE	3.8	U	UG/KG
CARBON DISULFIDE	9.4	U	UG/KG
CARBON TETRACHLORIDE	3.8	U	UG/KG
CHLOROBENZENE	3.8	U	UG/KG
CHLORODIBROMOMETHANE	3.8	U	UG/KG
CHLOROETHANE	3.8	U	UG/KG
CHLOROFORM	3.8	U	UG/KG
CHLOROMETHANE	3.8	U	UG/KG
CIS-1,3-DICHLOROPROPENE	3.8	U	UG/KG
DIBROMOMETHANE	3.8	U	UG/KG
DICHLORODIFLUOROMETHANE	3.8	U	UG/KG
ETHYL CYANIDE	18.9	UR	UG/KG
ETHYLBENZENE	3.8	U	UG/KG
IODOMETHANE	4.7	U	UG/KG
ISOBUTYL ALCOHOL	18.9	UR	UG/KG
METHACRYLONITRILE	9.4	UR	UG/KG
METHYL METHACRYLATE	9.4	U	UG/KG
METHYLENE CHLORIDE	9	U	UG/KG
STYRENE	3.8	U	UG/KG
TETRACHLOROETHENE	3.4	J	UG/KG
TOLUENE	3.8	U	UG/KG
TRANS-1,2-DICHLOROETHENE	3.8	U	UG/KG
TRANS-1,3-DICHLOROPROPENE	3.8	U	UG/KG
TRANS-1,4-DICHLORO-2-BUTENE	9.4	U	UG/KG
TRICHLOROETHENE	3.8	U	UG/KG
TRICHLOROFLUOROMETHANE	3.8	U	UG/KG
VINYL ACETATE	9.4	U	UG/KG
VINYL CHLORIDE	3.8	U	UG/KG
XYLENES (TOTAL)	7.5	U	UG/KG

Sample Number: S5SS-6
Sample Date: 9/29/96
Laboratory ID: 9609580-08
QC Type: NORMAL
% Moisture: 77
Location: S5SS-6

	RESULT	QUAL	UNIT
1,1,1,2-TETRACHLOROETHANE	8.7	U	UG/K
1,1,1-TRICHLOROETHANE	8.7	U	UG/K
1,1,2,2-TETRACHLOROETHANE	8.7	U	UG/K
1,1,2-TRICHLOROETHANE	8.7	U	UG/K
1,1-DICHLOROETHANE	8.7	U	UG/K
1,1-DICHLOROETHENE	8.7	U	UG/K
1,2,3-TRICHLOROPROPANE	4.3	U	UG/K
1,2-DIBROMO-3-CHLOROPROPANE	4.3	U	UG/K
1,2-DIBROMOETHANE	4.3	U	UG/K
1,2-DICHLOROETHANE	8.7	U	UG/K
1,2-DICHLOROPROPANE	8.7	U	UG/K
2-BUTANONE	21.7	U	UG/K
2-CHLORO-1,3-BUTADIENE	4.3	UR	UG/K
2-HEXANONE	21.7	U	UG/K
4-METHYL-2-PENTANONE	21.7	U	UG/K
ACETONE	147		UG/K
ACETONITRILE	21.7	U	UG/K
ACROLEIN	43.5	UR	UG/K
ACRYLONITRILE	43.5	U	UG/K
ALLYL CHLORIDE	21.7	U	UG/K
BENZENE	8.7	U	UG/K
BIS(2-CHLOROISOPROPYL)ETHER	43.5	U	UG/K
BROMODICHLOROMETHANE	8.7	U	UG/K
BROMOFORM	8.7	U	UG/K
BROMOMETHANE	8.7	U	UG/K
CARBON DISULFIDE	21.7	U	UG/K
CARBON TETRACHLORIDE	8.7	U	UG/K
CHLOROBENZENE	8.7	U	UG/K
CHLORODIBROMOMETHANE	8.7	U	UG/K
CHLOROETHANE	8.7	U	UG/K
CHLOROFORM	8.7	U	UG/K
CHLOROMETHANE	8.7	U	UG/K
CIS-1,3-DICHLOROPROPENE	8.7	U	UG/K

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GENERAL ENGINEERING LABS

SDG: 69580S

VOLATILES

DIBROMOMETHANE	8.7	U	UG/KG
DICHLORODIFLUOROMETHANE	8.7	U	UG/KG
ETHYL CYANIDE	43.5	UR	UG/KG
ETHYLBENZENE	8.7	U	UG/KG
IODOMETHANE	10.9	U	UG/KG
ISOBUTYL ALCOHOL	43.5	UR	UG/KG
METHACRYLONITRILE	21.7	UR	UG/KG
METHYL METHACRYLATE	21.7	U	UG/KG
METHYLENE CHLORIDE	22	U	UG/KG
STYRENE	8.7	U	UG/KG
TETRACHLOROETHENE	5.6	J	UG/KG
TOLUENE	8.7	U	UG/KG
TRANS-1,2-DICHLOROETHENE	8.7	U	UG/KG
TRANS-1,3-DICHLOROPROPENE	8.7	U	UG/KG
TRANS-1,4-DICHLORO-2-BUTENE	21.7	U	UG/KG
TRICHLOROETHENE	8.7	U	UG/KG
TRICHLOROFLUOROMETHANE	8.7	U	UG/KG
VINYL ACETATE	21.7	U	UG/KG
VINYL CHLORIDE	8.7	U	UG/KG
XYLENES (TOTAL)	17.4	U	UG/KG

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69580S

PESTICIDES/PCBs

Sample Number: B7SS-01
Sample Date: 9/27/96
Laboratory ID: 9609580-01
QC Type: NORMAL
% Moisture: 56
Location: B7SS-1

	RESULT	QUAL	UNITS
2,4,5-T	4.5	UJ	UG/KG
2,4,5-TP (SILVEX)	4.5	UJ	UG/KG
2,4-D	4.5	UJ	UG/KG
4,4'-DDD	3	U	UG/KG
4,4'-DDE	2.2	J	UG/KG
4,4'-DDT	3	U	UG/KG
ALDRIN	1.5	U	UG/KG
AROCLOR-1016	9.3	U	UG/KG
AROCLOR-1221	9.3	U	UG/KG
AROCLOR-1232	9.3	U	UG/KG
AROCLOR-1242	9.3	U	UG/KG
AROCLOR-1248	9.3	U	UG/KG
AROCLOR-1254	9.3	U	UG/KG
AROCLOR-1260	9.3	U	UG/KG
BETA-BHC	1.5	U	UG/KG
CHLORDANE	18.6	U	UG/KG
DELTA-BHC	1.5	U	UG/KG
DIELDRIN	3	U	UG/KG
ENDOSULFAN I	1.5	U	UG/KG
ENDOSULFAN II	3	U	UG/KG
ENDOSULFAN SULFATE	3	U	UG/KG
ENDRIN	3	U	UG/KG
ENDRIN ALDEHYDE	3	U	UG/KG
GAMMA-BHC (LINDANE)	1.2	J	UG/KG
HEPTACHLOR	1.5	U	UG/KG
HEPTACHLOR EPOXIDE	1.5	U	UG/KG
METHOXYCHLOR	14.9	U	UG/KG
METHYL PARATHION	3.7	U	UG/KG
PARATHION	3.7	U	UG/KG
PHORATE	3.7	U	UG/KG
TOXAPHENE	74.4	U	UG/KG

Sample Number: B7SS-02
Sample Date: 9/27/96
Laboratory ID: 9609580-02
QC Type: NORMAL
% Moisture: 68
Location: B7SS-2

	RESULT	QUAL	UNITS
2,4,5-T	6.1	UJ	UG/KG
2,4,5-TP (SILVEX)	6.1	UJ	UG/KG
2,4-D	6.1	UJ	UG/KG
4,4'-DDD	4.1	U	UG/KG
4,4'-DDE	4.1	U	UG/KG
4,4'-DDT	4.1	U	UG/KG
ALDRIN	2.1	U	UG/KG
ALPHA-BHC	2.1	U	UG/KG
AROCLOR-1016	12.9	U	UG/KG
AROCLOR-1221	12.9	U	UG/KG
AROCLOR-1232	12.9	U	UG/KG
AROCLOR-1242	12.9	U	UG/KG
AROCLOR-1248	12.9	U	UG/KG
AROCLOR-1254	12.9	U	UG/KG
AROCLOR-1260	12.9	U	UG/KG
BETA-BHC	2.1	U	UG/KG
CHLORDANE	25.8	U	UG/KG
DELTA-BHC	2.1	U	UG/KG
DIELDRIN	4.1	U	UG/KG
ENDOSULFAN I	2.1	U	UG/KG
ENDOSULFAN II	4.1	U	UG/KG
ENDOSULFAN SULFATE	4.1	U	UG/KG
ENDRIN	4.1	U	UG/KG
ENDRIN ALDEHYDE	4.1	U	UG/KG
GAMMA-BHC (LINDANE)	2.1	U	UG/KG
HEPTACHLOR	2.1	U	UG/KG
HEPTACHLOR EPOXIDE	2.1	U	UG/KG
METHOXYCHLOR	43.8		UG/KG
METHYL PARATHION	5.2	U	UG/KG
PARATHION	5.2	U	UG/KG
PHORATE	5.2	U	UG/KG
TOXAPHENE	103	U	UG/KG

Sample Number: I7SS-02
Sample Date: 9/30/96
Laboratory ID: 9609580-20
QC Type: NORMAL
% Moisture: 41
Location: I7SS-2

	RESULT	QUAL	UNIT
2,4,5-T	3.4	U	UG/K
2,4,5-TP (SILVEX)	3.4	U	UG/K
2,4-D	3.4	U	UG/K
4,4'-DDD	11.1	U	UG/K
4,4'-DDE	11.1	U	UG/K
4,4'-DDT	19.8		UG/K
ALDRIN	5.5	U	UG/K
ALPHA-BHC	5.5	U	UG/K
AROCLOR-1016	34.6	U	UG/K
AROCLOR-1221	34.6	U	UG/K
AROCLOR-1232	34.6	U	UG/K
AROCLOR-1242	34.6	U	UG/K
AROCLOR-1248	34.6	U	UG/K
AROCLOR-1254	34.6	U	UG/K
AROCLOR-1260	146		UG/K
BETA-BHC	5.5	U	UG/K
CHLORDANE	69.2	U	UG/K
DELTA-BHC	5.5	U	UG/K
DIELDRIN	11.1	U	UG/K
ENDOSULFAN I	5.5	U	UG/K
ENDOSULFAN II	11.1	U	UG/K
ENDOSULFAN SULFATE	11.1	U	UG/K
ENDRIN	13.6		UG/K
ENDRIN ALDEHYDE	11.1	U	UG/K
GAMMA-BHC (LINDANE)	5.5	U	UG/K
HEPTACHLOR	5.5	U	UG/K
HEPTACHLOR EPOXIDE	5.5	U	UG/K
METHOXYCHLOR	55.4	U	UG/K
METHYL PARATHION	13.8	U	UG/K
PARATHION	13.8	U	UG/K
PHORATE	13.8	U	UG/K
TOXAPHENE	277	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69580S

PESTICIDES/PCBs

Sample Number: I7SS-03
Sample Date: 9/30/96
Laboratory ID: 9609580-19
QC Type: NORMAL
% Moisture: 33
Location: I7SS-3

	RESULT	QUAL	UNITS
2,4,5-T	3	U	UG/KG
2,4,5-TP (SILVEX)	3	U	UG/KG
2,4-D	3	U	UG/KG
4,4'-DDD	2	U	UG/KG
4,4'-DDE	2.8		UG/KG
4,4'-DDT	2	U	UG/KG
ALDRIN	0.98	U	UG/KG
ALPHA-BHC	0.98	U	UG/KG
AROCLOR-1016	6.2	U	UG/KG
AROCLOR-1221	6.2	U	UG/KG
AROCLOR-1232	6.2	U	UG/KG
AROCLOR-1242	6.2	U	UG/KG
AROCLOR-1248	6.2	U	UG/KG
AROCLOR-1254	6.2	U	UG/KG
AROCLOR-1260	6.2	U	UG/KG
BETA-BHC	0.98	U	UG/KG
CHLORDANE	12.3	U	UG/KG
DELTA-BHC	0.98	U	UG/KG
DIELDRIN	2	U	UG/KG
ENDOSULFAN I	2.4		UG/KG
ENDOSULFAN II	2	U	UG/KG
ENDOSULFAN SULFATE	2	U	UG/KG
ENDRIN	2	U	UG/KG
ENDRIN ALDEHYDE	2	U	UG/KG
GAMMA-BHC (LINDANE)	0.98	U	UG/KG
HEPTACHLOR	0.56	J	UG/KG
HEPTACHLOR EPOXIDE	0.98	U	UG/KG
METHOXYCHLOR	9.8	U	UG/KG
METHYL PARATHION	2.5	U	UG/KG
PARATHION	2.5	U	UG/KG
PHORATE	2.5	U	UG/KG
TOXAPHENE	49.2	U	UG/KG

Sample Number: I7SS-05
Sample Date: 9/30/96
Laboratory ID: 9609580-18
QC Type: NORMAL
% Moisture: 30
Location: I7SS-5

	RESULT	QUAL	UNITS
2,4,5-T	2.8	U	UG/KG
2,4,5-TP (SILVEX)	2.8	U	UG/KG
2,4-D	2.8	U	UG/KG
4,4'-DDD	4.5		UG/KG
4,4'-DDE	23.2		UG/KG
4,4'-DDT	32.1		UG/KG
ALDRIN	0.93	U	UG/KG
ALPHA-BHC	0.93	U	UG/KG
AROCLOR-1016	5.8	U	UG/KG
AROCLOR-1221	5.8	U	UG/KG
AROCLOR-1232	5.8	U	UG/KG
AROCLOR-1242	5.8	U	UG/KG
AROCLOR-1248	5.8	U	UG/KG
AROCLOR-1254	47	J	UG/KG
AROCLOR-1260	5.8	U	UG/KG
BETA-BHC	0.93	U	UG/KG
CHLORDANE	11.6	U	UG/KG
DELTA-BHC	0.93	U	UG/KG
DIELDRIN	1.8	U	UG/KG
ENDOSULFAN I	2.9		UG/KG
ENDOSULFAN II	1.8	U	UG/KG
ENDOSULFAN SULFATE	1.8	U	UG/KG
ENDRIN	1.8	U	UG/KG
ENDRIN ALDEHYDE	1.8	U	UG/KG
GAMMA-BHC (LINDANE)	0.93	U	UG/KG
HEPTACHLOR	0.93	U	UG/KG
HEPTACHLOR EPOXIDE	0.93	U	UG/KG
METHOXYCHLOR	9.3	U	UG/KG
METHYL PARATHION	2.3	U	UG/KG
PARATHION	2.3	U	UG/KG
PHORATE	2.3	U	UG/KG
TOXAPHENE	46.3	U	UG/KG

Sample Number: I7SS-06
Sample Date: 9/30/96
Laboratory ID: 9609580-17
QC Type: NORMAL
% Moisture: 50
Location: I7SS-6

	RESULT	QUAL	UNIT
2,4,5-T	4	U	UG/K
2,4,5-TP (SILVEX)	4	U	UG/K
2,4-D	4	U	UG/K
4,4'-DDD	2.6	U	UG/K
4,4'-DDE	2.6	U	UG/K
4,4'-DDT	2.6	U	UG/K
ALDRIN	1.3	U	UG/K
ALPHA-BHC	1.3	U	UG/K
AROCLOR-1016	8.3	U	UG/K
AROCLOR-1221	8.3	U	UG/K
AROCLOR-1232	8.3	U	UG/K
AROCLOR-1242	8.3	U	UG/K
AROCLOR-1248	8.3	U	UG/K
AROCLOR-1254	8.3	U	UG/K
AROCLOR-1260	8.3	U	UG/K
BETA-BHC	1.3	U	UG/K
CHLORDANE	16.6	U	UG/K
DELTA-BHC	1.3	U	UG/K
DIELDRIN	2.6	U	UG/K
ENDOSULFAN I	1.3	U	UG/K
ENDOSULFAN II	2.6	U	UG/K
ENDOSULFAN SULFATE	2.6	U	UG/K
ENDRIN	2.6	U	UG/K
ENDRIN ALDEHYDE	2.6	U	UG/K
GAMMA-BHC (LINDANE)	1.3	U	UG/K
HEPTACHLOR	1.3	U	UG/K
HEPTACHLOR EPOXIDE	1.3	U	UG/K
METHOXYCHLOR	13.2	U	UG/K
METHYL PARATHION	3.3	U	UG/K
PARATHION	3.3	U	UG/K
PHORATE	3.3	U	UG/K
TOXAPHENE	66.3	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69580S

PESTICIDES/PCBs

Sample Number: I7SS-07
Sample Date: 9/30/96
Laboratory ID: 9609580-16
QC Type: NORMAL
% Moisture: 45
Location: I7SS-7

	RESULT	QUAL	UNITS
2,4,5-T	3.6	U	UG/KG
2,4,5-TP (SILVEX)	3.6	U	UG/KG
2,4-D	3.6	U	UG/KG
4,4'-DDD	2.6		UG/KG
4,4'-DDE	2.3	J	UG/KG
4,4'-DDT	2.4	U	UG/KG
ALDRIN	1.2	U	UG/KG
ALPHA-BHC	1.2	U	UG/KG
AROCLOR-1016	7.5	U	UG/KG
AROCLOR-1221	7.5	U	UG/KG
AROCLOR-1232	7.5	U	UG/KG
AROCLOR-1242	7.5	U	UG/KG
AROCLOR-1248	7.5	U	UG/KG
AROCLOR-1254	7.5	U	UG/KG
AROCLOR-1260	7.5	U	UG/KG
BETA-BHC	1.2	U	UG/KG
CHLORDANE	15	U	UG/KG
DELTA-BHC	1.2	U	UG/KG
DIELDRIN	2.4	U	UG/KG
ENDOSULFAN I	1.2	U	UG/KG
ENDOSULFAN II	2.4	U	UG/KG
ENDOSULFAN SULFATE	2.4	U	UG/KG
ENDRIN	2.4	U	UG/KG
ENDRIN ALDEHYDE	2.4	U	UG/KG
GAMMA-BHC (LINDANE)	1.2	U	UG/KG
HEPTACHLOR	1.2	U	UG/KG
HEPTACHLOR EPOXIDE	1.2	U	UG/KG
METHOXYCHLOR	12	U	UG/KG
METHYL PARATHION	3	U	UG/KG
PARATHION	3	U	UG/KG
PHORATE	3	U	UG/KG
TOXAPHENE	60.1	U	UG/KG

Sample Number: I7SS-08
Sample Date: 9/30/96
Laboratory ID: 9609580-15
QC Type: NORMAL
% Moisture: 56
Location: I7SS-8

	RESULT	QUAL	UNITS
2,4,5-T	4.5	U	UG/KG
2,4,5-TP (SILVEX)	4.5	U	UG/KG
2,4-D	4.5	U	UG/KG
4,4'-DDD	3	U	UG/KG
4,4'-DDE	3	U	UG/KG
4,4'-DDT	3	U	UG/KG
ALDRIN	1.5	U	UG/KG
ALPHA-BHC	1.5	U	UG/KG
AROCLOR-1016	9.2	U	UG/KG
AROCLOR-1221	9.2	U	UG/KG
AROCLOR-1232	9.2	U	UG/KG
AROCLOR-1242	9.2	U	UG/KG
AROCLOR-1248	9.2	U	UG/KG
AROCLOR-1254	9.2	U	UG/KG
AROCLOR-1260	9.2	U	UG/KG
BETA-BHC	1.5	U	UG/KG
CHLORDANE	18.5	U	UG/KG
DELTA-BHC	1.5	U	UG/KG
DIELDRIN	3	U	UG/KG
ENDOSULFAN I	1.5	U	UG/KG
ENDOSULFAN II	3	U	UG/KG
ENDOSULFAN SULFATE	3	U	UG/KG
ENDRIN	3	U	UG/KG
ENDRIN ALDEHYDE	3	U	UG/KG
GAMMA-BHC (LINDANE)	1.5	J	UG/KG
HEPTACHLOR	1.5	U	UG/KG
HEPTACHLOR EPOXIDE	1.5	U	UG/KG
METHOXYCHLOR	14.8	U	UG/KG
METHYL PARATHION	3.7	U	UG/KG
PARATHION	3.7	U	UG/KG
PHORATE	3.7	U	UG/KG
TOXAPHENE	74	U	UG/KG

Sample Number: I7SS-09
Sample Date: 9/30/96
Laboratory ID: 9609580-14
QC Type: NORMAL
% Moisture: 62
Location: I7SS-9

	RESULT	QUAL	UNIT
2,4,5-T	5.2	U	UG/K
2,4,5-TP (SILVEX)	5.2	U	UG/K
2,4-D	5.2	U	UG/K
4,4'-DDD	3.4	U	UG/K
4,4'-DDE	3.4	U	UG/K
4,4'-DDT	3.4	U	UG/K
ALDRIN	1.7	U	UG/K
ALPHA-BHC	1.7	U	UG/K
AROCLOR-1016	10.7	U	UG/K
AROCLOR-1221	10.7	U	UG/K
AROCLOR-1232	10.7	U	UG/K
AROCLOR-1242	10.7	U	UG/K
AROCLOR-1248	10.7	U	UG/K
AROCLOR-1254	10.7	U	UG/K
AROCLOR-1260	10.7	U	UG/K
BETA-BHC	1.7	U	UG/K
CHLORDANE	21.4	U	UG/K
DELTA-BHC	1.7	U	UG/K
DIELDRIN	3.4	U	UG/K
ENDOSULFAN I	1.7	U	UG/K
ENDOSULFAN II	3.4	U	UG/K
ENDOSULFAN SULFATE	3.4	U	UG/K
ENDRIN	3.4	U	UG/K
ENDRIN ALDEHYDE	3.4	U	UG/K
GAMMA-BHC (LINDANE)	2	J	UG/K
HEPTACHLOR	1.7	U	UG/K
HEPTACHLOR EPOXIDE	1.7	U	UG/K
METHOXYCHLOR	17.1	U	UG/K
METHYL PARATHION	4.3	U	UG/K
PARATHION	4.3	U	UG/K
PHORATE	4.3	U	UG/K
TOXAPHENE	85.5	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 69580S

PESTICIDES/PCBs

Sample Number: I7SS-10
Sample Date: 9/30/96
Laboratory ID: 9609580-13
QC Type: NORMAL
% Moisture: 49
Location: I7SS-10

	RESULT	QUAL	UNITS
2,4,5-T	3.9	U	UG/KG
2,4,5-TP (SILVEX)	3.9	U	UG/KG
2,4-D	3.9	U	UG/KG
4,4'-DDD	2.6	U	UG/KG
4,4'-DDE	2.6	U	UG/KG
4,4'-DDT	2.6	U	UG/KG
ALDRIN	1.3	U	UG/KG
ALPHA-BHC	1.3	U	UG/KG
AROCLOR-1016	8	U	UG/KG
AROCLOR-1221	8	U	UG/KG
AROCLOR-1232	8	U	UG/KG
AROCLOR-1242	8	U	UG/KG
AROCLOR-1248	8	U	UG/KG
AROCLOR-1254	8	U	UG/KG
AROCLOR-1260	8	U	UG/KG
BETA-BHC	1.3	U	UG/KG
CHLORDANE	16	U	UG/KG
DELTA-BHC	1.3	U	UG/KG
DIELDRIN	2.6	U	UG/KG
ENDOSULFAN I	1.3	U	UG/KG
ENDOSULFAN II	2.6	U	UG/KG
ENDOSULFAN SULFATE	2.6	U	UG/KG
ENDRIN	2.6	U	UG/KG
ENDRIN ALDEHYDE	2.6	U	UG/KG
GAMMA-BHC (LINDANE)	1.3	U	UG/KG
HEPTACHLOR	1.3	U	UG/KG
HEPTACHLOR EPOXIDE	1.3	U	UG/KG
METHOXYCHLOR	12.8	U	UG/KG
METHYL PARATHION	3.2	U	UG/KG
PARATHION	3.2	U	UG/KG
PHORATE	3.2	U	UG/KG
TOXAPHENE	63.8	U	UG/KG

INORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 20, 1997**
FROM:	**TERESA M. HUDSON**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA REVIEW – TAL METALS AND CYANIDE**
CTO 007 – KEY WEST, FLORIDA
SDG – 6A017W

SAMPLES: 19/AQUEOUS/

S5MW-4	RB07-100196	S7SW-04	ABSW-06
S5MW-5	S7MW-1	S7SW-07	ABSW-10
S5MW-3	S7MW-3	S7SW-08	RB08-100396
S5MW-2	S7MW-2	S7SW-05	ABMW-2
S5DPGW	S7SW-06	I3MW-3	

Introduction

A data review was performed on the inorganic analytical data from CTO 007, NAS Key West, SDG No.6A017W. Nineteen (19) aqueous samples were included for TAL metals and cyanide. One (1) field duplicate pair (S5MW-2/S5DPGW) was cluded within this SDG.

All samples were analyzed for Target Analyte List (TAL) metals and cyanide. The samples were collected by Brown and Root Environmental on September 30, October 1, 2, and 3, 1996 and analyzed by General Engineering Laboratory under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- Calibration Verifications
- * Laboratory Blank Analyses
- Matrix Spike Results

* Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/ preparation/ field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level (aqueous)
antimony	5.3 ug/L	26.5 ug/L
arsenic	4.1 ug/L	20.5 ug/L
barium[1]	0.5 ug/L	2.5 ug/L
beryllium	2 ug/L	10 ug/L
cadmium	0.4 ug/L	2 ug/L
calcium[1]	160 ug/L	800 ug/L
copper[1]	5.1 ug/L	25.5 ug/L
iron[1]	28.1 ug/L	140.5 ug/L
lead	2.6 ug/L	13 ug/L
magnesium[1]	18.8 ug/L	94 ug/L
potassium	68.1 ug/L	340.5 ug/L
sodium[1]	87.6 ug/L	438 ug/L
zinc	1.4 ug/L	7 ug/L

Samples affected: All.

[1] Maximum concentration found in a field blank.

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contaminatic Dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for antimony, arsenic, beryllium, cadmium, copper, iron, lead, potassium, and vanadium have been qualified as nondetected, "U." No action was taken for the remaining analytes since the results were either positive and greater than the action level or nondetect. If the maximum concentration was found in a field blank, no action was taken for other field blanks.

Notes

It was noted that S7SW05 was analyzed at 100 fold dilution for sodium; the remaining ICP analytes were analyzed at 2 fold dilution except for mercury and cyanide.

It was noted that ABSW06, ABSW10, and ABMW2 were analyzed at a 500 fold dilution for magnesium and sodium; the remaining ICP analytes were analyzed at a 2 fold dilution except for calcium and cyanide.

It was noted that S5MW5, S5MW3, S5MW2, S5DPGW, RB071001, and S7MW2 were analyzed at 2 fold dilution except for mercury and cyanide, and S5MW4 was analyzed at a 2 fold dilution except for mercury, sodium, and cyanide.

It was noted that S7MW1, S7MW3, S7MW06, S7SW04, and S7SW07 were analyzed at a 2 fold dilution for all analytes except for mercury, sodium, and cyanide. S7SW08 and I3MW3 were analyzed at 2 fold dilution except for calcium, mercury, sodium, and cyanide.

The Continuing Calibration Verification (CCV) Percent Recovery (R%) for vanadium was outside the quality control limits. However, no validation actions were warranted.

It was noted that selenium was below the quality control limit for Contract Required Detection Limit (CRDL) Percent Recoveries (R%). However, no validation actions were taken for CRDL R%.

It was noted that Matrix Spike (MS) Percent Recovery (%R) for antimony, arsenic, cyanide, selenium, and thallium were below the quality control limits. MS %R were not low enough to require qualification for these analytes.

A comparison of field duplicate pairs S5MW-2 and S5DPGW can be found in Appendix C. However, no validation actions are required for field duplicate imprecision.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method blank.

Other Factors Affecting Data Quality: None.

No other problems were encountered in this case.

The data for these analyses were reviewed in accordance with the "National Functional Guidelines for Inorganic Review," February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Teresa M Hudson
Brown & Root Environmental
Teresa M. Hudson
Environmental Scientist/Data Validator

Julia F Bradley
Brown & Root Environmental
for Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation.

KEY WEST
SDG – 6A017W

TABLE 1 - RECOMMENDATION SUMMARY

Aluminum		Magnesium	
Antimony	A[1]	Manganese	
Arsenic	A[1]	Mercury	
Barium		Nickel	
Beryllium	A[1]	Potassium	A[1]
Cadmium	A[1]	Selenium	
Calcium		Silver	
Chromium		Sodium	
Cobalt		Thallium	
Copper	A[1]	Vanadium	A[1]
Iron	A[1]	Zinc	
Lead	A[1]	Cyanide	

If the field is left blank, the qualifier is A - Accept all data.

A[1] - Accept data but qualify as nondetected, "U," as a result of laboratory blank contamination.

APPENDIX A
Qualified Analytical Results

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

INORGANICS

Sample Number: ABMW2
Sample Date: 10/3/96
Laboratory ID: 9610017-20
QC Type: NORMAL
% Moisture: 0
Location: ABMW-2

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4.4	U	UG/L
ARSENIC	4	U	UG/L
BARIUM	18.8		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	448000		UG/L
CHROMIUM	2.2		UG/L
COBALT	2	U	UG/L
COPPER	4.1	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	144	U	UG/L
LEAD	4.8	U	UG/L
MAGNESIUM	1430000		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	311000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	12500000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: ABSW06
Sample Date: 10/2/96
Laboratory ID: 9610017-17
QC Type: NORMAL
% Moisture: 0
Location: ABSW-6

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	8.6	U	UG/L
BARIUM	10.9		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	295000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	4	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	1160000		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.21		UG/L
NICKEL	4	U	UG/L
POTASSIUM	260000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	9920000		UG/L
THALLIUM	4.1		UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: ABSW10
Sample Date: 10/2/96
Laboratory ID: 9610017-18
QC Type: NORMAL
% Moisture: 0
Location: ABSW-10

	RESULT	QUAL	UNIT
ALUMINUM	28	U	UG/L
ANTIMONY	6.3	U	UG/L
ARSENIC	4	U	UG/L
BARIUM	11.7		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	300000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	9	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	4	U	UG/L
LEAD	4.3	U	UG/L
MAGNESIUM	1130000		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.26		UG/L
NICKEL	4	U	UG/L
POTASSIUM	264000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	9760000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

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GENERAL ENGINEERING LABS

SDG: 6A017W

INORGANICS

Sample Number: I3MW3
Sample Date: 10/2/96
Laboratory ID: 9610017-16
QC Type: NORMAL
% Moisture: 0
Location: I3MW-3

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	6.2	U	UG/L
BARIUM	21.8		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	173000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	5.7	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	4	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	207000		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.12		UG/L
NICKEL	4	U	UG/L
POTASSIUM	72300		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	1830000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	4.8		UG/L
ZINC	2	U	UG/L

Sample Number: RB07100196
Sample Date: 10/1/96
Laboratory ID: 9610017-06
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	4	U	UG/L
BARIUM	0.5		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	122		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	14.5		UG/L
LEAD	3	U	UG/L
MAGNESIUM	18.8		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	40	U	UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	87.6		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: RB08100396
Sample Date: 10/3/96
Laboratory ID: 9610017-19
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNIT
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	4	U	UG/L
BARIUM	0.47		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	160		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	5.1		UG/L
CYANIDE	1.4	U	UG/L
IRON	28.1		UG/L
LEAD	3	U	UG/L
MAGNESIUM	15.1		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	40	U	UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	65.8		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

INORGANICS

Sample Number: S5DPGW
Sample Date: 9/30/96
Laboratory ID: 9610017-05
QC Type: NORMAL
% Moisture: 0
Location: S5DPGW

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	5.6	U	UG/L
BARIUM	12.3		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.63	U	UG/L
CALCIUM	112000		UG/L
CHROMIUM	2.3		UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	76.4	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	7160		UG/L
MANGANESE	3.5		UG/L
MERCURY	9.4		UG/L
NICKEL	4	U	UG/L
POTASSIUM	5350		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	21500		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2.4		UG/L
ZINC	52		UG/L

Sample Number: S5MW2
Sample Date: 9/30/96
Laboratory ID: 9610017-04
QC Type: NORMAL
% Moisture: 0
Location: S5MW-2

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	50.4		UG/L
ARSENIC	15	U	UG/L
BARIUM	5.4		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	41400		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	9.6	U	UG/L
CYANIDE	2.2		UG/L
IRON	98.2	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	34400		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	9000		UG/L
SELENIUM	4	U	UG/L
SILVER	2.7		UG/L
SODIUM	66100		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2.3		UG/L
ZINC	2	U	UG/L

Sample Number: S5MW3
Sample Date: 9/30/96
Laboratory ID: 9610017-03
QC Type: NORMAL
% Moisture: 0
Location: S5MW-3

	RESULT	QUAL	UNIT
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	5.9	U	UG/L
BARIUM	12.2		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.44	U	UG/L
CALCIUM	107000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	27.7	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	7280		UG/L
MANGANESE	3		UG/L
MERCURY	0.26		UG/L
NICKEL	4	U	UG/L
POTASSIUM	5350		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	20700		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2.3		UG/L
ZINC	52.4		UG/L

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GENERAL ENGINEERING LABS

SDG: 6A017W

INORGANICS

Sample Number: S5MW4
Sample Date:
Laboratory ID: 9610017-01
QC Type:
% Moisture:
Location:

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	12.6	U	UG/L
ARSENIC	6.4	U	UG/L
BARIUM	8		UG/L
BERYLLIUM	1.2	U	UG/L
CADMIUM	1.2	U	UG/L
CALCIUM	49000		UG/L
CHROMIUM	2.1		UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	31.1	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	18400		UG/L
MANGANESE	2.2		UG/L
MERCURY	0.24		UG/L
NICKEL	4	U	UG/L
POTASSIUM	7090		UG/L
SELENIUM	4	U	UG/L
SILVER	3.3		UG/L
SODIUM	117000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	3.9		UG/L
ZINC	2	U	UG/L

Sample Number: S5MW5
Sample Date:
Laboratory ID: 9610017-02
QC Type:
% Moisture:
Location:

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	27.3	U	UG/L
BARIUM	11.2		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.48	U	UG/L
CALCIUM	48200		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	20.2	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	30300		UG/L
MANGANESE	4.4		UG/L
MERCURY	0.19		UG/L
NICKEL	4	U	UG/L
POTASSIUM	5160		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	70300		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: S7MW1
Sample Date: 10/1/96
Laboratory ID: 9610017-07
QC Type: NORMAL
% Moisture: 0
Location: S7MW-1

	RESULT	QUAL	UNIT
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	9.4	U	UG/L
BARIUM	10		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	146000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	23.5	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	68300		UG/L
MANGANESE	9		UG/L
MERCURY	0.24		UG/L
NICKEL	4	U	UG/L
POTASSIUM	16800		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	486000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

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SDG: 6A017W

INORGANICS

Sample Number: S7MW2
Sample Date: 10/1/96
Laboratory ID: 9610017-09
QC Type: NORMAL
% Moisture: 0
Location: S7MW-2

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	6.7	U	UG/L
BARIUM	6.4		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	79000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	29.8	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	4290		UG/L
MANGANESE	2.3		UG/L
MERCURY	0.23		UG/L
NICKEL	4	U	UG/L
POTASSIUM	253	U	UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	6830		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: S7MW3
Sample Date: 10/1/96
Laboratory ID: 9610017-08
QC Type: NORMAL
% Moisture: 0
Location: S7MW-3

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	15.7	U	UG/L
BARIUM	13		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	136000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4.5	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	202	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	59700		UG/L
MANGANESE	6.2		UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	23600		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	517000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: S7SW04
Sample Date: 10/1/96
Laboratory ID: 9610017-12
QC Type: NORMAL
% Moisture: 0
Location: S7SW-4

	RESULT	QUAL	UNIT
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	6.4	U	UG/L
BARIUM	9.9		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	76200		UG/L
CHROMIUM	2.7		UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	2.6		UG/L
IRON	222	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	79700		UG/L
MANGANESE	10.3		UG/L
MERCURY	0.34		UG/L
NICKEL	4	U	UG/L
POTASSIUM	38200		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	674000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

INORGANICS

Sample Number: S7SW05
Sample Date: 10/1/96
Laboratory ID: 9610017-15
QC Type: NORMAL
% Moisture: 0
Location: S7SW-5

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	4.5	U	UG/L
BARIUM	8.1		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	82700		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	81.2	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	89000		UG/L
MANGANESE	8.8		UG/L
MERCURY	0.17		UG/L
NICKEL	4	U	UG/L
POTASSIUM	32500		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	706000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: S7SW06
Sample Date: 10/1/96
Laboratory ID: 9610017-11
QC Type: NORMAL
% Moisture: 0
Location: S7SW-6

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	6.6	U	UG/L
BARIUM	9.9		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	73500		UG/L
CHROMIUM	2.3		UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	168		UG/L
LEAD	3	U	UG/L
MAGNESIUM	81200		UG/L
MANGANESE	13.2		UG/L
MERCURY	0.12		UG/L
NICKEL	4	U	UG/L
POTASSIUM	41400		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	715000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: S7SW07
Sample Date: 10/1/96
Laboratory ID: 9610017-13
QC Type: NORMAL
% Moisture: 0
Location: S7SW-7

	RESULT	QUAL	UNIT
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	6.5	U	UG/L
BARIUM	8.8		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	77500		UG/L
CHROMIUM	2.6		UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	202	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	78900		UG/L
MANGANESE	8.7		UG/L
MERCURY	0.13		UG/L
NICKEL	4	U	UG/L
POTASSIUM	34900		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	645000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

INORGANICS

Sample Number: S7SW08
Sample Date: 10/1/96
Laboratory ID: 9610017-14
QC Type: NORMAL
% Moisture: 0
Location: S7SW-8

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	5.4	U	UG/L
BARIUM	8		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	65000		UG/L
CHROMIUM	2.5		UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	157	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	65800		UG/L
MANGANESE	9.1		UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	28700		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	529000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

ORGANIC DATA VALIDATION

INTERNAL CORRESPONDENCE

TO:	CHUCK BRYAN	DATE:	FEBRUARY 3, 1997
FROM:	EDWARD A. INABINETT	COPIES:	DV FILE

SUBJECT: ORGANIC DATA REVIEW - VOA/SVOA/PEST/PCB/HERB
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG 6A017W

SAMPLES: 20/Water:

S5MW-4	S7MW-1	S7SW-07	ABSW-10
S5MW-5	S7MW-3	S7SW-08	ABMW-2
S5MW-3	S7MW-2	S7SW-05	RB07-100196
S5MW-2	S7SW-06	I3MW-3	TB08-100196
S5DPGW	S7SW-04	ABSW-06	RB08-100396

The sample set for the CTO 007 NAS Key West site, SDG 6A017W, consists of seventeen (17) water environmental samples and three (3) field quality control blanks. All samples were analyzed for Appendix IX volatile and semivolatile compounds, plus the samples were also analyzed for Target Compound List (TCL) pesticide/PCB and herbicide organic compounds. One field duplicate pair was included in this SDG(S5DPGW/S5MW-2).

The samples were collected by Brown and Root Environmental on Septemter 26th, 28th, 30th, and October 1st through October 3rd, 1996 and analyzed by General Engineering Laboratories, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. Sample ABMW-2 was analyzed for volatile aromatic compounds by EPA Method 602. Other analyses were conducted using EPA SW-846 Methods 8240, 8270, 8080, and 8150 analytical and reporting protocols. The data were evaluated according to the following parameters:

- Holding times
- GC/MS Tuning
- * Initial and continuing calibrations
- * Laboratory and field blank analyses
- * Compound Quantitation
- Field Duplicate Precision

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Volatiles

The laboratory method blank analysis yielded the following contaminants at the maximum concentration indicated.

Compound	Maximum Concentration	Action Level
acetone	2.50 µg/L	25.0 µg/L
toluene	0.38 µg/L	1.9 µg/L

Percent moisture, sample aliquot size, and dilution factors were considered prior to the application of the action level. The positive results for acetone and toluene reported above the detection limit but below the action level were qualified as undetected, "U". Positive results for acetone and toluene found below the detection limit have been deleted and replaced by the detection limit value, then qualified as undetected, "U". This affected samples RB07-100196, TB08-100196, and RB08-100396.

The laboratory method blank analysis for EPA Method 602 yielded the following contaminant at the maximum concentration indicated. This affected sample ABMW-2.

Compound	Maximum Concentration	Action Level
toluene	1.6 µg/L	8.0 µg/L
1,2-dichlorobenzene	1.3 µg/L	6.5 µg/L

Percent moisture, sample aliquot size, and dilution factors were considered prior to the application of the action level. Positive results for toluene found below the detection limit have been deleted and replaced by the detection limit value, then qualified as undetected, "U". 1,2-dichlorobenzene was not detected in sample ABSW-2.

No other problems were noted.

Semivolatiles

The inital calibration Relative Response Factor (RRF) for 4-nitroquinoline-1-oxide was less than 0.05. Failure to meet this quality control criteria indicates that the laboratory's instruments could not achieve satisfactory sensitivity for this compound, and therefore, the associated positive and nondetected results for this compound is severely compromised. This affected nondetected results reported for this compound in samples S5MW-4, S5MW-5, S5MW-2, S5MW-3, S5DPGW, S7SW-06, S7SW-04, S7SW-07, S7SW-08, S7SW-05, and RB07-100196. These nondetects were considered to be unreliable and were rejected, "UR".

No other problems were noted.

Pesticide/PCBs

The field quality control blank analysis yielded the following contaminants at the maximum concentration indicated.

Compound	Maximum Concentration	Action Level
delta-BHC	0.036 µg/L	0.18 µg/L
heptachlor	0.110 µg/L	0.55 µg/L
endosulfan I	0.076 µg/L	0.38 µg/L
dieldrin	0.140 µg/L	0.70 µg/L
4,4'-DDE	0.062 µg/L	0.31 µg/L
4,4'-DDD	0.360 µg/L	1.80 µg/L
endosulfan sulfate	0.370 µg/L	1.85 µg/L
4,4'-DDT	0.400 µg/L	2.00 µg/L
endrin aldehyde	0.300 µg/L	1.50 µg/L

Percent moisture, sample aliquot size, and dilution factors were considered prior to the application of the action level. All samples reported nondetected results for these compounds. No action was taken.

The laboratory qualifier "P" was removed from all target compound data with a %D above 25% and less than 100% between positive results on columns 1 and 2. This affected sample RB08-100396.

Sample RB08-100396 had high %Ds (greater than 100%) between positive results on columns 1 and 2 for heptachlor, delta-BHC, and 4,4'-DDE. Positive results for these compounds were qualified as estimated "J".

No other problems were noted.

Herbicides

The field quality control blank analysis yielded the following contaminants at the maximum concentration indicated.

Compound	Maximum Concentration	Action Level
2,4,5-T	0.60 µg/L	3.0 µg/L
2,4,5-TP (Silvex)	0.66 µg/L	3.3 µg/L

Percent moisture, sample aliquot size, and dilution factors were considered prior to the application of the action level. Positive results for these compounds found below the detection limit have been deleted and replaced by the detection limit value, then qualified as undetected, "U". This affected sample ABMW-2.

The laboratory qualifier "P" was removed from all target compound data with a %D above 25% and less than 100% between positive results on columns 1 and 2. This affected sample ABMW-2.

An addendum to the herbicide data package provided additional forms and raw data for this SDG. According to the case narrative in the addendum, samples RB08-100396 and ABMW-2 were re-extracted out of holding to confirm concentrations of target analytes. The analyte concentratons were not confirmed. Since the re-extraction was performed grossly outside of holding times, the data in the addendum could not be considered reliable and the original data was used. Since the original data could not be confirmed, positive results for 2,4-D in sample ABMW-2 were estimated, "J". For the same reason, positive results for 2,4,5-T and 2,4,5-TP (Silvex) in sample RB08-100396 were estimated, "J".

No other problems were noted.

Additional Comments

Field duplicate pairs yielded nondetected results for all target compounds. A Chain of Custody entry for sample I3MW-6 could not be found, therefore, the holding time for this sample could not be verified. After discussions with the individuals that collected the samples, it is assumed that this sample was collected on September 28th, 1996 and the holding time was not exceeded.

Executive Summary

Laboratory Performance: The laboratory method blank analysis yielded acetone, toluene, and 1,2-dichlorobenzene as contaminants in the volatile fraction. The field quality control blank analysis yielded delta-BHC, heptachlor, endosulfan I, 4,4'-DDE, 4,4'-DDT, 4,4'-DDD, endosulfan sulfate, and endrin aldehyde in the pesticide fraction. The field quality control blank analysis yielded 2,4,5-T and 2,4,5-TP

(Silvex) in the herbicide fraction. The inital calibration RRF for 4-nitroquinoline-1-oxide was less than 0.05.

Other Factors Affecting Data Quality: Several samples had high %Ds between columns 1 and 2 when being analyzed for pesticide and herbicide compounds.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Brown and Root Environmental

Edward A. Inabinett
Engineer/Data Validator

R. Mark Ray for
Brown and Root Environmental

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

NAS KEY WEST

SDG 6A017W

TABLE 1 - RECOMMENDATION SUMMARY

Sample No.	VOA			SVOA			PEST/PCB			HERB		
S5MW-4						R[1]						
S5MW-5						R[1]						
S5MW-3						R[1]						
S5MW-2						R[1]						
S5DPGW						R[1]						
S7MW-1												
S7MW-3												
S7MW-2												
S7SW-06						R[1]						
S7SW-04						R[1]						
S7SW-07						R[1]						
S7SW-08						R[1]						
S7SW-05						R[1]						
I3MW-3												
ABSW-06												
ABSW-10												
ABMW-2	A[2]									A[3]	J[8,9]	
RB07-100196	A[1]					R[1]						
TB08-100196	A[1,2]											
RB08-100396	A[1]							J[1,2,3,4,5,6,7]			J[9]	

If the field is left blank, the qualifier is A - Accept all data.

A[1] - Accept data, but change positive results for acetone to a revised detection limit and qualify as nondetected "U" as a result of laboratory method blank contamination.

A[2] - Accept data, but change positive results for toluene to a revised detection limit and qualify as nondetected "U" as a result of laboratory method blank contamination.

A[3] - Accept data, but change positive results for 2,4,5-T and 2,4,5-TP (Silvex) to a revised detection limit and qualify as nondetected "U" as a result of field quality control blank contamination.

J^1 - Accept data, but qualify positive results for delta-BHC as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^2 - Accept data, but qualify positive results for heptachlor as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^3 - Accept data, but remove the laboratory qualifier "P" for endosulfan I as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^4 - Accept data, but remove the laboratory qualifier "P" for dieldrin as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^5 - Accept data, but qualify positive results for 4,4'-DDE as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^6 - Accept data, but remove the laboratory qualifier "P" for 4,4'-DDD as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^7 - Accept data, but remove the laboratory qualifier "P" for endrin aldehyde as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^8 - Accept data, but remove the laboratory qualifier "P" for 2,4-D as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^9 - Accept data, but quality positive results as estimated, "J" as a result of analyte concentrations not being confirmed.

R^1 - Reject "UR" nondetected results for 4-nitroquinoline-1-oxide as a result of initial calibration relative response factor less than 0.050.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

SEMIVOLATILES

Sample Number: ABMW-2
Sample Date: 10/3/96
Laboratory ID: 9610017-20
QC Type: NORMAL
% Moisture: 0
Location: ABMW-2

	RESULT	QUAL	UNITS
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ANTHRACENE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
CHRYSENE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PYRENE	10	U	UG/L

Sample Number: RB08-100396
Sample Date: 10/3/96
Laboratory ID: 9610017-19
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	50	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,3-DINITROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROANILINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	20	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
3-NITROANILINE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-METHYLPHENOL	10	U	UG/L
4-NITROANILINE	10	U	UG/L
4-NITROPHENOL	10	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	UR	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	50	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	50	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

SEMIVOLATILES

DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
METHAPYRILENE	50	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L
Triethylphosphorothioate	10	U	UG/L

Sample Number: RBO7100196
Sample Date: 10/1/96
Laboratory ID: 9610017-06
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNIT
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	50	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,3-DINITROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROANILINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
3-NITROANILINE	10	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

SEMIVOLATILES

4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-METHYLPHENOL	10	U	UG/L
4-NITROANILINE	10	U	UG/L
4-NITROPHENOL	20	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	UR	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
IS(2-CHLOROETHOXY)METHANE	10	U	UG/L
IS(2-CHLOROETHYL)ETHER	10	U	UG/L
IS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
UTYL BENZYL PHTHALATE	10	U	UG/L
HLOROBENZILATE	50	U	UG/L
HRYSENE	10	U	UG/L
I-N-BUTYL PHTHALATE	10	U	UG/L
I-N-OCTYL PHTHALATE	10	U	UG/L
IALLATE	10	U	UG/L
IBENZO(A,H)ANTHRACENE	10	U	UG/L
IBENZOFURAN	10	U	UG/L
ETHYL PHTHALATE	10	U	UG/L
METHOATE	50	U	UG/L
METHYL PHTHALATE	10	U	UG/L
NOSEB	10	U	UG/L
PHENYLAMINE	10	U	UG/L

DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
METHAPYRILENE	50	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L

PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L
Triethylphosphorothioate	10	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

SEMIVOLATILES

Sample Number: S5DPGW
Sample Date: 9/30/96
Laboratory ID: 9610017-05
QC Type: NORMAL
% Moisture: 0
Location: S5DPGW

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	50	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,3-DINITROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROANILINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTH[illegible]	10	U	UG/L
3-NITROANILINE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-METHYLPHENOL	10	U	UG/L
4-NITROANILINE	10	U	UG/L
4-NITROPHENOL	20	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	UR	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	50	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	50	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB		U	UG/L
DIPHENYLAMINE		U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
METHAPYRILENE	50	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

SEMIVOLATILES

PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L

Sample Number: S5MW-2
Sample Date: 9/30/96
Laboratory ID: 9610017-04
QC Type: NORMAL
% Moisture: 0
Location: S5MW-2

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	40	U	UG/L
1,2,4-TRICHLOROBENZENE	40	U	UG/L
1,2-DICHLOROBENZENE	40	U	UG/L
1,3,5-TRINITROBENZENE	200	U	UG/L
1,3-DICHLOROBENZENE	40	U	UG/L
1,3-DINITROBENZENE	40	U	UG/L
1,4-DICHLOROBENZENE	40	U	UG/L
1,4-DIOXANE	40	U	UG/L
1,4-NAPHTHOQUINONE	40	U	UG/L
1-NAPHTHYLAMINE	40	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	40	U	UG/L
2,4,5-TRICHLOROPHENOL	40	U	UG/L
2,4,6-TRICHLOROPHENOL	40	U	UG/L
2,4-DICHLOROPHENOL	40	U	UG/L
2,4-DIMETHYLPHENOL	40	U	UG/L
2,4-DINITROPHENOL	80	U	UG/L
2,4-DINITROTOLUENE	40	U	UG/L
2,6-DICHLOROPHENOL	40	U	UG/L
2,6-DINITROTOLUENE	40	U	UG/L
2-ACETYLAMINOFLUORENE	40	U	UG/L
2-CHLORONAPHTHALENE	40	U	UG/L
2-CHLOROPHENOL	40	U	UG/L
2-METHYL-4,6-DINITROPHENOL	40	U	UG/L
2-METHYLNAPHTHALENE	40	U	UG/L
2-METHYLPHENOL	40	U	UG/L
2-NAPHTHYLAMINE	40	U	UG/L
2-NITROANILINE	40	U	UG/L
2-NITROPHENOL	40	U	UG/L
2-PICOLINE	40	U	UG/L
3,3'-DICHLOROBENZIDINE	200	U	UG/L
3,3'-DIMETHYLBENZIDINE	200	U	UG/L
3-METHYLCHOLANTHRENE	40	U	UG/L
3-NITROANILINE	40	U	UG/L
4-AMINOBIPHENYL	40	U	UG/L
4-BROMOPHENYL PHENYL ETHER	40	U	UG/L
4-CHLORO-3-METHYLPHENOL	40	U	UG/L
4-CHLOROANILINE	40	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	40	U	UG/L
4-METHYLPHENOL	40	U	UG/L
4-NITROANILINE	40	U	UG/L
4-NITROPHENOL	80	U	UG/L
4-NITROQUINOLINE-1-OXIDE	40	UR	UG/L
5-NITRO-O-TOLUIDINE	40	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	40	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	40	U	UG/L
ACENAPHTHENE	40	U	UG/L
ACENAPHTHYLENE	40	U	UG/L
ACETOPHENONE	40	U	UG/L
ANILINE	40	U	UG/L
ANTHRACENE	40	U	UG/L
ARAMITE	40	U	UG/L
BENZO(A)ANTHRACENE	40	U	UG/L
BENZO(A)PYRENE	40	U	UG/L
BENZO(B)FLUORANTHENE	40	U	UG/L
BENZO(G,H,I)PERYLENE	40	U	UG/L
BENZO(K)FLUORANTHENE	40	U	UG/L
BENZYL ALCOHOL	40	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	40	U	UG/L
BIS(2-CHLOROETHYL)ETHER	40	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	40	U	UG/L
BUTYL BENZYL PHTHALATE	40	U	UG/L
CHLOROBENZILATE	200	U	UG/L
CHRYSENE	40	U	UG/L
DI-N-BUTYL PHTHALATE	40	U	UG/L
DI-N-OCTYL PHTHALATE	40	U	UG/L
DIALLATE	40	U	UG/L
DIBENZO(A,H)ANTHRACENE	40	U	UG/L
DIBENZOFURAN	40	U	UG/L
DIETHYL PHTHALATE	40	U	UG/L
DIMETHOATE	200	U	UG/L
DIMETHYL PHTHALATE	40	U	UG/L
DINOSEB	40	U	UG/L
DIPHENYLAMINE	40	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

SEMIVOLATILES

DISULFOTON	40	U	UG/L
ETHYL METHACRYLATE	40	U	UG/L
ETHYL METHANESULFONATE	40	U	UG/L
FAMPHUR	40	U	UG/L
FLUORANTHENE	40	U	UG/L
FLUORENE	40	U	UG/L
HEXACHLOROBENZENE	40	U	UG/L
HEXACHLOROBUTADIENE	40	U	UG/L
HEXACHLOROCYCLOPENTADIENE	40	U	UG/L
HEXACHLOROETHANE	40	U	UG/L
HEXACHLOROPROPENE	40	U	UG/L
INDENO(1,2,3-CD) PYRENE	40	U	UG/L
ISODRIN	40	U	UG/L
ISOPHORONE	40	U	UG/L
ISOSAFROLE	40	U	UG/L
KEPONE	40	U	UG/L
METHAPYRILENE	200	U	UG/L
METHYL METHACRYLATE	40	U	UG/L
METHYL METHANESULFONATE	40	U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	40	U	UG/L
N-NITROSODI-N-BUTYLAMINE	40	U	UG/L
N-NITROSODIETHYLAMINE	40	U	UG/L
N-NITROSODIMETHYLAMINE	40	U	UG/L
N-NITROSODIPHENYLAMINE	40	U	UG/L
N-NITROSOMETHYLETHYLAMINE	40	U	UG/L
N-NITROSOMORPHOLINE	40	U	UG/L
N-NITROSOPIPERIDINE	40	U	UG/L
N-NITROSOPYRROLIDINE	40	U	UG/L
NAPHTHALENE	40	U	UG/L
NITROBENZENE	40	U	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	40	U	UG/L
O-TOLUIDINE	40	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	40	U	UG/L
P-PHENYLENEDIAMINE	80	U	UG/L
PENTACHLOROBENZENE	40	U	UG/L
PENTACHLOROETHANE	40	U	UG/L
PENTACHLORONITROBENZENE	40	U	UG/L
PENTACHLOROPHENOL	40	U	UG/L
PHENACETIN	40	U	UG/L
PHENANTHRENE	40	U	UG/L
PHENOL	40	U	UG/L
PRONAMIDE	40	U	UG/L
PYRENE	40	U	UG/L
PYRIDINE	40	U	UG/L
SAFROLE	40	U	UG/L
SULFOTEP	40	U	UG/L
THIONAZIN	40	U	UG/L

Sample Number: S5MW-3
Sample Date: 9/30/96
Laboratory ID: 9610017-03
QC Type: NORMAL
% Moisture: 0
Location: S5MW-3

	RESULT	QUAL	UNIT
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	50	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,3-DINITROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROANILINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
3-NITROANILINE	10	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

SEMIVOLATILES

I-AMINOBIPHENYL	10	U	UG/L
I-BROMOPHENYL PHENYL ETHER	10	U	UG/L
I-CHLORO-3-METHYLPHENOL	10	U	UG/L
I-CHLOROANILINE	10	U	UG/L
I-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
I-METHYLPHENOL	10	U	UG/L
I-NITROANILINE	10	U	UG/L
I-NITROPHENOL	20	U	UG/L
I-NITROQUINOLINE-1-OXIDE	10	UR	UG/L
-NITRO-O-TOLUIDINE	10	U	UG/L
',12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
\,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
\CENAPHTHENE	10	U	UG/L
\CENAPHTHYLENE	10	U	UG/L
\CETOPHENONE	10	U	UG/L
\NILINE	10	U	UG/L
\NTHRACENE	10	U	UG/L
\RAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
IS(2-CHLOROETHOXY)METHANE	10	U	UG/L
IS(2-CHLOROETHYL)ETHER	10	U	UG/L
IS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
UTYL BENZYL PHTHALATE	10	U	UG/L
HLOROBENZILATE	50	U	UG/L
HRYSENE	10	U	UG/L
I-N-BUTYL PHTHALATE	10	U	UG/L
I-N-OCTYL PHTHALATE	10	U	UG/L
IALLATE	10	U	UG/L
IBENZO(A,H)ANTHRACENE	10	U	UG/L
IBENZOFURAN	10	U	UG/L
IETHYL PHTHALATE	10	U	UG/L
IMETHOATE	50	U	UG/L
IMETHYL PHTHALATE	10	U	UG/L
INOSEB	10	U	UG/L
IPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
METHAPYRILENE	50	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

SEMIVOLATILES

Sample Number: S5MW-4
Sample Date: 9/30/96
Laboratory ID: 9610017-01
QC Type: NORMAL
% Moisture: 0
Location: S5MW-4

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	50	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,3-DINITROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROANILINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHR[illegible]	10	U	UG/L
3-NITROANILINE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-METHYLPHENOL	10	U	UG/L
4-NITROANILINE	10	U	UG/L
4-NITROPHENOL	20	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	UR	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	50	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	50	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB		U	UG/L
DIPHENYLAMINE		U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
METHAPYRILENE	50	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	[illegible]G/L
PHENANTHRENE	10	U	[illegible]G/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

SEMIVOLATILES

PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L

Sample Number: S5MW-5
Sample Date: 9/30/96
Laboratory ID: 9610017-02
QC Type: NORMAL
% Moisture: 0
Location: S5MW-5

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	50	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,3-DINITROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROANILINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
3-NITROANILINE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-METHYLPHENOL	10	U	UG/L
4-NITROANILINE	10	U	UG/L
4-NITROPHENOL	20	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	UR	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	50	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	50	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

SEMIVOLATILES

DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
METHAPYRILENE	50	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L

Sample Number: S7SW-04
Sample Date: 10/1/96
Laboratory ID: 9610017-12
QC Type: NORMAL
% Moisture: 0
Location: S7SW-4

	RESULT	QUAL	UNIT
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	50	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,3-DINITROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROANILINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
3-NITROANILINE	10	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

SEMIVOLATILES

1-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-METHYLPHENOL	10	U	UG/L
4-NITROANILINE	10	U	UG/L
4-NITROPHENOL	20	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	UR	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	50	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	50	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L

DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
METHAPYRILENE	50	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L

PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

SEMIVOLATILES

Sample Number: S7SW-05
Sample Date: 10/1/96
Laboratory ID: 9610017-15
QC Type: NORMAL
% Moisture: 0
Location: S7SW-5

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	20	U	UG/L
1,2,4-TRICHLOROBENZENE	20	U	UG/L
1,2-DICHLOROBENZENE	20	U	UG/L
1,3,5-TRINITROBENZENE	100	U	UG/L
1,3-DICHLOROBENZENE	20	U	UG/L
1,3-DINITROBENZENE	20	U	UG/L
1,4-DICHLOROBENZENE	20	U	UG/L
1,4-DIOXANE	20	U	UG/L
1,4-NAPHTHOQUINONE	20	U	UG/L
1-NAPHTHYLAMINE	20	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	20	U	UG/L
2,4,5-TRICHLOROPHENOL	20	U	UG/L
2,4,6-TRICHLOROPHENOL	20	U	UG/L
2,4-DICHLOROPHENOL	20	U	UG/L
2,4-DIMETHYLPHENOL	20	U	UG/L
2,4-DINITROPHENOL	40	U	UG/L
2,4-DINITROTOLUENE	20	U	UG/L
2,6-DICHLOROPHENOL	20	U	UG/L
2,6-DINITROTOLUENE	20	U	UG/L
2-ACETYLAMINOFLUORENE	20	U	UG/L
2-CHLORONAPHTHALENE	20	U	UG/L
2-CHLOROPHENOL	20	U	UG/L
2-METHYL-4,6-DINITROPHENOL	20	U	UG/L
2-METHYLNAPHTHALENE	20	U	UG/L
2-METHYLPHENOL	20	U	UG/L
2-NAPHTHYLAMINE	20	U	UG/L
2-NITROANILINE	20	U	UG/L
2-NITROPHENOL	20	U	UG/L
2-PICOLINE	20	U	UG/L
3,3'-DICHLOROBENZIDINE	100	U	UG/L
3,3'-DIMETHYLBENZIDINE	100	U	UG/L
3-METHYLCHOLANTHRENE	20	U	UG/L
3-NITROANILINE	20	U	UG/L
4-AMINOBIPHENYL	20	U	UG/L
4-BROMOPHENYL PHENYL ETHER	20	U	UG/L
4-CHLORO-3-METHYLPHENOL	20	U	UG/L
4-CHLOROANILINE	20	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	20	U	UG/L
4-METHYLPHENOL	20	U	UG/L
4-NITROANILINE	20	U	UG/L
4-NITROPHENOL	40	U	UG/L
4-NITROQUINOLINE-1-OXIDE	20	UR	UG/L
5-NITRO-O-TOLUIDINE	20	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	20	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	20	U	UG/L
ACENAPHTHENE	20	U	UG/L
ACENAPHTHYLENE	20	U	UG/L
ACETOPHENONE	20	U	UG/L
ANILINE	20	U	UG/L
ANTHRACENE	20	U	UG/L
ARAMITE	20	U	UG/L
BENZO(A)ANTHRACENE	20	U	UG/L
BENZO(A)PYRENE	20	U	UG/L
BENZO(B)FLUORANTHENE	20	U	UG/L
BENZO(G,H,I)PERYLENE	20	U	UG/L
BENZO(K)FLUORANTHENE	20	U	UG/L
BENZYL ALCOHOL	20	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	20	U	UG/L
BIS(2-CHLOROETHYL)ETHER	20	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	20	U	UG/L
BUTYL BENZYL PHTHALATE	20	U	UG/L
CHLOROBENZILATE	100	U	UG/L
CHRYSENE	20	U	UG/L
DI-N-BUTYL PHTHALATE	20	U	UG/L
DI-N-OCTYL PHTHALATE	20	U	UG/L
DIALLATE	20	U	UG/L
DIBENZO(A,H)ANTHRACENE	20	U	UG/L
DIBENZOFURAN	20	U	UG/L
DIETHYL PHTHALATE	20	U	UG/L
DIMETHOATE	100	U	UG/L
DIMETHYL PHTHALATE	20	U	UG/L
DINOSEB	[illegible]	U	UG/L
DIPHENYLAMINE	[illegible]	U	UG/L
DISULFOTON	20	U	UG/L
ETHYL METHACRYLATE	20	U	UG/L
ETHYL METHANESULFONATE	20	U	UG/L
FAMPHUR	20	U	UG/L
FLUORANTHENE	20	U	UG/L
FLUORENE	20	U	UG/L
HEXACHLOROBENZENE	20	U	UG/L
HEXACHLOROBUTADIENE	20	U	UG/L
HEXACHLOROCYCLOPENTADIENE	20	U	UG/L
HEXACHLOROETHANE	20	U	UG/L
HEXACHLOROPROPENE	20	U	UG/L
INDENO(1,2,3-CD) PYRENE	20	U	UG/L
ISODRIN	20	U	UG/L
ISOPHORONE	20	U	UG/L
ISOSAFROLE	20	U	UG/L
KEPONE	20	U	UG/L
METHAPYRILENE	100	U	UG/L
METHYL METHACRYLATE	20	U	UG/L
METHYL METHANESULFONATE	20	U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	20	U	UG/L
N-NITROSODI-N-BUTYLAMINE	20	U	UG/L
N-NITROSODIETHYLAMINE	20	U	UG/L
N-NITROSODIMETHYLAMINE	20	U	UG/L
N-NITROSODIPHENYLAMINE	20	U	UG/L
N-NITROSOMETHYLETHYLAMINE	20	U	UG/L
N-NITROSOMORPHOLINE	20	U	UG/L
N-NITROSOPIPERIDINE	20	U	UG/L
N-NITROSOPYRROLIDINE	20	U	UG/L
NAPHTHALENE	20	U	UG/L
NITROBENZENE	20	U	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	20	U	UG/L
O-TOLUIDINE	20	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	20	U	UG/L
P-PHENYLENEDIAMINE	40	U	UG/L
PENTACHLOROBENZENE	20	U	UG/L
PENTACHLOROETHANE	20	U	UG/L
PENTACHLORONITROBENZENE	20	U	UG/L
PENTACHLOROPHENOL	20	U	UG/L
PHENACETIN	20	U	UG/L
PHENANTHRENE	20	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

SEMIVOLATILES

PHENOL	20	U	UG/L
PRONAMIDE	20	U	UG/L
PYRENE	20	U	UG/L
PYRIDINE	20	U	UG/L
SAFROLE	20	U	UG/L
SULFOTEP	20	U	UG/L
THIONAZIN	20	U	UG/L

Sample Number: S7SW-06
Sample Date: 10/1/96
Laboratory ID: 9610017-11
QC Type: NORMAL
% Moisture: 0
Location: S7SW-6

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	50	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,3-DINITROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROANILINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
3-NITROANILINE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-METHYLPHENOL	10	U	UG/L
4-NITROANILINE	10	U	UG/L
4-NITROPHENOL	20	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	UR	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	50	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	50	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

SEMIVOLATILES

DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
METHAPYRILENE	50	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L

PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L

Sample Number: S7SW-07
Sample Date: 10/1/96
Laboratory ID: 9610017-13
QC Type: NORMAL
% Moisture: 0
Location: S7SW-7

	RESULT	QUAL	UNIT
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	50	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,3-DINITROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROANILINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
3-NITROANILINE	10	U	G/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

SEMIVOLATILES

4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-METHYLPHENOL	10	U	UG/L
4-NITROANILINE	10	U	UG/L
4-NITROPHENOL	20	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	UR	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	50	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	50	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB	10	U	UG/L
DIPHENYLAMINE	10	U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
METHAPYRILENE	50	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

SEMIVOLATILES

Sample Number: S7SW-08
Sample Date: 10/1/96
Laboratory ID: 9610017-14
QC Type: NORMAL
% Moisture: 0
Location: S7SW-8

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	10	U	UG/L
1,2,4-TRICHLOROBENZENE	10	U	UG/L
1,2-DICHLOROBENZENE	10	U	UG/L
1,3,5-TRINITROBENZENE	50	U	UG/L
1,3-DICHLOROBENZENE	10	U	UG/L
1,3-DINITROBENZENE	10	U	UG/L
1,4-DICHLOROBENZENE	10	U	UG/L
1,4-DIOXANE	10	U	UG/L
1,4-NAPHTHOQUINONE	10	U	UG/L
1-NAPHTHYLAMINE	10	U	UG/L
2,3,4,6-TETRACHLOROPHENOL	10	U	UG/L
2,4,5-TRICHLOROPHENOL	10	U	UG/L
2,4,6-TRICHLOROPHENOL	10	U	UG/L
2,4-DICHLOROPHENOL	10	U	UG/L
2,4-DIMETHYLPHENOL	10	U	UG/L
2,4-DINITROPHENOL	20	U	UG/L
2,4-DINITROTOLUENE	10	U	UG/L
2,6-DICHLOROPHENOL	10	U	UG/L
2,6-DINITROTOLUENE	10	U	UG/L
2-ACETYLAMINOFLUORENE	10	U	UG/L
2-CHLORONAPHTHALENE	10	U	UG/L
2-CHLOROPHENOL	10	U	UG/L
2-METHYL-4,6-DINITROPHENOL	10	U	UG/L
2-METHYLNAPHTHALENE	10	U	UG/L
2-METHYLPHENOL	10	U	UG/L
2-NAPHTHYLAMINE	10	U	UG/L
2-NITROANILINE	10	U	UG/L
2-NITROPHENOL	10	U	UG/L
2-PICOLINE	10	U	UG/L
3,3'-DICHLOROBENZIDINE	50	U	UG/L
3,3'-DIMETHYLBENZIDINE	50	U	UG/L
3-METHYLCHOLANTHRENE	10	U	UG/L
3-NITROANILINE	10	U	UG/L
4-AMINOBIPHENYL	10	U	UG/L
4-BROMOPHENYL PHENYL ETHER	10	U	UG/L
4-CHLORO-3-METHYLPHENOL	10	U	UG/L
4-CHLOROANILINE	10	U	UG/L
4-CHLOROPHENYL PHENYL ETHER	10	U	UG/L
4-METHYLPHENOL	10	U	UG/L
4-NITROANILINE	10	U	UG/L
4-NITROPHENOL	20	U	UG/L
4-NITROQUINOLINE-1-OXIDE	10	UR	UG/L
5-NITRO-O-TOLUIDINE	10	U	UG/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	10	U	UG/L
A,A-DIMETHYLPHENETHYLAMINE	10	U	UG/L
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ACETOPHENONE	10	U	UG/L
ANILINE	10	U	UG/L
ANTHRACENE	10	U	UG/L
ARAMITE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
BENZYL ALCOHOL	10	U	UG/L
BIS(2-CHLOROETHOXY)METHANE	10	U	UG/L
BIS(2-CHLOROETHYL)ETHER	10	U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	UG/L
BUTYL BENZYL PHTHALATE	10	U	UG/L
CHLOROBENZILATE	50	U	UG/L
CHRYSENE	10	U	UG/L
DI-N-BUTYL PHTHALATE	10	U	UG/L
DI-N-OCTYL PHTHALATE	10	U	UG/L
DIALLATE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
DIBENZOFURAN	10	U	UG/L
DIETHYL PHTHALATE	10	U	UG/L
DIMETHOATE	50	U	UG/L
DIMETHYL PHTHALATE	10	U	UG/L
DINOSEB		U	UG/L
DIPHENYLAMINE		U	UG/L
DISULFOTON	10	U	UG/L
ETHYL METHACRYLATE	10	U	UG/L
ETHYL METHANESULFONATE	10	U	UG/L
FAMPHUR	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
HEXACHLOROBENZENE	10	U	UG/L
HEXACHLOROBUTADIENE	10	U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	U	UG/L
HEXACHLOROETHANE	10	U	UG/L
HEXACHLOROPROPENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
ISODRIN	10	U	UG/L
ISOPHORONE	10	U	UG/L
ISOSAFROLE	10	U	UG/L
KEPONE	10	U	UG/L
METHAPYRILENE	50	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYL METHANESULFONATE	10	U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	U	UG/L
N-NITROSODI-N-BUTYLAMINE	10	U	UG/L
N-NITROSODIETHYLAMINE	10	U	UG/L
N-NITROSODIMETHYLAMINE	10	U	UG/L
N-NITROSODIPHENYLAMINE	10	U	UG/L
N-NITROSOMETHYLETHYLAMINE	10	U	UG/L
N-NITROSOMORPHOLINE	10	U	UG/L
N-NITROSOPIPERIDINE	10	U	UG/L
N-NITROSOPYRROLIDINE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
NITROBENZENE	10	U	UG/L
O,O,O-TRIETHYLPHOSPHOROTHIOATE	10	U	UG/L
O-TOLUIDINE	10	U	UG/L
P-DIMETHYLAMINOAZOBENZENE	10	U	UG/L
P-PHENYLENEDIAMINE	20	U	UG/L
PENTACHLOROBENZENE	10	U	UG/L
PENTACHLOROETHANE	10	U	UG/L
PENTACHLORONITROBENZENE	10	U	UG/L
PENTACHLOROPHENOL	10	U	UG/L
PHENACETIN	10	U	UG/L
PHENANTHRENE	10	U	G/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

SEMIVOLATILES

PHENOL	10	U	UG/L
PRONAMIDE	10	U	UG/L
PYRENE	10	U	UG/L
PYRIDINE	10	U	UG/L
SAFROLE	10	U	UG/L
SULFOTEP	10	U	UG/L
THIONAZIN	10	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

VOLATILES

Sample Number: ABMW-2
Sample Date: 10/3/96
Laboratory ID: 9610017-20
QC Type: NORMAL
% Moisture: 0
Location: ABMW-2

	RESULT	QUAL	UNITS
1,2-DICHLOROBENZENE	2	U	UG/L
1,3-DICHLOROBENZENE	2	U	UG/L
1,4-DICHLOROBENZENE	2	U	UG/L
BENZENE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
TOLUENE	2	U	UG/L
XYLENES (TOTAL)	6	U	UG/L

Sample Number: RB07100196
Sample Date: 10/1/96
Laboratory ID: 9610017-06
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-CHLORO-1,3-BUTADIENE	2	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	5	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL) ETHER	10	U	UG/L
BROMODICHLOROMETHANE	2	U	UG/L
BROMOFORM	2	U	UG/L
BROMOMETHANE	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROMETHANE	2	U	UG/L
CIS-1,3-DICHLOROPROPENE	[illegible]	U	UG/L
DIBROMOMETHANE	[illegible]	U	UG/L
DICHLORODIFLUOROMETHANE	2	U	UG/L
ETHYL CYANIDE	20	U	UG/L
ETHYLBENZENE	2	U	UG/L
IODOMETHANE	5	U	UG/L
ISOBUTYL ALCOHOL	20	U	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYLENE CHLORIDE	5	U	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHENE	2	U	UG/L
TOLUENE	2	U	UG/L
TRANS-1,2-DICHLOROETHENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES, TOTAL	4	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

VOLATILES

Sample Number: RB08100396
Sample Date: 10/3/96
Laboratory ID: 9610017-19
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-CHLORO-1,3-BUTADIENE	2	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	5	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL) ETHER	10	U	UG/L
BROMODICHLOROMETHANE	2	U	UG/L
BROMOFORM	2	U	UG/L
BROMOMETHANE	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROMETHANE	2	U	UG/L
CIS-1,3-DICHLOROPROPENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	2	U	UG/L
ETHYL CYANIDE	20	U	UG/L
ETHYLBENZENE	2	U	UG/L
IODOMETHANE	5	U	UG/L
ISOBUTYL ALCOHOL	20	U	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYLENE CHLORIDE	5	U	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHENE	2	U	UG/L
TOLUENE	2	U	UG/L
TRANS-1,2-DICHLOROETHENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES, TOTAL	4	U	UG/L

Sample Number: TB08100196
Sample Date: 9/26/96
Laboratory ID: 9610017-10
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNIT
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-CHLORO-1,3-BUTADIENE	2	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	5	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	U	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL) ETHER	10	U	UG/L
BROMODICHLOROMETHANE	2	U	UG/L
BROMOFORM	2	U	UG/L
BROMOMETHANE	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROMETHANE	2	U	UG/L
CIS-1,3-DICHLOROPROPENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

VOLATILES

DICHLORODIFLUOROMETHANE	2	U	UG/L
ETHYL CYANIDE	20	U	UG/L
ETHYLBENZENE	2	U	UG/L
IODOMETHANE	5	U	UG/L
ISOBUTYL ALCOHOL	20	U	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYLENE CHLORIDE	5	U	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHENE	2	U	UG/L
TOLUENE	2	U	UG/L
TRANS-1,2-DICHLOROETHENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES, TOTAL	4	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

PESTICIDES/PCBs

Sample Number: ABMW-2
Sample Date: 10/3/96
Laboratory ID: 9610017-20
QC Type: NORMAL
% Moisture: 0
Location: ABMW-2

	RESULT	QUAL	UNITS
2,4,5-T	0.69	U	UG/L
2,4,5-TP (SILVEX)	0.76	U	UG/L
2,4-D	0.66	J	UG/L
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.08	U	UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN I	0.04	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

Sample Number: ABSW-06
Sample Date: 10/2/96
Laboratory ID: 9610017-17
QC Type: NORMAL
% Moisture: 0
Location: ABSW-6

	RESULT	QUAL	UNITS
2,4,5-T	0.097	U	UG/L
2,4,5-TP (SILVEX)	0.097	U	UG/L
2,4-D	0.097	U	UG/L
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.08	U	UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN I	0.04	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

Sample Number: ABSW-10
Sample Date: 10/2/96
Laboratory ID: 9610017-18
QC Type: NORMAL
% Moisture: 0
Location: ABSW-10

	RESULT	QUAL	UNIT
2,4,5-T	0.098	U	UG/L
2,4,5-TP (SILVEX)	0.098	U	UG/L
2,4-D	0.098	U	UG/L
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.08	U	UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN I	0.04	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

PESTICIDES/PCBs

Sample Number: I3MW-3
Sample Date: 10/2/96
Laboratory ID: 9610017-16
QC Type: NORMAL
% Moisture: 0
Location: I3MW-3

	RESULT	QUAL	UNITS
2,4,5-T	0.096	U	UG/L
2,4,5-TP (SILVEX)	0.096	U	UG/L
2,4-D	0.096	U	UG/L
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.08	U	UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN I	0.04	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

Sample Number: RB07-100196
Sample Date: 10/1/96
Laboratory ID: 9610017-06
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
2,4,5-T	0.098	U	UG/L
2,4,5-TP (SILVEX)	0.098	U	UG/L
2,4-D	0.098	U	UG/L

Sample Number: RB08-100396
Sample Date: 10/3/96
Laboratory ID: 9610017-19
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNIT
2,4,5-T	0.1	J	UG/L
2,4,5-TP (SILVEX)	0.66	J	UG/L
2,4-D	0.1	U	UG/L
4,4'-DDD	0.36		UG/L
4,4'-DDE	0.062	J	UG/L
4,4'-DDT	0.4		UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.036	J	UG/L
DIELDRIN	0.14		UG/L
ENDOSULFAN I	0.076		UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.37		UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.3		UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.11	J	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

PESTICIDES/PCBs

Sample Number: RBO7-100196
Sample Date: 10/1/96
Laboratory ID: 9610017-06
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.08	U	UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDOSULFAN-I	0.04	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

Sample Number: S7MW-1
Sample Date: 10/1/96
Laboratory ID: 9610017-07
QC Type: NORMAL
% Moisture: 0
Location: S7MW-1

	RESULT	QUAL	UNITS
2,4,5-T	0.097	U	UG/L
2,4,5-TP (SILVEX)	0.097	U	UG/L
2,4-D	0.097	U	UG/L
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.08	U	UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN I	0.04	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

Sample Number: S7MW-2
Sample Date: 10/1/96
Laboratory ID: 9610017-09
QC Type: NORMAL
% Moisture: 0
Location: S7MW-2

	RESULT	QUAL	UNIT
2,4,5-T	0.1	U	UG/L
2,4,5-TP (SILVEX)	0.1	U	UG/L
2,4-D	0.1	U	UG/L
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.08	U	UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN I	0.04	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A017W

PESTICIDES/PCBs

Sample Number: S7MW-3
Sample Date: 10/1/96
Laboratory ID: 9610017-08
QC Type: NORMAL
% Moisture: 0
Location: S7MW-3

	RESULT	QUAL	UNITS
2,4,5-T	0.096	U	UG/L
2,4,5-TP (SILVEX)	0.096	U	UG/L
2,4-D	0.096	U	UG/L
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.08	U	UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN I	0.04	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

Sample Number: S7SW-04
Sample Date: 10/1/96
Laboratory ID: 9610017-12
QC Type: NORMAL
% Moisture: 0
Location: S7SW-4

	RESULT	QUAL	UNITS
2,4,5-T	0.097	U	UG/L
2,4,5-TP (SILVEX)	0.097	U	UG/L
2,4-D	0.097	U	UG/L
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.08	U	UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN I	0.04	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE		U	UG/L

Sample Number: S7SW-05
Sample Date: 10/1/96
Laboratory ID: 9610017-15
QC Type: NORMAL
% Moisture: 0
Location: S7SW-5

	RESULT	QUAL	UNIT
2,4,5-T	0.097	U	UG/L
2,4,5-TP (SILVEX)	0.097	U	UG/L
2,4-D	0.097	U	UG/L
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.08	U	UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN I	0.04	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

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PESTICIDES/PCBs

Sample Number: S7SW-06
Sample Date: 10/1/96
Laboratory ID: 9610017-11
QC Type: NORMAL
% Moisture: 0
Location: S7SW-6

	RESULT	QUAL	UNITS
2,4,5-T	0.097	U	UG/L
2,4,5-TP (SILVEX)	0.097	U	UG/L
2,4-D	0.097	U	UG/L
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.08	U	UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN I	0.04	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

Sample Number: S7SW-07
Sample Date: 10/1/96
Laboratory ID: 9610017-13
QC Type: NORMAL
% Moisture: 0
Location: S7SW-7

	RESULT	QUAL	UNITS
2,4,5-T	0.097	U	UG/L
2,4,5-TP (SILVEX)	0.097	U	UG/L
2,4-D	0.097	U	UG/L
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.08	U	UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN I	0.04	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

Sample Number: S7SW-08
Sample Date: 10/1/96
Laboratory ID: 9610017-14
QC Type: NORMAL
% Moisture: 0
Location: S7SW-8

	RESULT	QUAL	UNIT
2,4,5-T	0.097	U	UG/L
2,4,5-TP (SILVEX)	0.097	U	UG/L
2,4-D	0.097	U	UG/L
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.08	U	UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN I	0.04	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

INORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	C. BRYAN	DATE:	JANUARY 17, 1997
FROM:	TERESA M. HUDSON	COPIES:	DV FILE

SUBJECT: INORGANIC DATA REVIEW – TAL METALS AND CYANIDE
CTO 007 – KEY WEST, FLORIDA
SDG – 6A055S

SAMPLES: 15/SOIL/

I7SS-04	S7SS-07	ABSS-10
I7DPSS	S7SS-08	I3SB-1
I7SS-01	S7SS-05	I3SB-2
S7SS-04	S7DPSS	S5SB-1
S7SS-06	ABSS-06	S4SB-1

Introduction

Data reivew was performed on the inorganic analytical data from CTO 007, NAS Key West, SDG No.6A055S. Fifteen soil samples were included for TAL metals and twelve (12) soil samples were included for cyanide (samples excluded: I7SS-04, I7DPSS, and I7SS-01). Two (2) field duplicate pairs (I7SS-04/I7DPSS and S7SS-05/S7DPSS) and one (1) lab duplicate pair (S7SS-05/S7SS-05D) are included within this SDG.

All samples were analyzed for Target Analyte List (TAL) metals. All samples except I7SS-04, I7DPSS, and I7SS-01 were analyzed for cyanide. The samples were collected by Brown & Root Environmental on September 30, October 1, 2, 3, and 4, 1996 and analyzed by General Engineering Laboratory under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- Calibration Verifications
- * Laboratory Blank Analyses
- * Matrix Spike Results

* Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/preparation/field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level (soil)
aluminum	30.1 ug/L	30.1 MG/KG
antimony	3.6 ug/L	3.6 MG/KG
barium	0.2 ug/L	0.2 MG/KG
beryllium	0.2 ug/L	0.2 MG/KG
cadmium	0.3 ug/L	0.3 MG/KG
calcium[1]	8.76 MG/KG	43.8 MG/KG
chromium[1]	0.311 MG/KG	1.555 MG/KG
cyanide	1.8 ug/L	1.8 MG/KG
iron[1]	5.976 MG/KG	29.88 MG/KG
magnesium	11.1 ug/L	11.1 MG/KG
potassium	32.4 ug/L	32.4 MG/KG
sodium	41.3 ug/L	41.3 MG/KG
thallium	2.0 ug/L	2.0 MG/KG
zinc	2.9 ug/L	2.9 MG/KG

Samples affected: All, except S7DPSS, I7DPSS, I7SS-01, S7SS-04, and S7SS-06.

Maximum concentration found in a soil preparation blank.

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for beryllium, cadmium, and potassium have been qualified as nondetected "U." No action was taken for the remaining analytes since the results were either positive and greater than the action level or nondetect.

Notes

Holding Times were exceeded for cyanide for samples I7SS-04, I7DPSS, and I7SS-01. However, no action was taken because all samples were qualified rejected, "R," for cyanide for MS R% severely below the quality control limits.

It was noted that samples I7SS-4, I7DPSS, I7SS-1, ABSS-10, I3SB-1, I3SB-2, S5SB-1, and S4SB-1 were diluted 100 fold for calcium.

It was noted that zinc exceeded the quality control limits for Contract Required Detection Limit (CRDL) Percent Recoveries (R%). The IR for lead was below CRDL quality control limit. However, no validation actions were taken for CRDL R%.

It was noted that Matrix Spike (MS) Percent Recovery (R%) for antimony, cyanide, magnesium, sodium, and thallium were below the quality control limits. MS R% were not low enough to require qualification for antimony and thallium. No qualifications were needed for magnesium and sodium because all sample results were positive. For cyanide, all sample results were qualified as rejected, "R."

A comparison of field duplicate pairs I7SS-4/I7DPSS and S7SS-5/S7DPSS can be found in Appendix C. However, no validation actions are required for field duplicate imprecision.

Executive Summary

Laboratory Performance: Holding times were exceeded for three (3) samples. MS %R for cyanide was outside quality control limits. Several analytes were present in the laboratory method blank.

Other Factors Affecting Data Quality: None.

No other problems were encountered in this case.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review," February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Teresa M Hudson

Brown & Root Environmental
Teresa M. Hudson
Environmental Scientist/Data Validator

Julea T Bradley for

Brown & Root Environmental
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

KEY WEST
SDG – 6A055S

TABLE 1 - RECOMMENDATION SUMMARY

Aluminum		Magnesium	
Antimony		Manganese	
Arsenic		Mercury	
Barium		Nickel	
Beryllium	A[1]	Potassium	A[1]
Cadmium	A[1]	Selenium	
Calcium		Silver	
Chromium		Sodium	
Cobalt		Thallium	
Copper		Vanadium	
Iron		Zinc	
Lead		Cyanide	R[1]

If the field is left blank, the qualifier is A - Accept all data.

A[1] – Accept data but qualify as nondetected, "U," as a result of laboratory blank contamination.

R[1] – Reject data as a result of extremely low MS R%.

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A055S

INORGANICS

Sample Number: S7DPSS
Sample Date: 10/1/96
Laboratory ID: 9610055-09
QC Type: NORMAL
% Moisture: 71
Location: S7DPSS

	RESULT	QUAL	UNITS
ALUMINUM	2800		MG/KG
ANTIMONY	1.3	U	MG/KG
ARSENIC	8		MG/KG
BARIUM	12.9		MG/KG
BERYLLIUM	0.07	U	MG/KG
CADMIUM	1.5		MG/KG
CALCIUM	186000		MG/KG
CHROMIUM	7.7		MG/KG
COBALT	0.66	U	MG/KG
COPPER	16		MG/KG
CYANIDE	0.23	R	MG/KG
IRON	2610		MG/KG
LEAD	36.4		MG/KG
MAGNESIUM	6320		MG/KG
MANGANESE	16.5		MG/KG
MERCURY	0.05	U	MG/KG
NICKEL	4.4		MG/KG
POTASSIUM	599		MG/KG
SELENIUM	1.3	U	MG/KG
SILVER	1.1		MG/KG
SODIUM	5120		MG/KG
THALLIUM	1.3	U	MG/KG
VANADIUM	10.2		MG/KG
ZINC	129		MG/KG

Sample Number: S7SS04
Sample Date: 10/1/96
Laboratory ID: 9610055-04
QC Type: NORMAL
% Moisture: 88
Location: S7SS-4

	RESULT	QUAL	UNITS
ALUMINUM	2070		MG/KG
ANTIMONY	3.2	U	MG/KG
ARSENIC	3.2	U	MG/KG
BARIUM	9.3		MG/KG
BERYLLIUM	0.16	U	MG/KG
CADMIUM	2.6		MG/KG
CALCIUM	144000		MG/KG
CHROMIUM	32.3		MG/KG
COBALT	1.6	U	MG/KG
COPPER	79.4		MG/KG
CYANIDE	0.53	R	MG/KG
IRON	3740		MG/KG
LEAD	120		MG/KG
MAGNESIUM	5300		MG/KG
MANGANESE	25.2		MG/KG
MERCURY	0.25		MG/KG
NICKEL	9.1		MG/KG
POTASSIUM	940		MG/KG
SELENIUM	3.2	U	MG/KG
SILVER	6.2		MG/KG
SODIUM	19000		MG/KG
THALLIUM	3.2	U	MG/KG
VANADIUM	14.7		MG/KG
ZINC	487		MG/KG

Sample Number: S7SS05
Sample Date: 10/1/96
Laboratory ID: 9610055-08
QC Type: NORMAL
% Moisture: 68
Location: S7SS-5

	RESULT	QUAL	UNIT
ALUMINUM	2410		MG/K
ANTIMONY	1.2	U	MG/K
ARSENIC	3.5		MG/K
BARIUM	14.2		MG/K
BERYLLIUM	0.06	U	MG/K
CADMIUM	0.35		MG/K
CALCIUM	248000		MG/K
CHROMIUM	6		MG/K
COBALT	0.6	U	MG/K
COPPER	12.3		MG/K
CYANIDE	0.2	R	MG/K
IRON	1650		MG/K
LEAD	22.5		MG/K
MAGNESIUM	5860		MG/K
MANGANESE	12.6		MG/K
MERCURY	0.05	U	MG/K
NICKEL	2.8		MG/K
POTASSIUM	583		MG/K
SELENIUM	1.2	U	MG/K
SILVER	0.6	U	MG/K
SODIUM	4780		MG/K
THALLIUM	1.2	U	MG/K
VANADIUM	5.4		MG/K
ZINC	38.3		MG/K

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GENERAL ENGINEERING LABS

SDG: 6A055S

INORGANICS

Sample Number: S7SS06
Sample Date: 10/1/96
Laboratory ID: 9610055-05
QC Type: NORMAL
% Moisture: 81
Location: S7SS-6

	RESULT	QUAL	UNITS
ALUMINUM	4330		MG/KG
ANTIMONY	2.1	U	MG/KG
ARSENIC	2.1	U	MG/KG
BARIUM	13.3		MG/KG
BERYLLIUM	0.1	U	MG/KG
CADMIUM	2.1		MG/KG
CALCIUM	144000		MG/KG
CHROMIUM	24		MG/KG
COBALT	1	U	MG/KG
COPPER	127		MG/KG
CYANIDE	0.33	R	MG/KG
IRON	3510		MG/KG
LEAD	209		MG/KG
MAGNESIUM	7200		MG/KG
MANGANESE	28.8		MG/KG
MERCURY	0.41		MG/KG
NICKEL	11		MG/KG
POTASSIUM	893		MG/KG
SELENIUM	2.1	U	MG/KG
SILVER	10.6		MG/KG
SODIUM	7070		MG/KG
THALLIUM	2.1	U	MG/KG
VANADIUM	16.1		MG/KG
ZINC	436		MG/KG

Sample Number: S7SS07
Sample Date: 10/1/96
Laboratory ID: 9610055-06
QC Type: NORMAL
% Moisture: 87
Location: S7SS-7

	RESULT	QUAL	UNITS
ALUMINUM	1780		MG/KG
ANTIMONY	3	U	MG/KG
ARSENIC	3.9		MG/KG
BARIUM	11.6		MG/KG
BERYLLIUM	0.15	U	MG/KG
CADMIUM	1.2	U	MG/KG
CALCIUM	225000		MG/KG
CHROMIUM	14		MG/KG
COBALT	1.5	U	MG/KG
COPPER	64.2		MG/KG
CYANIDE	0.49	R	MG/KG
IRON	4270		MG/KG
LEAD	109		MG/KG
MAGNESIUM	4720		MG/KG
MANGANESE	30.5		MG/KG
MERCURY	0.12	U	MG/KG
NICKEL	6.7		MG/KG
POTASSIUM	760		MG/KG
SELENIUM	3	U	MG/KG
SILVER	1.5	U	MG/KG
SODIUM	14500		MG/KG
THALLIUM	3	U	MG/KG
VANADIUM	11		MG/KG
ZINC	254		MG/KG

Sample Number: S7SS08
Sample Date: 10/1/96
Laboratory ID: 9610055-07
QC Type: NORMAL
% Moisture: 88
Location: S7SS-8

	RESULT	QUAL	UNIT
ALUMINUM	1630		MG/K
ANTIMONY	3.3	U	MG/K
ARSENIC	3.3	U	MG/K
BARIUM	14.9		MG/K
BERYLLIUM	0.17	U	MG/K
CADMIUM	0.77		MG/K
CALCIUM	271000		MG/K
CHROMIUM	17.3		MG/K
COBALT	1.7	U	MG/K
COPPER	50		MG/K
CYANIDE	0.53	R	MG/K
IRON	3800		MG/K
LEAD	119		MG/K
MAGNESIUM	5600		MG/K
MANGANESE	29.5		MG/K
MERCURY	0.1	U	MG/K
NICKEL	6.3		MG/K
POTASSIUM	645		MG/K
SELENIUM	3.3	U	MG/K
SILVER	1.7	U	MG/K
SODIUM	8480		MG/K
THALLIUM	3.3	U	MG/K
VANADIUM	16.6		MG/K
ZINC	295		MG/K

APPENDIX A
Qualified Analytical Results

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A055S

INORGANICS

Sample Number: ABSS06
Sample Date: 10/2/96
Laboratory ID: 9610055-10
QC Type: NORMAL
% Moisture: 62
Location: ABSS-6

	RESULT	QUAL	UNITS
ALUMINUM	1090		MG/KG
ANTIMONY	1	U	MG/KG
ARSENIC	3.3		MG/KG
BARIUM	12.6		MG/KG
BERYLLIUM	0.05	U	MG/KG
CADMIUM	0.58		MG/KG
CALCIUM	232000		MG/KG
CHROMIUM	7.1		MG/KG
COBALT	0.51	U	MG/KG
COPPER	33.8		MG/KG
CYANIDE	0.18	R	MG/KG
IRON	6080		MG/KG
LEAD	24.4		MG/KG
MAGNESIUM	6070		MG/KG
MANGANESE	47.3		MG/KG
MERCURY	0.04	U	MG/KG
NICKEL	5		MG/KG
POTASSIUM	869		MG/KG
SELENIUM	1	U	MG/KG
SILVER	0.51	U	MG/KG
SODIUM	21000		MG/KG
THALLIUM	1	U	MG/KG
VANADIUM	5.4		MG/KG
ZINC	224		MG/KG

Sample Number: ABSS10
Sample Date: 10/2/96
Laboratory ID: 9610055-11
QC Type: NORMAL
% Moisture: 51
Location: ABSS-10

	RESULT	QUAL	UNITS
ALUMINUM	1520		MG/KG
ANTIMONY	0.78	U	MG/KG
ARSENIC	3.2		MG/KG
BARIUM	9.1		MG/KG
BERYLLIUM	0.04	U	MG/KG
CADMIUM	0.61	U	MG/KG
CALCIUM	27000000		MG/KG
CHROMIUM	6.7		MG/KG
COBALT	0.39	U	MG/KG
COPPER	30.3		MG/KG
CYANIDE	0.13	R	MG/KG
IRON	5760		MG/KG
LEAD	20.4		MG/KG
MAGNESIUM	6100		MG/KG
MANGANESE	59		MG/KG
MERCURY	0.03	U	MG/KG
NICKEL	3.6		MG/KG
POTASSIUM	665		MG/KG
SELENIUM	0.78	U	MG/KG
SILVER	0.39	U	MG/KG
SODIUM	14300		MG/KG
THALLIUM	0.78	U	MG/KG
VANADIUM	4.9		MG/KG
ZINC	258		MG/KG

Sample Number: I3SB1
Sample Date: 10/3/96
Laboratory ID: 9610055-12
QC Type: NORMAL
% Moisture: 21
Location: I3SB-1

	RESULT	QUAL	UNIT
ALUMINUM	482		MG/K
ANTIMONY	0.51	U	MG/K
ARSENIC	0.66		MG/K
BARIUM	12.8		MG/K
BERYLLIUM	0.03	U	MG/K
CADMIUM	0.07	U	MG/K
CALCIUM	27800000		MG/K
CHROMIUM	3.3		MG/K
COBALT	0.25	U	MG/K
COPPER	9.6		MG/K
IRON	438		MG/K
LEAD	27.3		MG/K
MAGNESIUM	2890		MG/K
MANGANESE	10.4		MG/K
MERCURY	0.08		MG/K
NICKEL	1.3		MG/K
POTASSIUM	84.3	U	MG/K
SELENIUM	0.51	U	MG/K
SILVER	0.25	U	MG/K
SODIUM	1240		MG/K
THALLIUM	0.51	U	MG/K
VANADIUM	4.2		MG/K
ZINC	21.3		MG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A055S

INORGANICS

Sample Number: I3SB2
Sample Date: 10/3/96
Laboratory ID: 9610055-13
QC Type: NORMAL
% Moisture: 25
Location: I3SB-2

	RESULT	QUAL	UNITS
ALUMINUM	2250		MG/KG
ANTIMONY	0.53	U	MG/KG
ARSENIC	2.6		MG/KG
BARIUM	73.3		MG/KG
BERYLLIUM	0.03	U	MG/KG
CADMIUM	0.33	U	MG/KG
CALCIUM	27100000		MG/KG
CHROMIUM	7.8		MG/KG
COBALT	0.41		MG/KG
COPPER	22.9		MG/KG
IRON	2890		MG/KG
LEAD	121		MG/KG
MAGNESIUM	4110		MG/KG
MANGANESE	58.1		MG/KG
MERCURY	0.72		MG/KG
NICKEL	2.2		MG/KG
POTASSIUM	168	U	MG/KG
SELENIUM	0.53	U	MG/KG
SILVER	0.27	U	MG/KG
SODIUM	1400		MG/KG
THALLIUM	0.53	U	MG/KG
VANADIUM	4		MG/KG
ZINC	162		MG/KG

Sample Number: I7DPSS
Sample Date: 9/30/96
Laboratory ID: 9610055-02
QC Type: NORMAL
% Moisture: 42
Location: I7DPSS

	RESULT	QUAL	UNITS
ALUMINUM	272		MG/KG
ANTIMONY	0.68	U	MG/KG
ARSENIC	2.5		MG/KG
BARIUM	6.5		MG/KG
BERYLLIUM	0.03	U	MG/KG
CADMIUM	0.07	U	MG/KG
CALCIUM	33300000		MG/KG
CHROMIUM	3.5	U	MG/KG
COBALT	0.34	U	MG/KG
COPPER	12.1		MG/KG
CYANIDE	0.11	R	MG/KG
IRON	385		MG/KG
LEAD	43.9		MG/KG
MAGNESIUM	3700		MG/KG
MANGANESE	6.8		MG/KG
MERCURY	0.03		MG/KG
NICKEL	1.2		MG/KG
POTASSIUM	417		MG/KG
SELENIUM	0.68	U	MG/KG
SILVER	0.34	U	MG/KG
SODIUM	8310		MG/KG
THALLIUM	0.68	U	MG/KG
VANADIUM	7		MG/KG
ZINC	0.34	U	MG/KG

Sample Number: I7SS01
Sample Date: 9/30/96
Laboratory ID: 9610055-03
QC Type: NORMAL
% Moisture: 44
Location: I7SS-1

	RESULT	QUAL	UNIT
ALUMINUM	298		MG/K
ANTIMONY	0.71	U	MG/K
ARSENIC	2.7		MG/K
BARIUM	6.4		MG/K
BERYLLIUM	0.04	U	MG/K
CADMIUM	0.07	U	MG/K
CALCIUM	30500000		MG/K
CHROMIUM	4.8		MG/K
COBALT	0.36	U	MG/K
COPPER	21.5		MG/K
CYANIDE	0.11	R	MG/K
IRON	2080		MG/K
LEAD	12.9		MG/K
MAGNESIUM	4410		MG/K
MANGANESE	13.3		MG/K
MERCURY	0.02	U	MG/K
NICKEL	1.8		MG/K
POTASSIUM	476		MG/K
SELENIUM	0.71	U	MG/K
SILVER	0.36	U	MG/K
SODIUM	10400		MG/K
THALLIUM	0.71	U	MG/K
VANADIUM	6		MG/K
ZINC	0.36	U	MG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A055S

INORGANICS

Sample Number: I7SS04
Sample Date: 9/30/96
Laboratory ID: 9610055-01
QC Type: NORMAL
% Moisture: 46
Location: I7SS-4

	RESULT	QUAL	UNITS
ALUMINUM	177		MG/KG
ANTIMONY	0.72	U	MG/KG
ARSENIC	1.3		MG/KG
BARIUM	6.3		MG/KG
BERYLLIUM	0.04	U	MG/KG
CADMIUM	0.08	U	MG/KG
CALCIUM	32300000		MG/KG
CHROMIUM	3.2		MG/KG
COBALT	0.36	U	MG/KG
COPPER	11.3		MG/KG
CYANIDE	0.13	R	MG/KG
IRON	235		MG/KG
LEAD	40.4		MG/KG
MAGNESIUM	3970		MG/KG
MANGANESE	6		MG/KG
MERCURY	0.03	U	MG/KG
NICKEL	1		MG/KG
POTASSIUM	522		MG/KG
SELENIUM	0.72	U	MG/KG
SILVER	0.36	U	MG/KG
SODIUM	10500		MG/KG
THALLIUM	0.72	U	MG/KG
VANADIUM	5.9		MG/KG
ZINC	0.36	U	MG/KG

Sample Number: S4SB1
Sample Date: 10/5/96
Laboratory ID: 9610055-15
QC Type: NORMAL
% Moisture: 33
Location: S4SB-1

	RESULT	QUAL	UNITS
ALUMINUM	3180		MG/KG
ANTIMONY	0.6	U	MG/KG
ARSENIC	1.4		MG/KG
BARIUM	10.6		MG/KG
BERYLLIUM	0.03	U	MG/KG
CADMIUM	0.12	U	MG/KG
CALCIUM	25400000		MG/KG
CHROMIUM	9.3		MG/KG
COBALT	0.3	U	MG/KG
COPPER	15.9		MG/KG
CYANIDE	0.1	R	MG/KG
IRON	2050		MG/KG
LEAD	47.5		MG/KG
MAGNESIUM	8480		MG/KG
MANGANESE	18.9		MG/KG
MERCURY	0.02	U	MG/KG
NICKEL	2.7		MG/KG
POTASSIUM	405		MG/KG
SELENIUM	0.6	U	MG/KG
SILVER	0.3	U	MG/KG
SODIUM	3140		MG/KG
THALLIUM	0.6	U	MG/KG
VANADIUM	8.3		MG/KG
ZINC	7.7		MG/KG

Sample Number: S5SB1
Sample Date: 10/5/96
Laboratory ID: 9610055-14
QC Type: NORMAL
% Moisture: 14
Location: S5SB-1

	RESULT	QUAL	UNIT
ALUMINUM	923		MG/K
ANTIMONY	0.47	U	MG/K
ARSENIC	13		MG/K
BARIUM	22.3		MG/K
BERYLLIUM	0.07	U	MG/K
CADMIUM	2.2		MG/K
CALCIUM	25500000		MG/K
CHROMIUM	24.7		MG/K
COBALT	0.7		MG/K
COPPER	7.2		MG/K
IRON	1480		MG/K
LEAD	52.1		MG/K
MAGNESIUM	1360		MG/K
MANGANESE	8.9		MG/K
MERCURY	0.04		MG/K
NICKEL	7.6		MG/K
POTASSIUM	189		MG/K
SELENIUM	0.47	U	MG/K
SILVER	0.23	U	MG/K
SODIUM	1110		MG/K
THALLIUM	0.47	U	MG/K
VANADIUM	3.2		MG/K
ZINC	26.2		MG/K

ORGANIC DATA VALIDATION

INTERNAL CORRESPONDENCE

TO:	CHUCK BRYAN	DATE:	JANUARY 28, 1997
FROM:	EDWARD A. INABINETT	COPIES:	DV FILE

SUBJECT: ORGANIC DATA REVIEW - VOA/SVOA/PEST/PCB/HERB
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG 6A055S

SAMPLES: 15/Soil:

I7SS-04	S7SS-07	ABSS-10
I7DPSS	S7SS-08	I3SB-1
I7SS-01	S7SS-05	I3SB-2
S7SS-04	S7DPSS	S5SB-1
S7SS-06	ABSS-06	S4SB-1

The sample set for the CTO 007 NAS Key West site, SDG 6A055S, consists of fifteen (15) soil environmental samples. All samples were analyzed for Appendix IX volatile and semivolatile compounds, plus the samples were also analyzed for Target Compound List (TCL) pesticide/PCB and herbicide organic compounds. Two field duplicate pairs were included in this SDG(I7DPSS/I7SS-4, S7DPSS/S7SS-5).

The samples were collected by Brown and Root Environmental on Septemter 30th through October 4th, 1996 and analyzed by General Engineering Laboratories, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Methods 8240, 8270, 8080, and 8150 analytical and reporting protocols. The data were evaluated according to the following parameters:

- * Holding times
- GC/MS Tuning
- * Initial and continuing calibrations
- * Laboratory and field blank analyses
- * Compound Quantitation
- * Field Duplicate Precision

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Volatiles

Only sample S4SB-1 was analyzed for volatile aromatic compounds.

The laboratory method blank analysis yielded the following contaminants at the maximum concentration indicated.

Compound	Maximum Concentration	Action Level
methylene chloride	0.96 µg/Kg	9.6 µg/Kg
toluene	0.48 µg/Kg	2.4 µg/Kg

Percent moisture, sample aliquot size, and dilution factors were considered prior to the application of the action level. The positive results for methylene chloride and toluene in sample S4SB-1 reported above the detection limit but below the action level were qualified as undetected, "U". Positive results for methylene chloride and toluene in sample S4SB-1 found below the detection limit have been deleted and replaced by the detection limit value, then qualified as undetected, "U".

The inital calibration Relative Response Factor (RRF) for 2-chloro-1,3-butadiene was less than 0.05. Failure to meet this quality control criteria indicates that the laboratory's instruments could not achieve satisfactory sensitivity for this compound, and therefore, the associated positive and nondetected results for this compound is severely compromised. A nondetected result was reported for this compound in Sample S4SB-1. This nondetect was considered to be unreliable and are rejected, "UR".

No other problems were noted.

Semivolatiles

The holding time from date of collection to date of extraction was exceeded in all samples analyzed for semivolitales. Postive and nondetected results were qualified as estimated "J" and "UJ" respectively. The affected samples are: S7SS-04, S7SS-05, S7SS-06, S7SS-07, S7SS-08, S7DPSS, and S4SB-1.

No other problems were noted.

Pesticide/PCBs

The holding time from date of collection to date of extraction was exceeded in samples I3SB-1, I3SB-2, and S4SB-1. Postive and nondetected results were qualified as estimated "J" and "UJ" respectively.

The holding time from date of collection to date of extraction was grossly exceeded in samples ABSS-06, ABSS-10, S7DPSS, S7SS-05, S7SS-06, S7SS-07, and S7SS-08. Postive results were qualified as estimated "J". Nondetected results were considered to be unreliable and were rejected, "UR".

Sample I7SS-01 was analyzed at a 5 fold dilution as a result of concentrations for 4,4'-DDT and dieldrin exceeding the linear calibration range of the instrument. The results for the aforementioned compounds from the diluted analysis were used to replace the undiluted results and were used.

The laboratory qualifier "P" was removed from all target compound data with a %D above 25% and less than 100% between positive results on columns 1 and 2.

Samples S7SS-06, S7DPSS, and I7SS-01 had high %Ds (greater than 100%) between positive results on columns 1 and 2 for several pesticide compounds. Positive results for these compounds were qualified as estimated "J" in these aforementioned samples.

Sample S4SB-1 was originally analyzed at a 20 fold dilution. According to the case narrative, sample S4SB-1 was reanalyzed at a 50 fold dilution due to matrix interference. The original analysis was chosen for review due to lower reporting limits.

Poor field duplicate precision was noted in the field duplicate pair S7SS-05/S7DPSS for 4,4'-DDE and aroclor 1260. No action is taken based on poor field duplicate precision.

No other problems were noted.

Herbicides

No problems were noted.

Additional Comments

None.

Executive Summary

Laboratory Performance: The laboratory method blank analysis yielded methylene chloride and toluene as contaminants in the volatile fraction. The inital calibration RRF for 2-chloro-1,3-butadiene was less than 0.05. Holding times were exceeded for semivolitales and Pesticides/PCBs.

Other Factors Affecting Data Quality: Several samples had high %Ds between columns 1 and 2 when being analyzed for pesticide compounds. Some samples required dilutions prior to analyses. Two pesticide compounds were detected at a high concentrations, requiring further dilution.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Brown and Root Environmental

Edward A. Inabinett
Engineer/Data Validator

for
Brown and Root Environmental

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

NAS KEY WEST

SDG 6A055S

TABLE 1 - RECOMMENDATION SUMMARY

Sample No.	VOA			BNA			PEST/PCB			HERB		
I7SS-04												
I7DPSS								$J^{7,9,10}$				
I7SS-01								$J^{6,11,12,13,14,15,16,17,18,19}$				
S7SS-04					J^{1}							
S7SS-06					J^{1}			$J^{3,4,5,6}$	R^{2}			
S7SS-07					J^{1}			$J^{3,7,8}$	R^{2}			
S7SS-08					J^{1}			$J^{3,8,9}$	R^{2}			
S7SS-05					J^{1}			$J^{3,10,11,12}$	R^{2}			
S7DPSS					J^{1}			$J^{3,5,10,13}$	R^{2}			
ABSS-06								$J^{3,5,11}$	R^{2}			
ABSS-10								$J^{3,7}$	R^{2}			
I3SB-1								J^{2}				
I3SB-2								J^{2}				
S5SB-1												
S4SB-1	A^{1}		R^{1}		J^{1}			$J^{2,7}$				

If the field is left blank, the qualifier is A - Accept all data.

A^{1} - Accept data, but change positive results for toluene to a revised detection limit and quality as nondetected "U" as a result of laboratory method blank contamination.

R^{1} - Reject "UR" nondetected results for 2-chloro-1,3-butadiene as a result of initial calibration relative response factors less than 0.050.

R^{2} - Reject "UR" nondetected results for pesticide compounds as a result of holding times being grossly exceeded.

J^{1} - Accept data, but qualify positive and nondetected results for semivolatile compounds as as estimated "J" and "UJ" as a result of holding times being exceeded.

J^{2} - Accept data, but qualify positive and nondetected results for pesticide compounds as as estimated "J" and "UJ" as a result of holding times being exceeded.

J^{3} - Accept data, but qualify positive results for pesticide compounds as estimated "J" as a result of holding times being grossly exceeded.

J^4 - Accept data, but qualify positive results for 4,4'-DDD as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^5 - Accept data, but qualify positive results for 4,4'-DDE as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^6 - Accept data, but qualify positive results for 4,4'-DDT as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^7 - Accept data, but remove the laboratory qualifier "P" for 4,4'-DDE as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^8 - Accept data, but remove the laboratory qualifier "P" for endrin as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^9 - Accept data, but remove the laboratory qualifier "P" for gamma-BHC as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{10} - Accept data, but remove the laboratory qualifier "P" for delta-BHC as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{11} - Accept data, but remove the laboratory qualifier "P" for dieldrin as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{12} - Accept data, but remove the laboratory qualifier "P" for 4,4'-DDT as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{13} - Accept data, but remove the laboratory qualifier "P" for 4,4'-DDD as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{14} - Accept data, but remove the laboratory qualifier "P" for alpha-BHC as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{15} - Accept data, but remove the laboratory qualifier "P" for heptachlor as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{16} - Accept data, but qualify positive results for heptachlor epoxide as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{17} - Accept data, but qualify positive results for endosulfan I as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{18} - Accept data, but qualify positive results for endosulfan sulfate as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{19} - Accept data, but qualify positive results for endrin aldehyde as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A055S

SEMIVOLATILES

Sample Number: S4SB-1RE0
Sample Date: 10/5/96
Laboratory ID: 9610055-15
QC Type: NORMAL
% Moisture: 33
Location: S4SB-1

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	486	UJ	UG/KG
1,2,4-TRICHLOROBENZENE	486	UJ	UG/KG
1,2-DICHLOROBENZENE	486	UJ	UG/KG
1,3,5-TRINITROBENZENE	2430	UJ	UG/KG
1,3-DICHLOROBENZENE	486	UJ	UG/KG
1,3-DINITROBENZENE	486	UJ	UG/KG
1,4-DICHLOROBENZENE	486	UJ	UG/KG
1,4-DIOXANE	486	UJ	UG/KG
1,4-NAPHTHOQUINONE	486	UJ	UG/KG
1-NAPHTHYLAMINE	486	UJ	UG/KG
2,3,4,6-TETRACHLOROPHENOL	486	UJ	UG/KG
2,4,5-TRICHLOROPHENOL	486	UJ	UG/KG
2,4,6-TRICHLOROPHENOL	486	UJ	UG/KG
2,4-DICHLOROPHENOL	486	UJ	UG/KG
2,4-DIMETHYLPHENOL	486	UJ	UG/KG
2,4-DINITROPHENOL	973	UJ	UG/KG
2,4-DINITROTOLUENE	486	UJ	UG/KG
2,6-DICHLOROPHENOL	486	UJ	UG/KG
2,6-DINITROTOLUENE	486	UJ	UG/KG
2-ACETYLAMINOFLUORENE	486	UJ	UG/KG
2-CHLORONAPHTHALENE	486	UJ	UG/KG
2-CHLOROPHENOL	486	UJ	UG/KG
2-METHYL-4,6-DINITROPHENOL	486	UJ	UG/KG
2-METHYLNAPHTHALENE	486	UJ	UG/KG
2-METHYLPHENOL	486	UJ	UG/KG
2-NAPHTHYLAMINE	486	UJ	UG/KG
2-NITROANILINE	486	UJ	UG/KG
2-NITROPHENOL	486	UJ	UG/KG
2-PICOLINE	486	UJ	UG/KG
3,3'-DICHLOROBENZIDINE	2430	UJ	UG/KG
3,3'-DIMETHYLBENZIDINE	2430	UJ	UG/KG
3-METHYLCHOLANTHRENE	486	UJ	UG/KG
3-NITROANILINE	486	UJ	UG/KG
4-AMINOBIPHENYL	486	UJ	UG/KG
4-BROMOPHENYL PHENYL ETHER	486	UJ	UG/KG
4-CHLORO-3-METHYLPHENOL	486	UJ	UG/KG
4-CHLOROANILINE	486	UJ	UG/KG
4-CHLOROPHENYL PHENYL ETHER	486	UJ	UG/KG
4-NITROANILINE	486	UJ	UG/KG
4-NITROPHENOL	973	UJ	UG/KG
4-NITROQUINOLINE-1-OXIDE	486	UJ	UG/KG
5-NITRO-O-TOLUIDINE	486	UJ	UG/KG
7,12-DIMETHYLBENZ(A)ANTHRACENE	486	UJ	UG/KG
A,A-DIMETHYLPHENETHYLAMINE	486	UJ	UG/KG
ACENAPHTHENE	486	UJ	UG/KG
ACENAPHTHYLENE	486	UJ	UG/KG
ACETOPHENONE	486	UJ	UG/KG
ANILINE	486	UJ	UG/KG
ANTHRACENE	486	UJ	UG/KG
ARAMITE	486	UJ	UG/KG
BENZO(A)ANTHRACENE	486	UJ	UG/KG
BENZO(A)PYRENE	486	UJ	UG/KG
BENZO(B)FLUORANTHENE	486	UJ	UG/KG
BENZO(G,H,I)PERYLENE	486	UJ	UG/KG
BENZO(K)FLUORANTHENE	486	UJ	UG/KG
BENZYL ALCOHOL	486	UJ	UG/KG
BIS(2-CHLOROETHOXY)METHANE	486	UJ	UG/KG
BIS(2-CHLOROETHYL)ETHER	486	UJ	UG/KG
BIS(2-ETHYLHEXYL)PHTHALATE	486	UJ	UG/KG
BUTYL BENZYL PHTHALATE	486	UJ	UG/KG
CHLOROBENZILATE	2430	UJ	UG/KG
CHRYSENE	486	UJ	UG/KG
DI-N-BUTYL PHTHALATE	486	UJ	UG/KG
DI-N-OCTYL PHTHALATE	486	UJ	UG/KG
DIALLATE	486	UJ	UG/KG
DIBENZO(A,H)ANTHRACENE	486	UJ	UG/KG
DIBENZOFURAN	486	UJ	UG/KG
DIETHYL PHTHALATE	486	UJ	UG/KG
DIMETHOATE	2430	UJ	UG/KG
DIMETHYL PHTHALATE	486	UJ	UG/KG
DINOSEB	486	UJ	UG/KG
DIPHENYLAMINE	486	UJ	UG/KG
DISULFOTON	486	UJ	UG/KG
ETHYL METHACRYLATE	486	UJ	UG/K
ETHYL METHANESULFONATE	486	UJ	UG/K
FAMPHUR	486	UJ	UG/K
FLUORANTHENE	486	UJ	UG/K
FLUORENE	486	UJ	UG/K
HEXACHLOROBENZENE	486	UJ	UG/K
HEXACHLOROBUTADIENE	486	UJ	UG/K
HEXACHLOROCYCLOPENTADIENE	486	UJ	UG/K
HEXACHLOROETHANE	486	UJ	UG/K
HEXACHLOROPROPENE	486	UJ	UG/K
INDENO(1,2,3-CD) PYRENE	486	UJ	UG/K
ISODRIN	486	UJ	UG/K
ISOPHORONE	486	UJ	UG/K
ISOSAFROLE	486	UJ	UG/K
KEPONE	486	UJ	UG/K
METHAPYRILENE	2430	UJ	UG/K
METHYL METHANESULFONATE	486	UJ	UG/K
N-NITROSO-DI-N-PROPYLAMINE	486	UJ	UG/K
N-NITROSODI-N-BUTYLAMINE	486	UJ	UG/K
N-NITROSODIETHYLAMINE	486	UJ	UG/K
N-NITROSODIMETHYLAMINE	486	UJ	UG/K
N-NITROSODIPHENYLAMINE	486	UJ	UG/K
N-NITROSOMETHYLETHYLAMINE	486	UJ	UG/K
N-NITROSOMORPHOLINE	486	UJ	UG/K
N-NITROSOPIPERIDINE	486	UJ	UG/K
N-NITROSOPYRROLIDINE	486	UJ	UG/K
NAPHTHALENE	486	UJ	UG/K
NITROBENZENE	486	UJ	UG/K
O,O,O-TRIETHYLPHOSPHOROTHIOATE	486	UJ	UG/K
O-TOLUIDINE	486	UJ	UG/K
P-CRESOL	486	UJ	UG/K
P-DIMETHYLAMINOAZOBENZENE	486	UJ	UG/K
P-PHENYLENEDIAMINE	973	UJ	UG/K
PENTACHLOROBENZENE	486	UJ	UG/K
PENTACHLOROETHANE	486	UJ	UG/K
PENTACHLORONITROBENZENE	486	UJ	UG/K
PENTACHLOROPHENOL	486	UJ	UG/K
PHENACETIN	486	UJ	UG/K
PHENANTHRENE	486	UJ	UG/K
PHENOL	486	UJ	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A055S

SEMIVOLATILES

PRONAMIDE	486	UJ	UG/KG
PYRENE	486	UJ	UG/KG
PYRIDINE	486	UJ	UG/KG
SAFROLE	486	UJ	UG/KG
SULFOTEP	486	UJ	UG/KG
THIONAZIN	486	UJ	UG/KG

Sample Number: S7DPSS
Sample Date: 10/1/96
Laboratory ID: 9610055-09
QC Type: NORMAL
% Moisture: 71
Location: S7DPSS

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	1130	UJ	UG/KG
1,2,4-TRICHLOROBENZENE	1130	UJ	UG/KG
1,2-DICHLOROBENZENE	1130	UJ	UG/KG
1,3,5-TRINITROBENZENE	5630	UJ	UG/KG
1,3-DICHLOROBENZENE	1130	UJ	UG/KG
1,3-DINITROBENZENE	1130	UJ	UG/KG
1,4-DICHLOROBENZENE	1130	UJ	UG/KG
1,4-DIOXANE	1130	UJ	UG/KG
1,4-NAPHTHOQUINONE	1130	UJ	UG/KG
1-NAPHTHYLAMINE	1130	UJ	UG/KG
2,3,4,6-TETRACHLOROPHENOL	1130	UJ	UG/KG
2,4,5-TRICHLOROPHENOL	1130	UJ	UG/KG
2,4,6-TRICHLOROPHENOL	1130	UJ	UG/KG
2,4-DICHLOROPHENOL	1130	UJ	UG/KG
2,4-DIMETHYLPHENOL	1130	UJ	UG/KG
2,4-DINITROPHENOL	2250	UJ	UG/KG
2,4-DINITROTOLUENE	1130	UJ	UG/KG
2,6-DICHLOROPHENOL	1130	UJ	UG/KG
2,6-DINITROTOLUENE	1130	UJ	UG/KG
2-ACETYLAMINOFLUORENE	1130	UJ	UG/KG
2-CHLORONAPHTHALENE	1130	UJ	UG/KG
2-CHLOROPHENOL	1130	UJ	UG/KG
2-METHYL-4,6-DINITROPHENOL	1130	UJ	UG/KG
2-METHYLNAPHTHALENE	1130	UJ	UG/KG
2-METHYLPHENOL	1130	UJ	UG/KG
2-NAPHTHYLAMINE	1130	UJ	UG/KG
2-NITROANILINE	1130	UJ	UG/KG
2-NITROPHENOL	1130	UJ	UG/KG
2-PICOLINE	1130	UJ	UG/KG
3,3'-DICHLOROBENZIDINE	5630	UJ	UG/KG
3,3'-DIMETHYLBENZIDINE	5630	UJ	UG/KG
3-METHYLCHOLANTHRENE	1130	UJ	UG/KG
3-NITROANILINE	1130	UJ	UG/KG
4-AMINOBIPHENYL	1130	UJ	UG/
4-BROMOPHENYL PHENYL ETHER	1130	UJ	UG/
4-CHLORO-3-METHYLPHENOL	1130	UJ	UG/
4-CHLOROANILINE	1130	UJ	UG/
4-CHLOROPHENYL PHENYL ETHER	1130	UJ	UG/
4-NITROANILINE	1130	UJ	UG/
4-NITROPHENOL	2250	UJ	UG/
4-NITROQUINOLINE-1-OXIDE	1130	UJ	UG/
5-NITRO-O-TOLUIDINE	1130	UJ	UG/
7,12-DIMETHYLBENZ(A)ANTHRACENE	1130	UJ	UG/
A,A-DIMETHYLPHENETHYLAMINE	1130	UJ	UG/K
ACENAPHTHENE	1130	UJ	UG/K
ACENAPHTHYLENE	1130	UJ	UG/K
ACETOPHENONE	1130	UJ	UG/K
ANILINE	1130	UJ	UG/K
ANTHRACENE	1130	UJ	UG/K
ARAMITE	1130	UJ	UG/K
BENZO(A)ANTHRACENE	1130	UJ	UG/K
BENZO(A)PYRENE	1130	UJ	UG/K
BENZO(B)FLUORANTHENE	1130	UJ	UG/K
BENZO(G,H,I)PERYLENE	1130	UJ	UG/K
BENZO(K)FLUORANTHENE	1130	UJ	UG/K
BENZYL ALCOHOL	1130	UJ	UG/K
BIS(2-CHLOROETHOXY)METHANE	1130	UJ	UG/K
BIS(2-CHLOROETHYL)ETHER	1130	UJ	UG/K
BIS(2-ETHYLHEXYL)PHTHALATE	1130	UJ	UG/K
BUTYL BENZYL PHTHALATE	1130	UJ	UG/K
CHLOROBENZILATE	5630	UJ	UG/K
CHRYSENE	1130	UJ	UG/K
DI-N-BUTYL PHTHALATE	1130	UJ	UG/K
DI-N-OCTYL PHTHALATE	1130	UJ	UG/K
DIALLATE	1130	UJ	UG/K
DIBENZO(A,H)ANTHRACENE	1130	UJ	UG/K
DIBENZOFURAN	1130	UJ	UG/K
DIETHYL PHTHALATE	1130	UJ	UG/K
DIMETHOATE	5630	UJ	UG/K
DIMETHYL PHTHALATE	1130	UJ	UG/K
DINOSEB	1130	UJ	UG/K
DIPHENYLAMINE	1130	UJ	UG/K
DISULFOTON	1130	UJ	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A055S

SEMIVOLATILES

ETHYL METHACRYLATE	1130	UJ	UG/KG
ETHYL METHANESULFONATE	1130	UJ	UG/KG
FAMPHUR	1130	UJ	UG/KG
FLUORANTHENE	1130	UJ	UG/KG
FLUORENE	1130	UJ	UG/KG
HEXACHLOROBENZENE	1130	UJ	UG/KG
HEXACHLOROBUTADIENE	1130	UJ	UG/KG
HEXACHLOROCYCLOPENTADIENE	1130	UJ	UG/KG
HEXACHLOROETHANE	1130	UJ	UG/KG
HEXACHLOROPROPENE	1130	UJ	UG/KG
INDENO(1,2,3-CD) PYRENE	1130	UJ	UG/KG
ISODRIN	1130	UJ	UG/KG
ISOPHORONE	1130	UJ	UG/KG
ISOSAFROLE	1130	UJ	UG/KG
KEPONE	1130	UJ	UG/KG
METHAPYRILENE	5630	UJ	UG/KG
METHYL METHACRYLATE	1130	UJ	UG/KG
METHYL METHANESULFONATE	1130	UJ	UG/KG
N-NITROSO-DI-N-PROPYLAMINE	1130	UJ	UG/KG
N-NITROSODI-N-BUTYLAMINE	1130	UJ	UG/KG
N-NITROSODIETHYLAMINE	1130	UJ	UG/KG
N-NITROSODIMETHYLAMINE	1130	UJ	UG/KG
N-NITROSODIPHENYLAMINE	1130	UJ	UG/KG
N-NITROSOMETHYLETHYLAMINE	1130	UJ	UG/KG
N-NITROSOMORPHOLINE	1130	UJ	UG/KG
N-NITROSOPIPERIDINE	1130	UJ	UG/KG
N-NITROSOPYRROLIDINE	1130	UJ	UG/KG
NAPHTHALENE	1130	UJ	UG/KG
NITROBENZENE	1130	UJ	UG/KG
O,O,O-TRIETHYLPHOSPHOROTHIOATE	1130	UJ	UG/KG
O-TOLUIDINE	1130	UJ	UG/KG
P-CRESOL	1130	UJ	UG/KG
P-DIMETHYLAMINOAZOBENZENE	1130	UJ	UG/KG
P-PHENYLENEDIAMINE	2250	UJ	UG/KG
PENTACHLOROBENZENE	1130	UJ	UG/KG
PENTACHLOROETHANE	1130	UJ	UG/KG
PENTACHLORONITROBENZENE	1130	UJ	UG/KG
PENTACHLOROPHENOL	1130	UJ	UG/KG
PHENACETIN	1130	UJ	UG/KG
PHENANTHRENE	1130	UJ	UG/KG
PHENOL	1130	UJ	UG/KG
PRONAMIDE	1130	UJ	UG/KG
PYRENE	1130	UJ	UG/KG
PYRIDINE	1130	UJ	UG/KG
SAFROLE	1130	UJ	UG/KG
SULFOTEP	1130	UJ	UG/KG
THIONAZIN	1130	UJ	UG/KG

Sample Number: S7SS-04
Sample Date: 10/1/96
Laboratory ID: 9610055-04
QC Type: NORMAL
% Moisture: 88
Location: S7SS-4

	RESULT	QUAL	UNI
1,2,4,5-TETRACHLOROBENZENE	2750	UJ	UG/
1,2,4-TRICHLOROBENZENE	2750	UJ	UG/
1,2-DICHLOROBENZENE	2750	UJ	UG/
1,3,5-TRINITROBENZENE	13700	UJ	UG/
1,3-DICHLOROBENZENE	2750	UJ	UG/
1,3-DINITROBENZENE	2750	UJ	UG/
1,4-DICHLOROBENZENE	2750	UJ	UG/
1,4-DIOXANE	2750	UJ	UG/
1,4-NAPHTHOQUINONE	2750	UJ	UG/
1-NAPHTHYLAMINE	2750	UJ	UG/
2,3,4,6-TETRACHLOROPHENOL	2750	UJ	UG/
2,4,5-TRICHLOROPHENOL	2750	UJ	UG/
2,4,6-TRICHLOROPHENOL	2750	UJ	UG/
2,4-DICHLOROPHENOL	2750	UJ	UG/
2,4-DIMETHYLPHENOL	2750	UJ	UG/
2,4-DINITROPHENOL	5490	UJ	UG/
2,4-DINITROTOLUENE	2750	UJ	UG/
2,6-DICHLOROPHENOL	2750	UJ	UG/
2,6-DINITROTOLUENE	2750	UJ	UG/
2-ACETYLAMINOFLUORENE	2750	UJ	UG/
2-CHLORONAPHTHALENE	2750	UJ	UG/
2-CHLOROPHENOL	2750	UJ	UG/
2-METHYL-4,6-DINITROPHENOL	2750	UJ	UG/
2-METHYLNAPHTHALENE	2750	UJ	UG/
2-METHYLPHENOL	2750	UJ	UG/
2-NAPHTHYLAMINE	2750	UJ	UG/
2-NITROANILINE	2750	UJ	UG/
2-NITROPHENOL	2750	UJ	UG/
2-PICOLINE	2750	UJ	UG/
3,3'-DICHLOROBENZIDINE	13700	UJ	UG/
3,3'-DIMETHYLBENZIDINE	13700	UJ	UG/
3-METHYLCHOLANTHRENE	2750	UJ	UG/
3-NITROANILINE	2750	UJ	UG/

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A055S

SEMIVOLATILES

4-AMINOBIPHENYL	2750	UJ	UG/KG
4-BROMOPHENYL PHENYL ETHER	2750	UJ	UG/KG
4-CHLORO-3-METHYLPHENOL	2750	UJ	UG/KG
4-CHLOROANILINE	2750	UJ	UG/KG
4-CHLOROPHENYL PHENYL ETHER	2750	UJ	UG/KG
4-NITROANILINE	2750	UJ	UG/KG
4-NITROPHENOL	5490	UJ	UG/KG
4-NITROQUINOLINE-1-OXIDE	2750	UJ	UG/KG
5-NITRO-O-TOLUIDINE	2750	UJ	UG/KG
7,12-DIMETHYLBENZ(A)ANTHRACENE	2750	UJ	UG/KG
A,A-DIMETHYLPHENETHYLAMINE	2750	UJ	UG/KG
ACENAPHTHENE	2750	UJ	UG/KG
ACENAPHTHYLENE	2750	UJ	UG/KG
ACETOPHENONE	2750	UJ	UG/KG
ANILINE	2750	UJ	UG/KG
ANTHRACENE	2750	UJ	UG/KG
ARAMITE	2750	UJ	UG/KG
BENZO(A)ANTHRACENE	2750	UJ	UG/KG
BENZO(A)PYRENE	2750	UJ	UG/KG
BENZO(B)FLUORANTHENE	2750	UJ	UG/KG
BENZO(G,H,I)PERYLENE	2750	UJ	UG/KG
BENZO(K)FLUORANTHENE	2750	UJ	UG/KG
BENZYL ALCOHOL	2750	UJ	UG/KG
BIS(2-CHLOROETHOXY)METHANE	2750	UJ	UG/KG
BIS(2-CHLOROETHYL)ETHER	2750	UJ	UG/KG
BIS(2-ETHYLHEXYL)PHTHALATE	2750	UJ	UG/KG
BUTYL BENZYL PHTHALATE	2750	UJ	UG/KG
CHLOROBENZILATE	13700	UJ	UG/KG
CHRYSENE	2750	UJ	UG/KG
DI-N-BUTYL PHTHALATE	2750	UJ	UG/KG
DI-N-OCTYL PHTHALATE	2750	UJ	UG/KG
DIALLATE	2750	UJ	UG/KG
DIBENZO(A,H)ANTHRACENE	2750	UJ	UG/KG
DIBENZOFURAN	2750	UJ	UG/KG
DIETHYL PHTHALATE	2750	UJ	UG/KG
DIMETHOATE	13700	UJ	UG/KG
DIMETHYL PHTHALATE	2750	UJ	UG/KG
DINOSEB	2750	UJ	UG/KG
DIPHENYLAMINE	2750	UJ	UG/KG
DISULFOTON	2750	UJ	UG/KG

ETHYL METHACRYLATE	2750	UJ	UG/KG
ETHYL METHANESULFONATE	2750	UJ	UG/KG
FAMPHUR	2750	UJ	UG/KG
FLUORANTHENE	2750	UJ	UG/KG
FLUORENE	2750	UJ	UG/KG
HEXACHLOROBENZENE	2750	UJ	UG/KG
HEXACHLOROBUTADIENE	2750	UJ	UG/KG
HEXACHLOROCYCLOPENTADIENE	2750	UJ	UG/KG
HEXACHLOROETHANE	2750	UJ	UG/KG
HEXACHLOROPROPENE	2750	UJ	UG/KG
INDENO(1,2,3-CD) PYRENE	2750	UJ	UG/KG
ISODRIN	2750	UJ	UG/KG
ISOPHORONE	2750	UJ	UG/KG
ISOSAFROLE	2750	UJ	UG/KG
KEPONE	2750	UJ	UG/KG
METHAPYRILENE	13700	UJ	UG/KG
METHYL METHACRYLATE	2750	UJ	UG/KG
METHYL METHANESULFONATE	2750	UJ	UG/KG
N-NITROSO-DI-N-PROPYLAMINE	2750	UJ	UG/KG
N-NITROSODI-N-BUTYLAMINE	2750	UJ	UG/KG
N-NITROSODIETHYLAMINE	2750	UJ	UG/KG
N-NITROSODIMETHYLAMINE	2750	UJ	UG/KG
N-NITROSODIPHENYLAMINE	2750	UJ	UG/KG
N-NITROSOMETHYLETHYLAMINE	2750	UJ	UG/KG
N-NITROSOMORPHOLINE	2750	UJ	UG/KG
N-NITROSOPIPERIDINE	2750	UJ	UG/KG
N-NITROSOPYRROLIDINE	2750	UJ	UG/KG
NAPHTHALENE	2750	UJ	UG/KG
NITROBENZENE	2750	UJ	UG/KG
O,O,O-TRIETHYLPHOSPHOROTHIOATE	2750	UJ	UG/KG
O-TOLUIDINE	2750	UJ	UG/KG
P-CRESOL	2750	UJ	UG/KG
P-DIMETHYLAMINOAZOBENZENE	2750	UJ	UG/KG
P-PHENYLENEDIAMINE	5490	UJ	UG/KG
PENTACHLOROBENZENE	2750	UJ	UG/KG
PENTACHLOROETHANE	2750	UJ	UG/KG
PENTACHLORONITROBENZENE	2750	UJ	UG/KG
PENTACHLOROPHENOL	2750	UJ	UG/KG
PHENACETIN	2750	UJ	UG/KG
PHENANTHRENE	2750	UJ	UG/KG

PHENOL	2750	UJ	UG/
PRONAMIDE	2750	UJ	UG/
PYRENE	2750	UJ	UG/
PYRIDINE	2750	UJ	UG/
SAFROLE	2750	UJ	UG/
SULFOTEP	2750	UJ	UG/
THIONAZIN	2750	UJ	UG/

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A055S

SEMIVOLATILES

Sample Number: S7SS-05
Sample Date: 10/1/96
Laboratory ID: 9610055-08
QC Type: NORMAL
% Moisture: 68
Location: S7SS-5

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	1020	UJ	UG/KG
1,2,4-TRICHLOROBENZENE	1020	UJ	UG/KG
1,2-DICHLOROBENZENE	1020	UJ	UG/KG
1,3,5-TRINITROBENZENE	5130	UJ	UG/KG
1,3-DICHLOROBENZENE	1020	UJ	UG/KG
1,3-DINITROBENZENE	1020	UJ	UG/KG
1,4-DICHLOROBENZENE	1020	UJ	UG/KG
1,4-DIOXANE	1020	UJ	UG/KG
1,4-NAPHTHOQUINONE	1020	UJ	UG/KG
1-NAPHTHYLAMINE	1020	UJ	UG/KG
2,3,4,6-TETRACHLOROPHENOL	1020	UJ	UG/KG
2,4,5-TRICHLOROPHENOL	1020	UJ	UG/KG
2,4,6-TRICHLOROPHENOL	1020	UJ	UG/KG
2,4-DICHLOROPHENOL	1020	UJ	UG/KG
2,4-DIMETHYLPHENOL	1020	UJ	UG/KG
2,4-DINITROPHENOL	2050	UJ	UG/KG
2,4-DINITROTOLUENE	1020	UJ	UG/KG
2,6-DICHLOROPHENOL	1020	UJ	UG/KG
2,6-DINITROTOLUENE	1020	UJ	UG/KG
2-ACETYLAMINOFLUORENE	1020	UJ	UG/KG
2-CHLORONAPHTHALENE	1020	UJ	UG/KG
2-CHLOROPHENOL	1020	UJ	UG/KG
2-METHYL-4,6-DINITROPHENOL	1020	UJ	UG/KG
2-METHYLNAPHTHALENE	1020	UJ	UG/KG
2-METHYLPHENOL	1020	UJ	UG/KG
2-NAPHTHYLAMINE	1020	UJ	UG/KG
2-NITROANILINE	1020	UJ	UG/KG
2-NITROPHENOL	1020	UJ	UG/KG
2-PICOLINE	1020	UJ	UG/KG
3,3'-DICHLOROBENZIDINE	5130	UJ	UG/KG
3,3'-DIMETHYLBENZIDINE	5130	UJ	UG/KG
3-METHYLCHOLANTHRENE	1020	UJ	UG/KG
3-NITROANILINE	1020	UJ	UG/KG
4-AMINOBIPHENYL	1020	UJ	UG/KG
4-BROMOPHENYL PHENYL ETHER	1020	UJ	UG/KG
4-CHLORO-3-METHYLPHENOL	1020	UJ	UG/KG
4-CHLOROANILINE	1020	UJ	UG/KG
4-CHLOROPHENYL PHENYL ETHER	1020	UJ	UG/KG
4-NITROANILINE	1020	UJ	UG/KG
4-NITROPHENOL	2050	UJ	UG/KG
4-NITROQUINOLINE-1-OXIDE	1020	UJ	UG/KG
5-NITRO-O-TOLUIDINE	1020	UJ	UG/KG
7,12-DIMETHYLBENZ(A)ANTHRACENE	1020	UJ	UG/KG
A,A-DIMETHYLPHENETHYLAMINE	1020	UJ	UG/KG
ACENAPHTHENE	1020	UJ	UG/KG
ACENAPHTHYLENE	1020	UJ	UG/KG
ACETOPHENONE	1020	UJ	UG/KG
ANILINE	1020	UJ	UG/KG
ANTHRACENE	1020	UJ	UG/KG
ARAMITE	1020	UJ	UG/KG
BENZO(A)ANTHRACENE	1020	UJ	UG/KG
BENZO(A)PYRENE	1020	UJ	UG/KG
BENZO(B)FLUORANTHENE	1020	UJ	UG/KG
BENZO(G,H,I)PERYLENE	1020	UJ	UG/KG
BENZO(K)FLUORANTHENE	1020	UJ	UG/KG
BENZYL ALCOHOL	1020	UJ	UG/KG
BIS(2-CHLOROETHOXY)METHANE	1020	UJ	UG/KG
BIS(2-CHLOROETHYL)ETHER	1020	UJ	UG/KG
BIS(2-ETHYLHEXYL)PHTHALATE	1020	UJ	UG/KG
BUTYL BENZYL PHTHALATE	1020	UJ	UG/KG
CHLOROBENZILATE	5130	UJ	UG/KG
CHRYSENE	1020	UJ	UG/KG
DI-N-BUTYL PHTHALATE	1020	UJ	UG/KG
DI-N-OCTYL PHTHALATE	1020	UJ	UG/KG
DIALLATE	1020	UJ	UG/KG
DIBENZO(A,H)ANTHRACENE	1020	UJ	UG/KG
DIBENZOFURAN	1020	UJ	UG/KG
DIETHYL PHTHALATE	1020	UJ	UG/KG
DIMETHOATE	5130	UJ	UG/KG
DIMETHYL PHTHALATE	1020	UJ	UG/KG
DINOSEB	1020	UJ	UG/KG
DIPHENYLAMINE	1020	UJ	UG/KG
DISULFOTON	1020	UJ	UG/KG
ETHYL METHACRYLATE	1020	UJ	UG/K
ETHYL METHANESULFONATE	1020	UJ	UG/K
FAMPHUR	1020	UJ	UG/K
FLUORANTHENE	1020	UJ	UG/K
FLUORENE	1020	UJ	UG/K
HEXACHLOROBENZENE	1020	UJ	UG/K
HEXACHLOROBUTADIENE	1020	UJ	UG/K
HEXACHLOROCYCLOPENTADIENE	1020	UJ	UG/K
HEXACHLOROETHANE	1020	UJ	UG/K
HEXACHLOROPROPENE	1020	UJ	UG/K
INDENO(1,2,3-CD) PYRENE	1020	UJ	UG/K
ISODRIN	1020	UJ	UG/K
ISOPHORONE	1020	UJ	UG/K
ISOSAFROLE	1020	UJ	UG/K
KEPONE	1020	UJ	UG/K
METHAPYRILENE	5130	UJ	UG/K
METHYL METHACRYLATE	1020	UJ	UG/K
METHYL METHANESULFONATE	1020	UJ	UG/K
N-NITROSO-DI-N-PROPYLAMINE	1020	UJ	UG/K
N-NITROSODI-N-BUTYLAMINE	1020	UJ	UG/K
N-NITROSODIETHYLAMINE	1020	UJ	UG/K
N-NITROSODIMETHYLAMINE	1020	UJ	UG/K
N-NITROSODIPHENYLAMINE	1020	UJ	UG/K
N-NITROSOMETHYLETHYLAMINE	1020	UJ	UG/K
N-NITROSOMORPHOLINE	1020	UJ	UG/K
N-NITROSOPIPERIDINE	1020	UJ	UG/K
N-NITROSOPYRROLIDINE	1020	UJ	UG/K
NAPHTHALENE	1020	UJ	UG/K
NITROBENZENE	1020	UJ	UG/K
O,O,O-TRIETHYLPHOSPHOROTHIOATE	1020	UJ	UG/K
O-TOLUIDINE	1020	UJ	UG/K
P-CRESOL	1020	UJ	UG/K
P-DIMETHYLAMINOAZOBENZENE	1020	UJ	UG/K
P-PHENYLENEDIAMINE	2050	UJ	UG/K
PENTACHLOROBENZENE	1020	UJ	UG/K
PENTACHLOROETHANE	1020	UJ	UG/K
PENTACHLORONITROBENZENE	1020	UJ	UG/K
PENTACHLOROPHENOL	1020	UJ	UG/K
PHENACETIN	1020	UJ	UG/K
PHENANTHRENE	1020	UJ	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A055S

SEMIVOLATILES

PHENOL	1020	UJ	UG/KG
PRONAMIDE	1020	UJ	UG/KG
PYRENE	1020	UJ	UG/KG
PYRIDINE	1020	UJ	UG/KG
SAFROLE	1020	UJ	UG/KG
SULFOTEP	1020	UJ	UG/KG
THIONAZIN	1020	UJ	UG/KG

Sample Number: S7SS-06
Sample Date: 10/1/96
Laboratory ID: 9610055-05
QC Type: NORMAL
% Moisture: 81
Location: S7SS-6

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	1720	UJ	UG/KG
1,2,4-TRICHLOROBENZENE	1720	UJ	UG/KG
1,2-DICHLOROBENZENE	1720	UJ	UG/KG
1,3,5-TRINITROBENZENE	8600	UJ	UG/KG
1,3-DICHLOROBENZENE	1720	UJ	UG/KG
1,3-DINITROBENZENE	1720	UJ	UG/KG
1,4-DICHLOROBENZENE	1720	UJ	UG/KG
1,4-DIOXANE	1720	UJ	UG/KG
1,4-NAPHTHOQUINONE	1720	UJ	UG/KG
1-NAPHTHYLAMINE	1720	UJ	UG/KG
2,3,4,6-TETRACHLOROPHENOL	1720	UJ	UG/KG
2,4,5-TRICHLOROPHENOL	1720	UJ	UG/KG
2,4,6-TRICHLOROPHENOL	1720	UJ	UG/KG
2,4-DICHLOROPHENOL	1720	UJ	UG/KG
2,4-DIMETHYLPHENOL	1720	UJ	UG/KG
2,4-DINITROPHENOL	3440	UJ	UG/KG
2,4-DINITROTOLUENE	1720	UJ	UG/KG
2,6-DICHLOROPHENOL	1720	UJ	UG/KG
2,6-DINITROTOLUENE	1720	UJ	UG/KG
2-ACETYLAMINOFLUORENE	1720	UJ	UG/KG
2-CHLORONAPHTHALENE	1720	UJ	UG/KG
2-CHLOROPHENOL	1720	UJ	UG/KG
2-METHYL-4,6-DINITROPHENOL	1720	UJ	UG/KG
2-METHYLNAPHTHALENE	1720	UJ	UG/KG
2-METHYLPHENOL	1720	UJ	UG/KG
2-NAPHTHYLAMINE	1720	UJ	UG/KG
2-NITROANILINE	1720	UJ	UG/KG
2-NITROPHENOL	1720	UJ	UG/KG
2-PICOLINE	1720	UJ	UG/KG
3,3'-DICHLOROBENZIDINE	8600	UJ	UG/KG
3,3'-DIMETHYLBENZIDINE	8600	UJ	UG/KG
3-METHYLCHOLANTHRENE	1720	UJ	UG/KG
3-NITROANILINE	1720	UJ	UG/KG
4-AMINOBIPHENYL	1720	UJ	UG/
4-BROMOPHENYL PHENYL ETHER	1720	UJ	UG/
4-CHLORO-3-METHYLPHENOL	1720	UJ	UG/
4-CHLOROANILINE	1720	UJ	UG/
4-CHLOROPHENYL PHENYL ETHER	1720	UJ	UG/
4-NITROANILINE	1720	UJ	UG/
4-NITROPHENOL	3440	UJ	UG/
4-NITROQUINOLINE-1-OXIDE	1720	UJ	UG/
5-NITRO-O-TOLUIDINE	1720	UJ	UG/
7,12-DIMETHYLBENZ(A)ANTHRACENE	1720	UJ	UG/
A,A-DIMETHYLPHENETHYLAMINE	1720	UJ	UG/
ACENAPHTHENE	1720	UJ	UG/
ACENAPHTHYLENE	1720	UJ	UG/
ACETOPHENONE	1720	UJ	UG/
ANILINE	1720	UJ	UG/
ANTHRACENE	1720	UJ	UG/K
ARAMITE	1720	UJ	UG/K
BENZO(A)ANTHRACENE	1910	J	UG/
BENZO(A)PYRENE	1720	UJ	UG/
BENZO(B)FLUORANTHENE	3500	J	UG/K
BENZO(G,H,I)PERYLENE	992	J	UG/K
BENZO(K)FLUORANTHENE	1720	UJ	UG/K
BENZYL ALCOHOL	1720	UJ	UG/K
BIS(2-CHLOROETHOXY)METHANE	1720	UJ	UG/K
BIS(2-CHLOROETHYL)ETHER	1720	UJ	UG/K
BIS(2-ETHYLHEXYL)PHTHALATE	1720	UJ	UG/K
BUTYL BENZYL PHTHALATE	1720	UJ	UG/K
CHLOROBENZILATE	8600	UJ	UG/K
CHRYSENE	2120	J	UG/K
DI-N-BUTYL PHTHALATE	1720	UJ	UG/K
DI-N-OCTYL PHTHALATE	1720	UJ	UG/K
DIALLATE	1720	UJ	UG/K
DIBENZO(A,H)ANTHRACENE	1720	UJ	UG/K
DIBENZOFURAN	1720	UJ	UG/K
DIETHYL PHTHALATE	1720	UJ	UG/K
DIMETHOATE	8600	UJ	UG/K
DIMETHYL PHTHALATE	1720	UJ	UG/K
DINOSEB	1720	UJ	UG/K
DIPHENYLAMINE	1720	UJ	UG/K
DISULFOTON	1720	UJ	UG/K

SDG: 6A055S

SEMIVOLATILES

ETHYL METHACRYLATE	1720	UJ	UG/KG
ETHYL METHANESULFONATE	1720	UJ	UG/KG
FAMPHUR	1720	UJ	UG/KG
FLUORANTHENE	4000	J	UG/KG
FLUORENE	1720	UJ	UG/KG
HEXACHLOROBENZENE	1720	UJ	UG/KG
HEXACHLOROBUTADIENE	1720	UJ	UG/KG
HEXACHLOROCYCLOPENTADIENE	1720	UJ	UG/KG
HEXACHLOROETHANE	1720	UJ	UG/KG
HEXACHLOROPROPENE	1720	UJ	UG/KG
INDENO(1,2,3-CD) PYRENE	1720	UJ	UG/KG
ISODRIN	1720	UJ	UG/KG
ISOPHORONE	1720	UJ	UG/KG
ISOSAFROLE	1720	UJ	UG/KG
KEPONE	1720	UJ	UG/KG
METHAPYRILENE	8600	UJ	UG/KG
METHYL METHACRYLATE	1720	UJ	UG/KG
METHYL METHANESULFONATE	1720	UJ	UG/KG
N-NITROSO-DI-N-PROPYLAMINE	1720	UJ	UG/KG
N-NITROSODI-N-BUTYLAMINE	1720	UJ	UG/KG
N-NITROSODIETHYLAMINE	1720	UJ	UG/KG
N-NITROSODIMETHYLAMINE	1720	UJ	UG/KG
N-NITROSODIPHENYLAMINE	1720	UJ	UG/KG
N-NITROSOMETHYLETHYLAMINE	1720	UJ	UG/KG
N-NITROSOMORPHOLINE	1720	UJ	UG/KG
N-NITROSOPIPERIDINE	1720	UJ	UG/KG
N-NITROSOPYRROLIDINE	1720	UJ	UG/KG
NAPHTHALENE	1720	UJ	UG/KG
NITROBENZENE	1720	UJ	UG/KG
O,O,O-TRIETHYLPHOSPHOROTHIOATE	1720	UJ	UG/KG
O-TOLUIDINE	1720	UJ	UG/KG
P-CRESOL	1720	UJ	UG/KG
P-DIMETHYLAMINOAZOBENZENE	1720	UJ	UG/KG
P-PHENYLENEDIAMINE	3440	UJ	UG/KG
PENTACHLOROBENZENE	1720	UJ	UG/KG
PENTACHLOROETHANE	1720	UJ	UG/KG
PENTACHLORONITROBENZENE	1720	UJ	UG/KG
PENTACHLOROPHENOL	1720	UJ	UG/KG
PHENACETIN	1720	UJ	UG/KG
PHENANTHRENE	1720	UJ	UG/KG
PHENOL	1720	UJ	UG/KG
PRONAMIDE	1720	UJ	UG/KG
PYRENE	4000	J	UG/KG
PYRIDINE	1720	UJ	UG/KG
SAFROLE	1720	UJ	UG/KG
SULFOTEP	1720	UJ	UG/KG
THIONAZIN	1720	UJ	UG/KG

Sample Number: S7SS-07
Sample Date: 10/1/96
Laboratory ID: 9610055-06
QC Type: NORMAL
% Moisture: 87
Location: S7SS-7

	RESULT	QUAL	UNIT
1,2,4,5-TETRACHLOROBENZENE	2540	UJ	UG/K
1,2,4-TRICHLOROBENZENE	2540	UJ	UG/K
1,2-DICHLOROBENZENE	2540	UJ	UG/K
1,3,5-TRINITROBENZENE	12700	UJ	UG/K
1,3-DICHLOROBENZENE	2540	UJ	UG/K
1,3-DINITROBENZENE	2540	UJ	UG/K
1,4-DICHLOROBENZENE	2540	UJ	UG/K
1,4-DIOXANE	2540	UJ	UG/K
1,4-NAPHTHOQUINONE	2540	UJ	UG/K
1-NAPHTHYLAMINE	2540	UJ	UG/K
2,3,4,6-TETRACHLOROPHENOL	2540	UJ	UG/K
2,4,5-TRICHLOROPHENOL	2540	UJ	UG/K
2,4,6-TRICHLOROPHENOL	2540	UJ	UG/K
2,4-DICHLOROPHENOL	2540	UJ	UG/K
2,4-DIMETHYLPHENOL	2540	UJ	UG/K
2,4-DINITROPHENOL	5080	UJ	UG/K
2,4-DINITROTOLUENE	2540	UJ	UG/K
2,6-DICHLOROPHENOL	2540	UJ	UG/K
2,6-DINITROTOLUENE	2540	UJ	UG/K
2-ACETYLAMINOFLUORENE	2540	UJ	UG/K
2-CHLORONAPHTHALENE	2540	UJ	UG/K
2-CHLOROPHENOL	2540	UJ	UG/K
2-METHYL-4,6-DINITROPHENOL	2540	UJ	UG/K
2-METHYLNAPHTHALENE	2540	UJ	UG/K
2-METHYLPHENOL	2540	UJ	UG/K
2-NAPHTHYLAMINE	2540	UJ	UG/K
2-NITROANILINE	2540	UJ	UG/K
2-NITROPHENOL	2540	UJ	UG/K
2-PICOLINE	2540	UJ	UG/K
3,3'-DICHLOROBENZIDINE	12700	UJ	UG/K
3,3'-DIMETHYLBENZIDINE	12700	UJ	UG/K
3-METHYLCHOLANTHRENE	2540	UJ	UG/K
3-NITROANILINE	2540	UJ	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A055S

SEMIVOLATILES

4-AMINOBIPHENYL	2540	UJ	UG/KG
4-BROMOPHENYL PHENYL ETHER	2540	UJ	UG/KG
4-CHLORO-3-METHYLPHENOL	2540	UJ	UG/KG
4-CHLOROANILINE	2540	UJ	UG/KG
4-CHLOROPHENYL PHENYL ETHER	2540	UJ	UG/KG
4-NITROANILINE	2540	UJ	UG/KG
4-NITROPHENOL	5080	UJ	UG/KG
4-NITROQUINOLINE-1-OXIDE	2540	UJ	UG/KG
5-NITRO-O-TOLUIDINE	2540	UJ	UG/KG
7,12-DIMETHYLBENZ(A)ANTHRACENE	2540	UJ	UG/KG
A,A-DIMETHYLPHENETHYLAMINE	2540	UJ	UG/KG
ACENAPHTHENE	2540	UJ	UG/KG
ACENAPHTHYLENE	2540	UJ	UG/KG
ACETOPHENONE	2540	UJ	UG/KG
ANILINE	2540	UJ	UG/KG
ANTHRACENE	2540	UJ	UG/KG
ARAMITE	2540	UJ	UG/KG
BENZO(A)ANTHRACENE	2540	UJ	UG/KG
BENZO(A)PYRENE	2540	UJ	UG/KG
BENZO(B)FLUORANTHENE	2540	UJ	UG/KG
BENZO(G,H,I)PERYLENE	2540	UJ	UG/KG
BENZO(K)FLUORANTHENE	2540	UJ	UG/KG
BENZYL ALCOHOL	2540	UJ	UG/KG
BIS(2-CHLOROETHOXY)METHANE	2540	UJ	UG/KG
BIS(2-CHLOROETHYL)ETHER	2540	UJ	UG/KG
BIS(2-ETHYLHEXYL)PHTHALATE	2540	UJ	UG/KG
BUTYL BENZYL PHTHALATE	2540	UJ	UG/KG
CHLOROBENZILATE	12700	UJ	UG/KG
CHRYSENE	2540	UJ	UG/KG
DI-N-BUTYL PHTHALATE	2540	UJ	UG/KG
DI-N-OCTYL PHTHALATE	2540	UJ	UG/KG
DIALLATE	2540	UJ	UG/KG
DIBENZO(A,H)ANTHRACENE	2540	UJ	UG/KG
DIBENZOFURAN	2540	UJ	UG/KG
DIETHYL PHTHALATE	2540	UJ	UG/KG
DIMETHOATE	12700	UJ	UG/KG
DIMETHYL PHTHALATE	2540	UJ	UG/KG
DINOSEB	2540	UJ	UG/KG
DIPHENYLAMINE	2540	UJ	UG/KG
DISULFOTON	2540	UJ	UG/KG
ETHYL METHACRYLATE	2540	UJ	UG/KG
ETHYL METHANESULFONATE	2540	UJ	UG/KG
FAMPHUR	2540	UJ	UG/KG
FLUORANTHENE	2540	UJ	UG/KG
FLUORENE	2540	UJ	UG/KG
HEXACHLOROBENZENE	2540	UJ	UG/KG
HEXACHLOROBUTADIENE	2540	UJ	UG/KG
HEXACHLOROCYCLOPENTADIENE	2540	UJ	UG/KG
HEXACHLOROETHANE	2540	UJ	UG/KG
HEXACHLOROPROPENE	2540	UJ	UG/KG
INDENO(1,2,3-CD) PYRENE	2540	UJ	UG/KG
ISODRIN	2540	UJ	UG/KG
ISOPHORONE	2540	UJ	UG/KG
ISOSAFROLE	2540	UJ	UG/KG
KEPONE	2540	UJ	UG/KG
METHAPYRILENE	12700	UJ	UG/KG
METHYL METHACRYLATE	2540	UJ	UG/KG
METHYL METHANESULFONATE	2540	UJ	UG/KG
N-NITROSO-DI-N-PROPYLAMINE	2540	UJ	UG/KG
N-NITROSODI-N-BUTYLAMINE	2540	UJ	UG/KG
N-NITROSODIETHYLAMINE	2540	UJ	UG/KG
N-NITROSODIMETHYLAMINE	2540	UJ	UG/KG
N-NITROSODIPHENYLAMINE	2540	UJ	UG/KG
N-NITROSOMETHYLETHYLAMINE	2540	UJ	UG/KG
N-NITROSOMORPHOLINE	2540	UJ	UG/KG
N-NITROSOPIPERIDINE	2540	UJ	UG/KG
N-NITROSOPYRROLIDINE	2540	UJ	UG/KG
NAPHTHALENE	2540	UJ	UG/KG
NITROBENZENE	2540	UJ	UG/KG
O,O,O-TRIETHYLPHOSPHOROTHIOATE	2540	UJ	UG/KG
O-TOLUIDINE	2540	UJ	UG/KG
P-CRESOL	2540	UJ	UG/KG
P-DIMETHYLAMINOAZOBENZENE	2540	UJ	UG/KG
P-PHENYLENEDIAMINE	5080	UJ	UG/KG
PENTACHLOROBENZENE	2540	UJ	UG/KG
PENTACHLOROETHANE	2540	UJ	UG/KG
PENTACHLORONITROBENZENE	2540	UJ	UG/KG
PENTACHLOROPHENOL	2540	UJ	UG/KG
PHENACETIN	2540	UJ	UG/KG
PHENANTHRENE	2540	UJ	UG/KG
PHENOL	2540	UJ	UG/
PRONAMIDE	2540	UJ	UG/
PYRENE	2540	UJ	UG/
PYRIDINE	2540	UJ	UG/
SAFROLE	2540	UJ	UG/
SULFOTEP	2540	UJ	UG/
THIONAZIN	2540	UJ	UG/

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A055S

SEMIVOLATILES

Sample Number: S7SS-08
Sample Date: 10/1/96
Laboratory ID: 9610055-07
QC Type: NORMAL
% Moisture: 88
Location: S7SS-8

	RESULT	QUAL	UNITS
1,2,4,5-TETRACHLOROBENZENE	2710	UJ	UG/KG
1,2,4-TRICHLOROBENZENE	2710	UJ	UG/KG
1,2-DICHLOROBENZENE	2710	UJ	UG/KG
1,3,5-TRINITROBENZENE	13600	UJ	UG/KG
1,3-DICHLOROBENZENE	2710	UJ	UG/KG
1,3-DINITROBENZENE	2710	UJ	UG/KG
1,4-DICHLOROBENZENE	2710	UJ	UG/KG
1,4-DIOXANE	2710	UJ	UG/KG
1,4-NAPHTHOQUINONE	2710	UJ	UG/KG
1-NAPHTHYLAMINE	2710	UJ	UG/KG
2,3,4,6-TETRACHLOROPHENOL	2710	UJ	UG/KG
2,4,5-TRICHLOROPHENOL	2710	UJ	UG/KG
2,4,6-TRICHLOROPHENOL	2710	UJ	UG/KG
2,4-DICHLOROPHENOL	2710	UJ	UG/KG
2,4-DIMETHYLPHENOL	2710	UJ	UG/KG
2,4-DINITROPHENOL	5420	UJ	UG/KG
2,4-DINITROTOLUENE	2710	UJ	UG/KG
2,6-DICHLOROPHENOL	2710	UJ	UG/KG
2,6-DINITROTOLUENE	2710	UJ	UG/KG
2-ACETYLAMINOFLUORENE	2710	UJ	UG/KG
2-CHLORONAPHTHALENE	2710	UJ	UG/KG
2-CHLOROPHENOL	2710	UJ	UG/KG
2-METHYL-4,6-DINITROPHENOL	2710	UJ	UG/KG
2-METHYLNAPHTHALENE	2710	UJ	UG/KG
2-METHYLPHENOL	2710	UJ	UG/KG
2-NAPHTHYLAMINE	2710	UJ	UG/KG
2-NITROANILINE	2710	UJ	UG/KG
2-NITROPHENOL	2710	UJ	UG/KG
2-PICOLINE	2710	UJ	UG/KG
3,3'-DICHLOROBENZIDINE	13600	UJ	UG/KG
3,3'-DIMETHYLBENZIDINE	13600	UJ	UG/KG
3-METHYLCHOLANTHRENE	2710	UJ	UG/KG
3-NITROANILINE	2710	UJ	UG/KG
4-AMINOBIPHENYL	2710	UJ	UG/KG
4-BROMOPHENYL PHENYL ETHER	2710	UJ	UG/KG
4-CHLORO-3-METHYLPHENOL	2710	UJ	UG/KG
4-CHLOROANILINE	2710	UJ	UG/KG
4-CHLOROPHENYL PHENYL ETHER	2710	UJ	UG/KG
4-NITROANILINE	2710	UJ	UG/KG
4-NITROPHENOL	5420	UJ	UG/KG
4-NITROQUINOLINE-1-OXIDE	2710	UJ	UG/KG
5-NITRO-O-TOLUIDINE	2710	UJ	UG/KG
7,12-DIMETHYLBENZ(A)ANTHRACENE	2710	UJ	UG/KG
A,A-DIMETHYLPHENETHYLAMINE	2710	UJ	UG/KG
ACENAPHTHENE	2710	UJ	UG/KG
ACENAPHTHYLENE	2710	UJ	UG/KG
ACETOPHENONE	2710	UJ	UG/KG
ANILINE	2710	UJ	UG/KG
ANTHRACENE	2710	UJ	UG/KG
ARAMITE	2710	UJ	UG/KG
BENZO(A)ANTHRACENE	2710	UJ	UG/KG
BENZO(A)PYRENE	2710	UJ	UG/KG
BENZO(B)FLUORANTHENE	2710	UJ	UG/KG
BENZO(G,H,I)PERYLENE	2710	UJ	UG/KG
BENZO(K)FLUORANTHENE	2710	UJ	UG/KG
BENZYL ALCOHOL	2710	UJ	UG/KG
BIS(2-CHLOROETHOXY)METHANE	2710	UJ	UG/KG
BIS(2-CHLOROETHYL)ETHER	2710	UJ	UG/KG
BIS(2-ETHYLHEXYL)PHTHALATE	2710	UJ	UG/KG
BUTYL BENZYL PHTHALATE	2710	UJ	UG/KG
CHLOROBENZILATE	13600	UJ	UG/KG
CHRYSENE	2710	UJ	UG/KG
DI-N-BUTYL PHTHALATE	2710	UJ	UG/KG
DI-N-OCTYL PHTHALATE	2710	UJ	UG/KG
DIALLATE	2710	UJ	UG/KG
DIBENZO(A,H)ANTHRACENE	2710	UJ	UG/KG
DIBENZOFURAN	2710	UJ	UG/KG
DIETHYL PHTHALATE	2710	UJ	UG/KG
DIMETHOATE	13600	UJ	UG/KG
DIMETHYL PHTHALATE	2710	UJ	UG/KG
DINOSEB	2710	UJ	UG/KG
DIPHENYLAMINE	2710	UJ	UG/KG
DISULFOTON	2710	UJ	UG/KG
ETHYL METHACRYLATE	2710	UJ	UG/
ETHYL METHANESULFONATE	2710	UJ	UG/
FAMPHUR	2710	UJ	UG/
FLUORANTHENE	2710	UJ	UG/
FLUORENE	2710	UJ	UG/
HEXACHLOROBENZENE	2710	UJ	UG/
HEXACHLOROBUTADIENE	2710	UJ	UG/
HEXACHLOROCYCLOPENTADIENE	2710	UJ	UG/
HEXACHLOROETHANE	2710	UJ	UG/
HEXACHLOROPROPENE	2710	UJ	UG/
INDENO(1,2,3-CD) PYRENE	2710	UJ	UG/
ISODRIN	2710	UJ	UG/
ISOPHORONE	2710	UJ	UG/
ISOSAFROLE	2710	UJ	UG/
KEPONE	2710	UJ	UG/
METHAPYRILENE	13600	UJ	UG/K
METHYL METHACRYLATE	2710	UJ	UG/K
METHYL METHANESULFONATE	2710	UJ	UG/K
N-NITROSO-DI-N-PROPYLAMINE	2710	UJ	UG/K
N-NITROSODI-N-BUTYLAMINE	2710	UJ	UG/K
N-NITROSODIETHYLAMINE	2710	UJ	UG/K
N-NITROSODIMETHYLAMINE	2710	UJ	UG/K
N-NITROSODIPHENYLAMINE	2710	UJ	UG/K
N-NITROSOMETHYLETHYLAMINE	2710	UJ	UG/K
N-NITROSOMORPHOLINE	2710	UJ	UG/K
N-NITROSOPIPERIDINE	2710	UJ	UG/K
N-NITROSOPYRROLIDINE	2710	UJ	UG/K
NAPHTHALENE	2710	UJ	UG/K
NITROBENZENE	2710	UJ	UG/K
O,O,O-TRIETHYLPHOSPHOROTHIOATE	2710	UJ	UG/K
O-TOLUIDINE	2710	UJ	UG/K
P-CRESOL	2710	UJ	UG/K
P-DIMETHYLAMINOAZOBENZENE	2710	UJ	UG/K
P-PHENYLENEDIAMINE	5420	UJ	UG/K
PENTACHLOROBENZENE	2710	UJ	UG/K
PENTACHLOROETHANE	2710	UJ	UG/K
PENTACHLORONITROBENZENE	2710	UJ	UG/K
PENTACHLOROPHENOL	2710	UJ	UG/K
PHENACETIN	2710	UJ	UG/K
PHENANTHRENE	2710	UJ	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

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SEMIVOLATILES

PHENOL	2710	UJ	UG/KG
PRONAMIDE	2710	UJ	UG/KG
PYRENE	2710	UJ	UG/KG
PYRIDINE	2710	UJ	UG/KG
SAFROLE	2710	UJ	UG/KG
SULFOTEP	2710	UJ	UG/KG
THIONAZIN	2710	UJ	UG/KG

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A055S

VOLATILES

Sample Number: S4SB-1
Sample Date: 10/5/96
Laboratory ID: 9610055-15
QC Type: NORMAL
% Moisture: 33
Location: S4SB-1

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	3	U	UG/KG
1,1,1-TRICHLOROETHANE	3	U	UG/KG
1,1,2,2-TETRACHLOROETHANE	3	U	UG/KG
1,1,2-TRICHLOROETHANE	3	U	UG/KG
1,1-DICHLOROETHANE	3	U	UG/KG
1,1-DICHLOROETHENE	3	U	UG/KG
1,2,3-TRICHLOROPROPANE	2	U	UG/KG
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/KG
1,2-DIBROMOETHANE	2	U	UG/KG
1,2-DICHLOROETHANE	3	U	UG/KG
1,2-DICHLOROPROPANE	3	U	UG/KG
2-BUTANONE	8	U	UG/KG
2-CHLORO-1,3-BUTADIENE	2	UR	UG/KG
2-HEXANONE	8	U	UG/KG
4-METHYL-2-PENTANONE	8	U	UG/KG
ACETONE	70		UG/KG
ACETONITRILE	8	U	UG/KG
ACROLEIN	15	U	UG/KG
ACRYLONITRILE	15	U	UG/KG
ALLYL CHLORIDE	8	U	UG/KG
BENZENE	3	U	UG/KG
BIS(2-CHLOROISOPROPYL)ETHER	15	U	UG/KG
BROMODICHLOROMETHANE	3	U	UG/KG
BROMOFORM	3	U	UG/KG
BROMOMETHANE	3	U	UG/KG
CARBON DISULFIDE	8	U	UG/KG
CARBON TETRACHLORIDE	3	U	UG/KG
CHLOROBENZENE	3	U	UG/KG
CHLORODIBROMOMETHANE	3	U	UG/KG
CHLOROETHANE	3	U	UG/KG
CHLOROFORM	3	U	UG/KG
CHLOROMETHANE	3	U	UG/KG
CIS-1,3-DICHLOROPROPENE	3	U	UG/KG
DIBROMOMETHANE	3	U	UG/KG
DICHLORODIFLUOROMETHANE	3	U	UG/KG
ETHYL CYANIDE	15	U	UG/KG
ETHYLBENZENE	3	U	UG/KG
IODOMETHANE	4	U	UG/KG
ISOBUTYL ALCOHOL	15	U	UG/KG
METHACRYLONITRILE	8	U	UG/KG
METHYL METHACRYLATE	8	U	UG/KG
METHYLENE CHLORIDE	69		UG/KG
STYRENE	3	U	UG/KG
TETRACHLOROETHENE	0.48	J	UG/KG
TOLUENE	3	U	UG/KG
TRANS-1,2-DICHLOROETHENE	3	U	UG/KG
TRANS-1,3-DICHLOROPROPENE	3	U	UG/KG
TRANS-1,4-DICHLORO-2-BUTENE	8	U	UG/KG
TRICHLOROETHENE	3	U	UG/KG
TRICHLOROFLUOROMETHANE	3	U	UG/KG
VINYL ACETATE	8	U	UG/KG
VINYL CHLORIDE	3	U	UG/KG
XYLENES (TOTAL)	6	U	UG/KG

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A055S

PESTICIDES/PCBs

Sample Number: ABSS-06
Sample Date: 10/2/96
Laboratory ID: 9610055-10
QC Type: NORMAL
% Moisture: 62
Location: ABSS-6

	RESULT	QUAL	UNITS
2,4,5-T	52.5	U	UG/KG
2,4,5-TP (SILVEX)	52.5	U	UG/KG
2,4-D	52.5	U	UG/KG
4,4'-DDD	3.4	UR	UG/KG
4,4'-DDE	1.7	J	UG/KG
4,4'-DDT	3.4	UR	UG/KG
ALDRIN	1.7	UR	UG/KG
ALPHA-BHC	1.7	UR	UG/KG
AROCLOR-1016	10.7	UR	UG/KG
AROCLOR-1221	10.7	UR	UG/KG
AROCLOR-1232	10.7	UR	UG/KG
AROCLOR-1242	10.7	UR	UG/KG
AROCLOR-1248	10.7	UR	UG/KG
AROCLOR-1254	10.7	UR	UG/KG
AROCLOR-1260	10.7	UR	UG/KG
BETA-BHC	1.7	UR	UG/KG
CHLORDANE	21.4	UR	UG/KG
DELTA-BHC	1.7	UR	UG/KG
DIELDRIN	2.2	J	UG/KG
ENDOSULFAN I	1.7	UR	UG/KG
ENDOSULFAN II	3.4	UR	UG/KG
ENDOSULFAN SULFATE	3.4	UR	UG/KG
ENDRIN	3.4	UR	UG/KG
ENDRIN ALDEHYDE	3.4	UR	UG/KG
GAMMA-BHC (LINDANE)	1.7	UR	UG/KG
HEPTACHLOR	1.7	UR	UG/KG
HEPTACHLOR EPOXIDE	1.7	UR	UG/KG
METHOXYCHLOR	17.1	UR	UG/KG
METHYL PARATHION	4.3	UR	UG/KG
PARATHION	4.3	UR	UG/KG
PHORATE	4.3	UR	UG/KG
TOXAPHENE	85.5	UR	UG/KG

Sample Number: ABSS-10
Sample Date: 10/2/96
Laboratory ID: 9610055-11
QC Type: NORMAL
% Moisture: 51
Location: ABSS-10

	RESULT	QUAL	UNITS
2,4,5-T	4	U	UG/KG
2,4,5-TP (SILVEX)	5.2		UG/KG
2,4-D	4	U	UG/KG
4,4'-DDD	2.7	UR	UG/KG
4,4'-DDE	2.4	J	UG/KG
4,4'-DDT	3.2	J	UG/KG
ALDRIN	1.4	UR	UG/KG
ALPHA-BHC	1.4	UR	UG/KG
AROCLOR-1016	8.5	UR	UG/KG
AROCLOR-1221	8.5	UR	UG/KG
AROCLOR-1232	8.5	UR	UG/KG
AROCLOR-1242	8.5	UR	UG/KG
AROCLOR-1248	8.5	UR	UG/KG
AROCLOR-1254	8.5	UR	UG/KG
AROCLOR-1260	8.5	UR	UG/KG
BETA-BHC	1.4	UR	UG/KG
CHLORDANE	17	UR	UG/KG
DELTA-BHC	1.4	UR	UG/KG
DIELDRIN	2.7	UR	UG/KG
ENDOSULFAN I	1.4	UR	UG/KG
ENDOSULFAN II	2.7	UR	UG/KG
ENDOSULFAN SULFATE	2.7	UR	UG/KG
ENDRIN	2.7	UR	UG/KG
ENDRIN ALDEHYDE	2.7	UR	UG/KG
GAMMA-BHC (LINDANE)	1.6	J	UG/KG
HEPTACHLOR	1.4	UR	UG/KG
HEPTACHLOR EPOXIDE	1.4	UR	UG/KG
METHOXYCHLOR	13.6	UR	UG/KG
METHYL PARATHION	3.4	UR	UG/KG
PARATHION	3.4	UR	UG/KG
PHORATE	3.4	UR	UG/KG
TOXAPHENE	68	UR	UG/KG

Sample Number: I3SB-1
Sample Date: 10/3/96
Laboratory ID: 9610055-12
QC Type: NORMAL
% Moisture: 21
Location: I3SB-1

	RESULT	QUAL	UNI
2,4,5-T	25.1	U	UG/
2,4,5-TP (SILVEX)	25.1	U	UG/
2,4-D	25.1	U	UG/I
4,4'-DDD	8.3	UJ	UG/I
4,4'-DDE	20.3	J	UG/I
4,4'-DDT	12.8	J	UG/I
ALDRIN	4.2	UJ	UG/I
ALPHA-BHC	4.2	UJ	UG/I
AROCLOR-1016	26	UJ	UG/I
AROCLOR-1221	26	UJ	UG/I
AROCLOR-1232	26	UJ	UG/I
AROCLOR-1248	26	UJ	UG/I
AROCLOR-1254	26	UJ	UG/K
AROCLOR-1260	26	UJ	UG/K
BETA-BHC	4.2	UJ	UG/K
CHLORDANE	52	UJ	UG/K
DELTA-BHC	4.2	UJ	UG/K
DIELDRIN	8.3	UJ	UG/K
ENDOSULFAN I	4.2	UJ	UG/K
ENDOSULFAN II	8.3	UJ	UG/K
ENDOSULFAN SULFATE	8.3	UJ	UG/K
ENDRIN	8.3	UJ	UG/K
ENDRIN ALDEHYDE	8.3	UJ	UG/K
GAMMA-BHC (LINDANE)	4.2	UJ	UG/K
HEPTACHLOR	4.2	UJ	UG/K
HEPTACHLOR EPOXIDE	4.2	UJ	UG/K
METHOXYCHLOR	41.6	UJ	UG/K
METHYL PARATHION	10.4	UJ	UG/K
PARATHION	10.4	UJ	UG/K
PHORATE	10.4	UJ	UG/K
TOXAPHENE	208	UJ	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A055S

PESTICIDES/PCBs

Sample Number: I3SB-2
Sample Date: 10/3/96
Laboratory ID: 9610055-13
QC Type: NORMAL
% Moisture: 25
Location: I3SB-2

	RESULT	QUAL	UNITS
2,4,5-T	2.6	UJ	UG/KG
2,4,5-TP (SILVEX)	2.6	UJ	UG/KG
2,4-D	2.6	UJ	UG/KG
4,4'-DDD	34.9	UJ	UG/KG
4,4'-DDE	83	J	UG/KG
4,4'-DDT	52.1	J	UG/KG
ALDRIN	17.4	UJ	UG/KG
ALPHA-BHC	17.4	UJ	UG/KG
AROCLOR-1016	109	UJ	UG/KG
AROCLOR-1221	109	UJ	UG/KG
AROCLOR-1232	109	UJ	UG/KG
AROCLOR-1242	109	UJ	UG/KG
AROCLOR-1248	109	UJ	UG/KG
AROCLOR-1254	109	UJ	UG/KG
AROCLOR-1260	109	UJ	UG/KG
BETA-BHC	17.4	UJ	UG/KG
CHLORDANE	218	UJ	UG/KG
DELTA-BHC	17.4	UJ	UG/KG
DIELDRIN	34.9	UJ	UG/KG
ENDOSULFAN I	17.4	UJ	UG/KG
ENDOSULFAN II	34.9	UJ	UG/KG
ENDOSULFAN SULFATE	34.9	UJ	UG/KG
ENDRIN	34.9	UJ	UG/KG
ENDRIN ALDEHYDE	34.9	UJ	UG/KG
GAMMA-BHC (LINDANE)	17.4	UJ	UG/KG
HEPTACHLOR	17.4	UJ	UG/KG
HEPTACHLOR EPOXIDE	17.4	UJ	UG/KG
METHOXYCHLOR	174	UJ	UG/KG
METHYL PARATHION	43.6	UJ	UG/KG
PARATHION	43.6	UJ	UG/KG
PHORATE	43.6	UJ	UG/KG
TOXAPHENE	872	UJ	UG/KG

Sample Number: I7DPSS
Sample Date: 9/30/96
Laboratory ID: 9610055-02
QC Type: NORMAL
% Moisture: 42
Location: I7DPSS

	RESULT	QUAL	UNITS
2,4,5-T	3.4	U	UG/KG
2,4,5-TP (SILVEX)	3.4	U	UG/KG
2,4-D	3.4	U	UG/KG
4,4'-DDD	2	J	UG/KG
4,4'-DDE	2	J	UG/KG
4,4'-DDT	14.5		UG/KG
ALDRIN	1.1	U	UG/KG
ALPHA-BHC	1.1	U	UG/KG
AROCLOR-1016	7	U	UG/KG
AROCLOR-1221	7	U	UG/KG
AROCLOR-1232	7	U	UG/KG
AROCLOR-1242	7	U	UG/KG
AROCLOR-1248	7	U	UG/KG
AROCLOR-1254	7	U	UG/KG
AROCLOR-1260	7	U	UG/KG
BETA-BHC	1.1	U	UG/KG
CHLORDANE	14	U	UG/KG
DELTA-BHC	2.3		UG/KG
DIELDRIN	2.2	U	UG/KG
ENDOSULFAN I	1.1	U	UG/KG
ENDOSULFAN II	2.2	U	UG/KG
ENDOSULFAN SULFATE	2.2	U	UG/KG
ENDRIN	2.2	U	UG/KG
ENDRIN ALDEHYDE	2.2	U	UG/KG
GAMMA-BHC (LINDANE)	1.2		UG/KG
HEPTACHLOR	1.1	U	UG/KG
HEPTACHLOR EPOXIDE	1.1	U	UG/KG
METHOXYCHLOR	11.2	U	UG/KG
METHYL PARATHION	2.8	U	UG/KG
PARATHION	2.8	U	UG/KG
PHORATE	2.8	U	UG/KG
TOXAPHENE	56.1	U	UG/KG

Sample Number: I7SS-01
Sample Date: 9/30/96
Laboratory ID: 9610055-03
QC Type: NORMAL
% Moisture: 44
Location: I7SS-1

	RESULT	QUAL	UNI
2,4,5-T	3.6	U	UG/
2,4,5-TP (SILVEX)	3.6	U	UG/
2,4-D	3.6	U	UG/
4,4'-DDD	2.4		UG/
4,4'-DDE	13.3	J	UG/
4,4'-DDT	18.2		UG/
ALDRIN	1.2	U	UG/
ALPHA-BHC	2.2		UG/
AROCLOR-1016	7.2	U	UG/
AROCLOR-1221	7.2	U	UG/
AROCLOR-1232	7.2	U	UG/
AROCLOR-1242	7.2	U	UG/
AROCLOR-1248	7.2	U	UG/
AROCLOR-1254	7.2	U	UG/
AROCLOR-1260	7.2	U	UG/
BETA-BHC	1.2	U	UG/
CHLORDANE	14.4	U	UG/
DELTA-BHC	1.2	U	UG/
DIELDRIN	20.8		UG/
ENDOSULFAN I	10.7	J	UG/
ENDOSULFAN II	2.3	U	UG/
ENDOSULFAN SULFATE	10.6	J	UG/
ENDRIN	2.3	U	UG/
ENDRIN ALDEHYDE	0.64	J	UG/
GAMMA-BHC (LINDANE)	1.5		UG/
HEPTACHLOR	11		UG/
HEPTACHLOR EPOXIDE	1.5	J	UG/
METHOXYCHLOR	11.6	U	UG/
METHYL PARATHION	2.9	U	UG/
PARATHION	2.9	U	UG/
PHORATE	2.9	U	UG/
TOXAPHENE	57.8	U	UG/

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GENERAL ENGINEERING LABS

SDG: 6A055S

PESTICIDES/PCBs

Sample Number: I7SS-04
Sample Date: 9/30/96
Laboratory ID: 9610055-01
QC Type: NORMAL
% Moisture: 46
Location: I7SS-4

	RESULT	QUAL	UNITS
2,4,5-T	3.7	U	UG/KG
2,4,5-TP (SILVEX)	3.7	U	UG/KG
2,4-D	3.7	U	UG/KG
4,4'-DDD	2.4	U	UG/KG
4,4'-DDE	2.4	U	UG/KG
4,4'-DDT	2.4	U	UG/KG
ALDRIN	1.2	U	UG/KG
ALPHA-BHC	1.2	U	UG/KG
AROCLOR-1016	7.5	U	UG/KG
AROCLOR-1221	7.5	U	UG/KG
AROCLOR-1232	7.5	U	UG/KG
AROCLOR-1242	7.5	U	UG/KG
AROCLOR-1248	7.5	U	UG/KG
AROCLOR-1254	7.5	U	UG/KG
AROCLOR-1260	7.5	U	UG/KG
BETA-BHC	1.2	U	UG/KG
CHLORDANE	15.1	U	UG/KG
DELTA-BHC	1.2	U	UG/KG
DIELDRIN	2.4	U	UG/KG
ENDOSULFAN I	1.2	U	UG/KG
ENDOSULFAN II	2.4	U	UG/KG
ENDOSULFAN SULFATE	2.4	U	UG/KG
ENDRIN	2.4	U	UG/KG
ENDRIN ALDEHYDE	2.4	U	UG/KG
GAMMA-BHC (LINDANE)	1.2	J	UG/KG
HEPTACHLOR	1.2	U	UG/KG
HEPTACHLOR EPOXIDE	1.2	U	UG/KG
METHOXYCHLOR	12.1	U	UG/KG
METHYL PARATHION	3	U	UG/KG
PARATHION	3	U	UG/KG
PHORATE	3	U	UG/KG
TOXAPHENE	60.4	U	UG/KG

Sample Number: S4SB-1
Sample Date: 10/5/96
Laboratory ID: 9610055-15
QC Type: NORMAL
% Moisture: 33
Location: S4SB-1

	RESULT	QUAL	UNITS
2,4,5-T	2.9	U	UG/KG
2,4,5-TP (SILVEX)	2.9	U	UG/KG
2,4-D	2.9	U	UG/KG
4,4'-DDD	39.4	UJ	UG/KG
4,4'-DDE	29.5	J	UG/KG
4,4'-DDT	36.4	J	UG/KG
ALDRIN	19.7	UJ	UG/KG
ALPHA-BHC	19.7	UJ	UG/KG
AROCLOR-1016	123	UJ	UG/KG
AROCLOR-1221	123	UJ	UG/KG
AROCLOR-1232	123	UJ	UG/KG
AROCLOR-1242	123	UJ	UG/KG
AROCLOR-1248	123	UJ	UG/KG
AROCLOR-1254	123	UJ	UG/KG
AROCLOR-1260	123	UJ	UG/KG
BETA-BHC	19.7	UJ	UG/KG
CHLORDANE	246	UJ	UG/KG
DELTA-BHC	19.7	UJ	UG/KG
DIELDRIN	39.4	UJ	UG/KG
ENDOSULFAN I	19.7	UJ	UG/KG
ENDOSULFAN II	39.4	UJ	UG/KG
ENDOSULFAN SULFATE	39.4	UJ	UG/KG
ENDRIN	39.4	UJ	UG/KG
ENDRIN ALDEHYDE	39.4	UJ	UG/KG
GAMMA-BHC (LINDANE)	19.7	UJ	UG/KG
HEPTACHLOR	19.7	UJ	UG/KG
HEPTACHLOR EPOXIDE	19.7	UJ	UG/KG
METHOXYCHLOR	197	UJ	UG/KG
METHYL PARATHION	49.3	UJ	UG/KG
PARATHION	49.3	UJ	UG/KG
PHORATE	49.3	UJ	UG/KG
TOXAPHENE	986	UJ	UG/KG

Sample Number: S7DPSS
Sample Date: 10/1/96
Laboratory ID: 9610055-09
QC Type: NORMAL
% Moisture: 71
Location: S7DPSS

	RESULT	QUAL	UNI
2,4,5-T	6.8	U	UG/
2,4,5-TP (SILVEX)	6.8	U	UG/
2,4-D	6.8	U	UG/
4,4'-DDD	7.5	J	UG/
4,4'-DDE	4.3	J	UG/
4,4'-DDT	4.8	J	UG/
ALDRIN	2.3	UR	UG/
ALPHA-BHC	2.3	UR	UG/
AROCLOR-1016	14.3	UR	UG/
AROCLOR-1221	14.3	UR	UG/
AROCLOR-1232	14.3	UR	UG/
AROCLOR-1242	14.3	UR	UG/
AROCLOR-1248	14.3	UR	UG/
AROCLOR-1254	14.3	UR	UG/
AROCLOR-1260	14.3	UR	UG/
BETA-BHC	2.3	UR	UG/
CHLORDANE	28.6	UR	UG/
DELTA-BHC	4.5	J	UG/
DIELDRIN	4.6	UR	UG/
ENDOSULFAN I	2.3	UR	UG/
ENDOSULFAN II	4.6	UR	UG/
ENDOSULFAN SULFATE	4.6	UR	UG/
ENDRIN	4.6	UR	UG/
ENDRIN ALDEHYDE	4.6	UR	UG/
GAMMA-BHC (LINDANE)	2.3	UR	UG/
HEPTACHLOR	2.3	UR	UG/
HEPTACHLOR EPOXIDE	2.3	UR	UG/
METHOXYCHLOR	22.9	UR	UG/
METHYL PARATHION	5.7	UR	UG/
PARATHION	5.7	UR	UG/
PHORATE	5.7	UR	UG/
TOXAPHENE	114	UR	UG/

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A055S

PESTICIDES/PCBs

Sample Number: S7SS-04
Sample Date: 10/1/96
Laboratory ID: 9610055-04
QC Type: NORMAL
% Moisture: 88
Location: S7SS-4

	RESULT	QUAL	UNITS
2,4,5-T	16.6	U	UG/KG
2,4,5-TP (SILVEX)	16.6	U	UG/KG
2,4-D	16.6	U	UG/KG
4,4'-DDD	10.9	U	UG/KG
4,4'-DDE	10.9	U	UG/KG
4,4'-DDT	10.9	U	UG/KG
ALDRIN	5.4	U	UG/KG
ALPHA-BHC	5.6		UG/KG
AROCLOR-1016	34	U	UG/KG
AROCLOR-1221	34	U	UG/KG
AROCLOR-1232	34	U	UG/KG
AROCLOR-1242	34	U	UG/KG
AROCLOR-1248	34	U	UG/KG
AROCLOR-1254	34	U	UG/KG
AROCLOR-1260	34	U	UG/KG
BETA-BHC	5.4	U	UG/KG
CHLORDANE	67.9	U	UG/KG
DELTA-BHC	11.5		UG/KG
DIELDRIN	10.9	U	UG/KG
ENDOSULFAN I	5.4	U	UG/KG
ENDOSULFAN II	10.9	U	UG/KG
ENDOSULFAN SULFATE	10.9	U	UG/KG
ENDRIN	10.9	U	UG/KG
ENDRIN ALDEHYDE	10.9	U	UG/KG
GAMMA-BHC (LINDANE)	5.4	U	UG/KG
HEPTACHLOR	5.4	U	UG/KG
HEPTACHLOR EPOXIDE	5.4	U	UG/KG
METHOXYCHLOR	54.3	U	UG/KG
METHYL PARATHION	13.6	U	UG/KG
PARATHION	13.6	U	UG/KG
PHORATE	13.6	U	UG/KG
TOXAPHENE	272	U	UG/KG

Sample Number: S7SS-05
Sample Date: 10/1/96
Laboratory ID: 9610055-08
QC Type: NORMAL
% Moisture: 68
Location: S7SS-5

	RESULT	QUAL	UNITS
2,4,5-T	6.2	U	UG/KG
2,4,5-TP (SILVEX)	6.2	U	UG/KG
2,4-D	6.2	U	UG/KG
4,4'-DDD	12.6	J	UG/KG
4,4'-DDE	21.4	J	UG/KG
4,4'-DDT	6.6	J	UG/KG
ALDRIN	2	UR	UG/KG
ALPHA-BHC	2.5	J	UG/KG
AROCLOR-1016	12.8	UR	UG/KG
AROCLOR-1221	12.8	UR	UG/KG
AROCLOR-1232	12.8	UR	UG/KG
AROCLOR-1242	12.8	UR	UG/KG
AROCLOR-1248	12.8	UR	UG/KG
AROCLOR-1254	12.8	UR	UG/KG
AROCLOR-1260	56.4	J	UG/KG
BETA-BHC	2	UR	UG/KG
CHLORDANE	25.6	UR	UG/KG
DELTA-BHC	5.5	J	UG/KG
DIELDRIN	6	J	UG/KG
ENDOSULFAN I	2	UR	UG/KG
ENDOSULFAN II	4.1	UR	UG/KG
ENDOSULFAN SULFATE	4.1	UR	UG/KG
ENDRIN	4.1	UR	UG/KG
ENDRIN ALDEHYDE	4.1	UR	UG/KG
GAMMA-BHC (LINDANE)	2	UR	UG/KG
HEPTACHLOR	2	UR	UG/KG
HEPTACHLOR EPOXIDE	2	UR	UG/KG
METHOXYCHLOR	20.4	UR	UG/KG
METHYL PARATHION	5.1	UR	UG/KG
PARATHION	5.1	UR	UG/KG
PHORATE	5.1	UR	UG/KG
TOXAPHENE	102	UR	UG/KG

Sample Number: S7SS-06
Sample Date: 10/1/96
Laboratory ID: 9610055-05
QC Type: NORMAL
% Moisture: 81
Location: S7SS-6

	RESULT	QUAL	UNIT
2,4,5-T	10.4	U	UG/K
2,4,5-TP (SILVEX)	10.4	U	UG/K
2,4-D	10.4	U	UG/K
4,4'-DDD	35.1	J	UG/K
4,4'-DDE	142	J	UG/K
4,4'-DDT	674	J	UG/K
ALDRIN	68	UR	UG/K
ALPHA-BHC	68	UR	UG/K
AROCLOR-1016	425	UR	UG/K
AROCLOR-1221	425	UR	UG/K
AROCLOR-1232	425	UR	UG/K
AROCLOR-1242	425	UR	UG/K
AROCLOR-1248	425	UR	UG/K
AROCLOR-1254	425	UR	UG/K
AROCLOR-1260	425	UR	UG/K
BETA-BHC	68	UR	UG/K
CHLORDANE	849	UR	UG/K
DELTA-BHC	68	UR	UG/K
DIELDRIN	136	UR	UG/K
ENDOSULFAN I	68	UR	UG/K
ENDOSULFAN II	136	UR	UG/K
ENDOSULFAN SULFATE	136	UR	UG/K
ENDRIN	136	UR	UG/K
ENDRIN ALDEHYDE	136	UR	UG/K
GAMMA-BHC (LINDANE)	68	UR	UG/K
HEPTACHLOR	68	UR	UG/K
HEPTACHLOR EPOXIDE	68	UR	UG/K
METHOXYCHLOR	680	UR	UG/K
METHYL PARATHION	170	UR	UG/K
PARATHION	170	UR	UG/K
PHORATE	170	UR	UG/K
TOXAPHENE	3400	UR	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A055S

PESTICIDES/PCBs

Sample Number: S7SS-07
Sample Date: 10/1/96
Laboratory ID: 9610055-06
QC Type: NORMAL
% Moisture: 87
Location: S7SS-7

	RESULT	QUAL	UNITS
2,4,5-T	15.3	U	UG/KG
2,4,5-TP (SILVEX)	15.3	U	UG/KG
2,4-D	15.3	U	UG/KG
4,4'-DDD	10.1	UR	UG/KG
4,4'-DDE	14.8	J	UG/KG
4,4'-DDT	10.1	UR	UG/KG
ALDRIN	5.1	UR	UG/KG
ALPHA-BHC	5.1	UR	UG/KG
AROCLOR-1016	31.6	UR	UG/KG
AROCLOR-1221	31.6	UR	UG/KG
AROCLOR-1232	31.6	UR	UG/KG
AROCLOR-1242	31.6	UR	UG/KG
AROCLOR-1248	31.6	UR	UG/KG
AROCLOR-1254	31.6	UR	UG/KG
AROCLOR-1260	31.6	UR	UG/KG
BETA-BHC	5.1	UR	UG/KG
CHLORDANE	63.2	UR	UG/KG
DELTA-BHC	5.1	UR	UG/KG
DIELDRIN	10.1	UR	UG/KG
ENDOSULFAN I	5.1	UR	UG/KG
ENDOSULFAN II	10.1	UR	UG/KG
ENDOSULFAN SULFATE	10.1	UR	UG/KG
ENDRIN	6.6	J	UG/KG
ENDRIN ALDEHYDE	10.1	UR	UG/KG
GAMMA-BHC (LINDANE)	5.1	UR	UG/KG
HEPTACHLOR	5.1	UR	UG/KG
HEPTACHLOR EPOXIDE	5.1	UR	UG/KG
METHOXYCHLOR	50.6	UR	UG/KG
METHYL PARATHION	12.6	UR	UG/KG
PARATHION	12.6	UR	UG/KG
PHORATE	12.6	UR	UG/KG
TOXAPHENE	253	UR	UG/KG

Sample Number: S7SS-08
Sample Date: 10/1/96
Laboratory ID: 9610055-07
QC Type: NORMAL
% Moisture: 88
Location: S7SS-8

	RESULT	QUAL	UNITS
2,4,5-T	16.6	U	UG/KG
2,4,5-TP (SILVEX)	16.6	U	UG/KG
2,4-D	16.6	U	UG/KG
4,4'-DDD	11	UR	UG/KG
4,4'-DDE	26.9	J	UG/KG
4,4'-DDT	11	UR	UG/KG
ALDRIN	5.5	UR	UG/KG
ALPHA-BHC	5.5	UR	UG/KG
AROCLOR-1016	34.4	UR	UG/KG
AROCLOR-1221	34.4	UR	UG/KG
AROCLOR-1232	34.4	UR	UG/KG
AROCLOR-1242	34.4	UR	UG/KG
AROCLOR-1248	34.4	UR	UG/KG
AROCLOR-1254	34.4	UR	UG/KG
AROCLOR-1260	34.4	UR	UG/KG
BETA-BHC	5.5	UR	UG/KG
CHLORDANE	68.7	UR	UG/KG
DELTA-BHC	13	J	UG/KG
DIELDRIN	11	UR	UG/KG
ENDOSULFAN I	5.5	UR	UG/KG
ENDOSULFAN II	11	UR	UG/KG
ENDOSULFAN SULFATE	11	UR	UG/KG
ENDRIN	8.1	J	UG/KG
ENDRIN ALDEHYDE	11	UR	UG/KG
GAMMA-BHC (LINDANE)	11.6	J	UG/KG
HEPTACHLOR	5.5	UR	UG/KG
HEPTACHLOR EPOXIDE	5.5	UR	UG/KG
METHOXYCHLOR	55	UR	UG/KG
METHYL PARATHION	13.7	UR	UG/KG
PARATHION	13.7	UR	UG/KG
PHORATE	13.7	UR	UG/KG
TOXAPHENE	275	UR	UG/KG

INORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 8, 1997**
FROM:	**JULEA F. BRADLEY**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA REVIEW – TAL METALS AND CYANIDE**
CTO 007 – KEY WEST, FLORIDA
SDG – 6A140W

SAMPLES: 5/Aqueous/

ABMW-1
ABDPGW
ABMW-3
B6SW
RB09-100796

Overview

The sample set for CTO 007, Key West, SDG 6A140W, consists of five (5) aqueous environmental samples. One (1) field duplicate pair (ABMW-1/ABDPGW) is included within this SDG.

All samples were analyzed for Target Analyte List (TAL) metals and cyanide. The samples were collected by Brown and Root Environmental on October 3, 5, and 7, 1996, and analyzed by General Engineering Laboratory under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- Calibration Verifications
- * Laboratory Blank Analyses
- Field Duplicate Results
- Matrix Spike Results

* Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/preparation/field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level (aqueous)
aluminum	25.1 ug/L	125.5 ug/L
antimony	3.7 ug/L	18.5 ug/L
barium	0.3 ug/L	1.5 ug/L
beryllium	0.2 ug/L	1.0 ug/L
cadmium	0.2 ug/L	1.0 ug/L
calcium[b]	411 ug/L	2,055 ug/L
chromium	2.5 ug/L	12.5 ug/L
iron[b]	435 ug/L	2,265 ug/L
magnesium[b]	137 ug/L	685 ug/L
manganese[b]	14.8 ug/L	74 ug/L
sodium[b]	1,460 ug/L	7,300 ug/L
zinc[b]	55.9 ug/L	279.5 ug/L

Samples affected: ABDPGW, ABMWI, and ABMW3.

[a] Maximum concentration found in an aqueous preparation blank.
[b] Maximum concentration found in a rinsate blank.

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for cadmium, iron, manganese, and zinc have been qualified as nondetected "U." No action was taken for the remaining analytes since either the results were greater than the action level or were nondetects. It should be noted that field quality control samples are not qualified for field quality control blank contamination when the maximum concentration is in the field blank.

Notes

A comparison of field duplicate pairs I1MW-7/I1DPGW-2 and S4SW-3/S4DPSW can be found in Appendix C. However, no validation actions are required for field duplicate imprecision.

It was noted that all samples were analyzed at a 2 fold dilution. In addition in samples ABMW-1, ABDPGW, ABMW-3, and B6SW were analyzed at a 200 fold dilution for calcium, potassium, magnesium, and sodium.

The Matrix Spike (MS) Percent Recovery (%R) for antimony (72.5%) was below the control limits. However, this noncompliance was not great enough to warrant action.

It was noted that cyanide exceeded the quality control limit for Continuing Calibration Verification (CCV) Percent Recovery (%R). However, this noncompliance was not great enough to warrant action.

It was noted that thallium was below the quality control limit for ICP CRDL %R. However, no action was taken for CRDL %R.

It was noted that mercury was below the quality control limit for AA CRDL %R. However, no action was taken for CRDL %R.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method/ preparation blanks.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed in accordance with the "National Functional Guidelines for Inorganic Review," February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality. "I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Julea F Bradley
Brown & Root Environmental
Julea F. Bradley
Environmental Scientist/Data Validator

Teresa M Hudson
Brown & Root Environmental
for Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation.

KEY WEST
SDG – 6A140W

TABLE 1 - RECOMMENDATION SUMMARY

Aluminum		Magnesium	
Antimony		Manganese	A[1]
Arsenic		Mercury	
Barium		Nickel	
Beryllium		Potassium	
Cadmium	A[1]	Selenium	
Calcium		Silver	
Chromium		Sodium	
Cobalt		Thallium	
Copper		Vanadium	
Iron	A[1]	Zinc	A[1]
Lead		Cyanide	

If the field is left blank, the qualifier is A - Accept all data.

A[1] - Accept data but qualify as nondetected, "U", as a result of laboratory blank contamination.

APPENDIX A
Qualified Analytical Results

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A140W

INORGANICS

Sample Number: ABDPGW
Sample Date: 10/3/96
Laboratory ID: 9610140-02
QC Type: NORMAL
% Moisture: 0
Location: ABDPGW

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	4	U	UG/L
BARIUM	32.2		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	559000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	9.8		UG/L
CYANIDE	1.4	U	UG/L
IRON	200	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	1330000		UG/L
MANGANESE	26.1	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	8.2		UG/L
POTASSIUM	388000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	11200000		UG/L
THALLIUM	4.6		UG/L
VANADIUM	2	U	UG/L
ZINC	69.2	U	UG/L

Sample Number: ABMW1
Sample Date: 10/3/96
Laboratory ID: 9610140-01
QC Type: NORMAL
% Moisture: 0
Location: ABMW-1

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	4	U	UG/L
BARIUM	32.9		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.53	U	UG/L
CALCIUM	562000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	8		UG/L
CYANIDE	1.4	U	UG/L
IRON	205	U	UG/L
LEAD	4.3		UG/L
MAGNESIUM	1330000		UG/L
MANGANESE	27.8	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	8.9		UG/L
POTASSIUM	394000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	11300000		UG/L
THALLIUM	5.3		UG/L
VANADIUM	2	U	UG/L
ZINC	41.6	U	UG/L

Sample Number: ABMW3
Sample Date: 10/3/96
Laboratory ID: 9610140-03
QC Type: NORMAL
% Moisture: 0
Location: ABMW-3

	RESULT	QUAL	UNIT
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	4	U	UG/L
BARIUM	32.9		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	603000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	66.6	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	1720000		UG/L
MANGANESE	6.7	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	466000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	14200000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A140W

INORGANICS

Sample Number: B6SW
Sample Date: 10/5/96
Laboratory ID: 9610140-05
QC Type: NORMAL
% Moisture: 0
Location: B6SW

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	4	U	UG/L
BARIUM	8.1		UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	444000		UG/L
CHROMIUM	2	U	UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	4	U	UG/L
LEAD	3	U	UG/L
MAGNESIUM	1420000		UG/L
MANGANESE	2	U	UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	382000		UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	11600000		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	2	U	UG/L

Sample Number: RB09100796
Sample Date: 10/7/96
Laboratory ID: 9610140-06
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
ALUMINUM	28	U	UG/L
ANTIMONY	4	U	UG/L
ARSENIC	4	U	UG/L
BARIUM	0.2	U	UG/L
BERYLLIUM	0.2	U	UG/L
CADMIUM	0.4	U	UG/L
CALCIUM	411		UG/L
CHROMIUM	2.5		UG/L
COBALT	2	U	UG/L
COPPER	4	U	UG/L
CYANIDE	1.4	U	UG/L
IRON	453		UG/L
LEAD	3	U	UG/L
MAGNESIUM	137		UG/L
MANGANESE	14.8		UG/L
MERCURY	0.1	U	UG/L
NICKEL	4	U	UG/L
POTASSIUM	20	U	UG/L
SELENIUM	4	U	UG/L
SILVER	2	U	UG/L
SODIUM	1460		UG/L
THALLIUM	4	U	UG/L
VANADIUM	2	U	UG/L
ZINC	55.9		UG/L

ORGANIC DATA VALIDATION

TO:	**Chuck Bryan**	**DATE:**	**January 16, 1997**
FROM	**R. Marty Ray**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA REVIEW VOA/SVOA/PEST/PCB/HERB ORGANICS**
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG 6A140W

SAMPLES: 7/Waters:

ABMW-1	ABDPGW	ABMW-3	TB09-100596
TB10-100796	RB09-100796	B6SW	

The sample set for the CTO 007 NAS Key West site, SDG 6A140W, consists of four (4) aqueous environmental samples, two (2) trip blanks and one (1) rinsate blank. The samples were analyzed for selected volatile compounds, target semivolatile compounds, plus Target Compound List (TCL) pesticide/PCB and herbicide organic compounds. One field duplicate pair was included in this SDG (ABMW-1/ABDPGW).

The samples were collected by Brown and Root Environmental on September 30th, October 3rd and 7th, 1996 and analyzed by General Engineering Laboratories, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Methods 8240, 602, 8270, 8080, and 8150 analytical and reporting protocols. The data were evaluated according to the following parameters:

- Holding times
- * Initial and continuing calibrations
- * Laboratory and field blank analyses
- Surrogate spike recoveries
- * Field Duplicate Precision
- * Compound Quantitation

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Volatile Organic Analysis by GC/MS

No environmental samples were analyzed for the Appendix IX volatile compounds, two trip blanks and one rinsate blank were analyzed for these compounds.

Continuing calibration Relative Response Factors for acrolein, propionitrile, and isobutyl alcohol were reported less than the 0.050 quality control limit. Both positive and non-detected results are affected by these noncompliances. As a result of this major calibration noncompliance, nondetected results for the aforementioned

compounds are considered unreliable and were rejected, (UR), in the affected samples. The affected samples are TB09-100596, TB10-100796, and RB09-100796.

The following volatile compounds were detected in the laboratory method and field quality control blanks at the maximum concentrations indicated below:

Compound	Sample Number	Maximum Concentration	Action Level
Toluene	VBLK01	0.38 µg/L	1.9 µg/L
Acetone	VBLK01	2.5 µg/L	25 µg/L

Results for acetone reported above the detection limits but below the action level. Were qualified as nondetected (U). Positive results found below the detection limit have been deleted and replaced by the detection limit value, then qualified as nondetected (U). Positive results reported below the detection limit and above the action level are estimated (J).

No other problems were noted.

Volatile Organic Analysis by GC

The following volatile compounds were detected in the laboratory method and field quality control blanks at the maximum concentrations indicated below:

Compound	Maximum Concentration	Action Level
Toluene	1.6 µg/L	8.0 µg/L
1,2-Dichlorobenzene	1.35 µg/L	6.75 µg/L

The affected samples are ABMW-1, ABDPGW, ABMW-3, and B6SW.

All affected samples were qualified for toluene as nondetected (U) since the detected concentrations were below the action level. 1,2-dichlorobenzene was not detected in the environmental samples, therefore no action was taken.

No other problems were noted.

Semivolatiles

No problems were noted.

Pesticide/PCBs

Sample ABMW-3 was originally analyzed undiluted, however due to high concentrations of heptachlor epoxide, endosulfan I, dieldrin, 4,4'-DDE, 4,4'-DDD, and 4,4'-DDT this sample was reanalyzed at a 10.0 dilution factor.

The original data, with the exception of the positive result for the above analytes, was used in validation. The diluted results for the above analytes were transposed over to the undiluted results and used in validation. No further action was taken.

The laboratory qualifier (P) was removed from all target compound data with %D above 25% and less than 100%. The affected samples are ABDPGW for compounds 4,4'-DDE and endrin aldehyde, and sample ABMW3 for endosulfan II and endrin aldehyde. For those compounds with a %D above 100%, the laboratory (P) was removed and the data was qualified as estimated (J). The affected samples are ABMW-3 for 4,4'-DDE and dieldrin, and sample RB09-100796 for heptachlor..

No other problems were noted.

Herbicides

Poor field duplicate precision was noted in the field duplicate pair ABMW-1/ABDPGW for 2,4,5-T, 2,4,5-TP, and 2,4-D. No action was taken based on poor field duplicate precision.

No other problems were noted.

Additional Comments

Positive results reported at concentrations below the CRQL were qualified as estimated (J).

Executive Summary

Laboratory Performance: Continuing calibration RRFs for acrolein, propionitrile, and isobutyl alcohol were reported less than the 0.050 quality control limit. Toluene, acetone, and 1,2-dichlorobenzene were reported in volatile laboratory method blanks. Sample ABMW-3 reported heptachlor oxide, endosulfan I, dieldrin, 4,4'-DDE, 4,4'-DDD, and 4,4'-DDT to have concentrations to high for instrument quantification, and this sample had to be diluted and reanalyzed. Numerous pesticide/PCB compounds reported %Ds between positive results in columns 1 and 2 above 100%.

Other Factors Affecting Data Quality: None

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

R. Marty Ray

Brown and Root Environmental

R. Marty Ray
Environmental Scientist/Data Validator

for

Brown and Root Environmental

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

NAS KEY WEST

SDG 6A140W

TABLE 1 - RECOMMENDATION SUMMARY

Sample No.	VOA	BNA	PEST/PCB	HERB
ABMW-1	A^1		J^8	
ABDPGW	A^1		J^2 J^8 J^9 J^{10}	
ABMW-3	A^1		J^1 J^3 J^4 J^5 J^6 J^7 J^8	
B6SW	A^1			
TB09-100596	A^1 A^2 R^1			
TB10-100796	A^1 A^2 R^1			
RB09-100796	A^2 R^1		J^3	

If the field is left blank, the qualifier is A - Accept all data.

A^1 - Accept data, but change positive results for toluene to a revised detection limit and qualify as non-detected, (U), as a result of laboratory method blank contamination.

A^2 - Accept data, but change positive results for acetone to a revised detection limit and qualify as non-detected, (U), as a result of laboratory method blank contamination.

J^1 - Accept data, but qualify a positive result for dieldrin as estimated, (J), as a result of a %D greater than 100%.

J^2 Accept data, but qualify a positive result for endrin aldehyde as estimated, (J), as a result of a %D greater than 100%.

J^3 Accept data, but qualify a positive result for heptachlor as estimated, (J), as a result of a %D greater than 100%.

J^4 Remove laboratory qualifier (P) which indicates a %D above 25% as result of the %D being less than 100% for 4,4'-DDE.

J^5 Remove laboratory qualifier (P) which indicates a %D above 25% as result of the %D being less than 100% for endrin aldehyde.

J^6 Remove laboratory qualifier (P) which indicates a %D above 25% as result of the %D being less than 100% for endosulfan II.

J^7 Data was transposed from a diluted sample for heptachlor epoxide, endosulfan I, dieldrin, 4,4'-DDE, 4,4'-DDD, and 4,4'-DDT. Accept data.

J^8 Accept data but qualify positive results below the CRQL as estimated (J).

J^9 Removed laboratory qualifier (P) which indicated a %D between positive hits on columns 1 and 2 above 25% and below 100% for 4,4'-DDT.

J^{10} Removed laboratory qualifier (P) which indicated a %D between positive hits on columns 1 and 2 above 100% for heptachlor. Estimated results (J).

R^1 - Reject, (UR), non-detected results for acrolein, propionitrile and isobutyl alcohol, as a result of continuing calibration RRFs less than 0.050.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A140W

SEMIVOLATILES

Sample Number: ABDPGW
Sample Date: 10/3/96
Laboratory ID: 9610140-02
QC Type: NORMAL
% Moisture: 0
Location: ABDPGW

	RESULT	QUAL	UNITS
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ANTHRACENE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
CHRYSENE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PYRENE	10	U	UG/L

Sample Number: ABMW-1RA0
Sample Date: 10/3/96
Laboratory ID: 9610140-01
QC Type: NORMAL
% Moisture: 0
Location: ABMW-1

	RESULT	QUAL	UNITS
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ANTHRACENE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
CHRYSENE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PYRENE	10	U	UG/L

Sample Number: ABMW-3
Sample Date: 10/3/96
Laboratory ID: 9610140-03
QC Type: NORMAL
% Moisture: 0
Location: ABMW-3

	RESULT	QUAL	UNIT
ACENAPHTHENE	10	U	UG/l
ACENAPHTHYLENE	10	U	UG/l
ANTHRACENE	10	U	UG/l
BENZO(A)ANTHRACENE	10	U	UG/l
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/l
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
CHRYSENE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PYRENE	10	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A140W

SEMIVOLATILES

Sample Number: B6SW
Sample Date: 10/5/96
Laboratory ID: 9610140-05
QC Type: NORMAL
% Moisture: 0
Location: B6SW

	RESULT	QUAL	UNITS
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ANTHRACENE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
CHRYSENE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PYRENE	10	U	UG/L

Sample Number: RB09100796
Sample Date: 10/7/96
Laboratory ID: 9610140-06
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
ACENAPHTHENE	10	U	UG/L
ACENAPHTHYLENE	10	U	UG/L
ANTHRACENE	10	U	UG/L
BENZO(A)ANTHRACENE	10	U	UG/L
BENZO(A)PYRENE	10	U	UG/L
BENZO(B)FLUORANTHENE	10	U	UG/L
BENZO(G,H,I)PERYLENE	10	U	UG/L
BENZO(K)FLUORANTHENE	10	U	UG/L
CHRYSENE	10	U	UG/L
DIBENZO(A,H)ANTHRACENE	10	U	UG/L
FLUORANTHENE	10	U	UG/L
FLUORENE	10	U	UG/L
INDENO(1,2,3-CD) PYRENE	10	U	UG/L
NAPHTHALENE	10	U	UG/L
PHENANTHRENE	10	U	UG/L
PYRENE	10	U	UG/L

007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A140W

VOLATILES

Sample Number: ABDPGW
Sample Date: 10/3/96
Laboratory ID: 9610140-02
QC Type: NORMAL
% Moisture: 0
Location: ABDPGW

	RESULT	QUAL	UNITS
1,2-DICHLOROBENZENE	2	U	UG/L
1,3-DICHLOROBENZENE	2	U	UG/L
1,4-DICHLOROBENZENE	2	U	UG/L
BENZENE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
TOLUENE	2	U	UG/L
XYLENES (TOTAL)	6	U	UG/L

Sample Number: ABMW-1
Sample Date: 10/3/96
Laboratory ID: 9610140-01
QC Type: NORMAL
% Moisture: 0
Location: ABMW-1

	RESULT	QUAL	UNITS
1,2-DICHLOROBENZENE	2	U	UG/L
1,3-DICHLOROBENZENE	2	U	UG/L
1,4-DICHLOROBENZENE	2	U	UG/L
BENZENE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
TOLUENE	2	U	UG/L
XYLENES (TOTAL)	6	U	UG/L

Sample Number: ABMW-3
Sample Date: 10/3/96
Laboratory ID: 9610140-03
QC Type: NORMAL
% Moisture: 0
Location: ABMW-3

	RESULT	QUAL	UNIT
1,2-DICHLOROBENZENE	2	U	UG/l
1,3-DICHLOROBENZENE	2	U	UG/l
1,4-DICHLOROBENZENE	2	U	UG/l
BENZENE	2	U	UG/l
CHLOROBENZENE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
TOLUENE	2	U	UG/L
XYLENES (TOTAL)	6	U	UG/L

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A140W

VOLATILES

Sample Number: B6SW
Sample Date: 10/5/96
Laboratory ID: 9610140-05
QC Type: NORMAL
% Moisture: 0
Location: B6SW

	RESULT	QUAL	UNITS
1,2-DICHLOROBENZENE	2	U	UG/L
1,3-DICHLOROBENZENE	2	U	UG/L
1,4-DICHLOROBENZENE	2	U	UG/L
BENZENE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
ETHYLBENZENE	2	U	UG/L
TOLUENE	2	U	UG/L
XYLENES (TOTAL)	6	U	UG/L

Sample Number: RB09100796
Sample Date: 10/7/96
Laboratory ID: 9610140-06
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-CHLORO-1,3-BUTADIENE	2	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	14.8	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	UR	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL) ETHER	10	U	UG/L
BROMODICHLOROMETHANE	2	U	UG/L
BROMOFORM	2	U	UG/L
BROMOMETHANE	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROMETHANE	2	U	UG/L
CIS-1,3-DICHLOROPROPENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG
DICHLORODIFLUOROMETHANE	2	U	UG
ETHYL CYANIDE	20	UR	UG
ETHYLBENZENE	2	U	UG
IODOMETHANE	5	U	UG
ISOBUTYL ALCOHOL	20	UR	UG
METHACRYLONITRILE	10	U	UG
METHYL METHACRYLATE	10	U	UG
METHYLENE CHLORIDE	5	U	UG
STYRENE	2	U	UG
TETRACHLOROETHENE	2	U	UG
TOLUENE	2	U	UG
TRANS-1,2-DICHLOROETHENE	2	U	UG
TRANS-1,3-DICHLOROPROPENE	2	U	UG
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG
TRICHLOROETHENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES, TOTAL	4	U	UG/L

SDG: 6A140W

VOLATILES

Sample Number: TB09100596
Sample Date: 9/30/96
Laboratory ID: 9610140-04
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
1,1,1,2-TETRACHLOROETHANE	2	U	UG/L
1,1,1-TRICHLOROETHANE	2	U	UG/L
1,1,2,2-TETRACHLOROETHANE	2	U	UG/L
1,1,2-TRICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHANE	2	U	UG/L
1,1-DICHLOROETHENE	2	U	UG/L
1,2,3-TRICHLOROPROPANE	2	U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG/L
1,2-DIBROMOETHANE	2	U	UG/L
1,2-DICHLOROETHANE	2	U	UG/L
1,2-DICHLOROPROPANE	2	U	UG/L
2-BUTANONE	5	U	UG/L
2-CHLORO-1,3-BUTADIENE	2	U	UG/L
2-HEXANONE	5	U	UG/L
4-METHYL-2-PENTANONE	5	U	UG/L
ACETONE	7.8	U	UG/L
ACETONITRILE	10	U	UG/L
ACROLEIN	20	UR	UG/L
ACRYLONITRILE	20	U	UG/L
ALLYL CHLORIDE	10	U	UG/L
BENZENE	2	U	UG/L
BIS(2-CHLOROISOPROPYL) ETHER	10	U	UG/L
BROMODICHLOROMETHANE	2	U	UG/L
BROMOFORM	2	U	UG/L
BROMOMETHANE	2	U	UG/L
CARBON DISULFIDE	5	U	UG/L
CARBON TETRACHLORIDE	2	U	UG/L
CHLOROBENZENE	2	U	UG/L
CHLORODIBROMOMETHANE	2	U	UG/L
CHLOROETHANE	2	U	UG/L
CHLOROFORM	2	U	UG/L
CHLOROMETHANE	2	U	UG/L
CIS-1,3-DICHLOROPROPENE	2	U	UG/L
DIBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	2	U	UG/L
ETHYL CYANIDE	20	U	UG/L
ETHYLBENZENE	2	U	UG/L
IODOMETHANE	5	U	UG/L
ISOBUTYL ALCOHOL	20	UR	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYLENE CHLORIDE	0.16	J	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHENE	2	U	UG/L
TOLUENE	2	U	UG/L
TRANS-1,2-DICHLOROETHENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES, TOTAL	4	U	UG/L

Sample Number: TB10100796
Sample Date: 9/30/96
Laboratory ID: 9610140-07
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNI
1,1,1,2-TETRACHLOROETHANE	2	U	UG
1,1,1-TRICHLOROETHANE	2	U	UG
1,1,2,2-TETRACHLOROETHANE	2	U	UG
1,1,2-TRICHLOROETHANE	2	U	UG
1,1-DICHLOROETHANE	2	U	UG
1,1-DICHLOROETHENE	2	U	UG
1,2,3-TRICHLOROPROPANE	2	U	UG
1,2-DIBROMO-3-CHLOROPROPANE	2	U	UG
1,2-DIBROMOETHANE	2	U	UG
1,2-DICHLOROETHANE	2	U	UG
1,2-DICHLOROPROPANE	2	U	UG
2-BUTANONE	5	U	UG/
2-CHLORO-1,3-BUTADIENE	2	U	UG/
2-HEXANONE	5	U	UG/
4-METHYL-2-PENTANONE	5	U	UG/
ACETONE	9.3	U	UG/
ACETONITRILE	10	U	UG/
ACROLEIN	20	UR	UG/
ACRYLONITRILE	20	U	UG/
ALLYL CHLORIDE	10	U	UG/
BENZENE	2	U	UG/
BIS(2-CHLOROISOPROPYL) ETHER	10	U	UG/
BROMODICHLOROMETHANE	2	U	UG/
BROMOFORM	2	U	UG/
BROMOMETHANE	2	U	UG/
CARBON DISULFIDE	5	U	UG/
CARBON TETRACHLORIDE	2	U	UG/
CHLOROBENZENE	2	U	UG/
CHLORODIBROMOMETHANE	2	U	UG/
CHLOROETHANE	2	U	UG/
CHLOROFORM	2	U	UG/
CHLOROMETHANE	2	U	UG/
CIS-1,3-DICHLOROPROPENE	2	U	UG/

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A140W

VOLATILES

DIBROMOMETHANE	2	U	UG/L
DICHLORODIFLUOROMETHANE	2	U	UG/L
ETHYL CYANIDE	20	U	UG/L
ETHYLBENZENE	2	U	UG/L
IODOMETHANE	5	U	UG/L
ISOBUTYL ALCOHOL	20	UR	UG/L
METHACRYLONITRILE	10	U	UG/L
METHYL METHACRYLATE	10	U	UG/L
METHYLENE CHLORIDE	5	U	UG/L
STYRENE	2	U	UG/L
TETRACHLOROETHENE	2	U	UG/L
TOLUENE	2	U	UG/L
TRANS-1,2-DICHLOROETHENE	2	U	UG/L
TRANS-1,3-DICHLOROPROPENE	2	U	UG/L
TRANS-1,4-DICHLORO-2-BUTENE	10	U	UG/L
TRICHLOROETHENE	2	U	UG/L
TRICHLOROFLUOROMETHANE	2	U	UG/L
VINYL ACETATE	5	U	UG/L
VINYL CHLORIDE	2	U	UG/L
XYLENES, TOTAL	4	U	UG/L

SDG: 6A140W

PESTICIDES/PCBs

Sample Number: ABDPGW
Sample Date: 10/3/96
Laboratory ID: 9610140-02
QC Type: NORMAL
% Moisture: 0
Location: ABDPGW

	RESULT	QUAL	UNITS
2,4,5-T	0.62	U	UG/L
2,4,5-TP (SILVEX)	0.77	U	UG/L
2,4-D	0.74	U	UG/L
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.085		UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN I	0.04	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.06	J	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.022	J	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

Sample Number: ABMW-1
Sample Date: 10/3/96
Laboratory ID: 9610140-01
QC Type: NORMAL
% Moisture: 0
Location: ABMW-1

	RESULT	QUAL	UNITS
2,4,5-T	0.097	U	UG/L
2,4,5-TP (SILVEX)	0.097	U	UG/L
2,4-D	0.097	U	UG/L
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.08	U	UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN I	0.04	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.04	U	UG/L
HEPTACHLOR EPOXIDE	0.022	J	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

Sample Number: ABMW-3
Sample Date: 10/3/96
Laboratory ID: 9610140-03
QC Type: NORMAL
% Moisture: 0
Location: ABMW-3

	RESULT	QUAL	UN
2,4,5-T	0.096	U	UG
2,4,5-TP (SILVEX)	0.096	U	UG
2,4-D	0.096	U	UG
4,4'-DDD	0.93		UG
4,4'-DDE	0.65	J	UG
4,4'-DDT	1		UG
ALDRIN	0.071		UG
ALPHA-BHC	0.04	U	UG
AROCLOR-1016	0.25	U	UG
AROCLOR-1221	0.25	U	UG
AROCLOR-1232	0.25	U	UG
AROCLOR-1242	0.25	U	UG
AROCLOR-1248	0.25	U	UG
AROCLOR-1254	0.25	U	UG
AROCLOR-1260	0.25	U	UG
BETA-BHC	0.11		UG
CHLORDANE	0.5	U	UG
DELTA-BHC	0.097		UG
DIELDRIN	0.64	J	UG
ENDOSULFAN I	0.42		UG
ENDOSULFAN II	0.69		UG
ENDOSULFAN SULFATE	0.7		UG
ENDRIN	0.08	U	UG
ENDRIN ALDEHYDE	0.59		UG
GAMMA-BHC (LINDANE)	0.04	U	UG
HEPTACHLOR	0.026	J	UG
HEPTACHLOR EPOXIDE	0.43		UG
METHOXYCHLOR	0.4	U	UG
METHYL PARATHION	0.1	U	UG
PARATHION	0.1	U	UG
PHORATE	0.1	U	UG
TOXAPHENE	2	U	UG

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A140W

PESTICIDES/PCBs

Sample Number: B6SW
Sample Date: 10/5/96
Laboratory ID: 9610140-05
QC Type: NORMAL
% Moisture: 0
Location: B6SW

	RESULT	QUAL	UNITS
2,4,5-T	0.097	U	UG/L
2,4,5-TP (SILVEX)	0.097	U	UG/L
2,4-D	0.097	U	UG/L
4,4'-DDD	0.047	U	UG/L
4,4'-DDE	0.047	U	UG/L
4,4'-DDT	0.047	U	UG/L
ALDRIN	0.024	U	UG/L
ALPHA-BHC	0.024	U	UG/L
AROCLOR-1016	0.15	U	UG/L
AROCLOR-1221	0.15	U	UG/L
AROCLOR-1232	0.15	U	UG/L
AROCLOR-1242	0.15	U	UG/L
AROCLOR-1254	0.15	U	UG/L
AROCLOR-1260	0.15	U	UG/L
BETA-BHC	0.024	U	UG/L
CHLORDANE	0.29	U	UG/L
DELTA-BHC	0.024	U	UG/L
DIELDRIN	0.047	U	UG/L
ENDOSULFAN I	0.024	U	UG/L
ENDOSULFAN II	0.047	U	UG/L
ENDOSULFAN SULFATE	0.047	U	UG/L
ENDRIN	0.047	U	UG/L
ENDRIN ALDEHYDE	0.047	U	UG/L
GAMMA-BHC (LINDANE)	0.024	U	UG/L
HEPTACHLOR	0.024	U	UG/L
HEPTACHLOR EPOXIDE	0.024	U	UG/L
METHOXYCHLOR	0.24	U	UG/L
METHYL PARATHION	0.059	U	UG/L
PARATHION	0.059	U	UG/L
PHORATE	0.059	U	UG/L
TOXAPHENE	1.2	U	UG/L

Sample Number: RB09-100796
Sample Date: 10/7/96
Laboratory ID: 9610140-06
QC Type: NORMAL
% Moisture: 0
Location:

	RESULT	QUAL	UNITS
2,4,5-T	0.1	U	UG/L
2,4,5-TP (SILVEX)	0.1	U	UG/L
2,4-D	0.1	U	UG/L
4,4'-DDD	0.08	U	UG/L
4,4'-DDE	0.08	U	UG/L
4,4'-DDT	0.08	U	UG/L
ALDRIN	0.04	U	UG/L
ALPHA-BHC	0.04	U	UG/L
AROCLOR-1016	0.25	U	UG/L
AROCLOR-1221	0.25	U	UG/L
AROCLOR-1232	0.25	U	UG/L
AROCLOR-1242	0.25	U	UG/L
AROCLOR-1248	0.25	U	UG/L
AROCLOR-1254	0.25	U	UG/L
AROCLOR-1260	0.25	U	UG/L
BETA-BHC	0.04	U	UG/L
CHLORDANE	0.5	U	UG/L
DELTA-BHC	0.04	U	UG/L
DIELDRIN	0.08	U	UG/L
ENDOSULFAN II	0.08	U	UG/L
ENDOSULFAN SULFATE	0.08	U	UG/L
ENDOSULFAN-I	0.04	U	UG/L
ENDRIN	0.08	U	UG/L
ENDRIN ALDEHYDE	0.08	U	UG/L
GAMMA-BHC (LINDANE)	0.04	U	UG/L
HEPTACHLOR	0.11	J	UG/L
HEPTACHLOR EPOXIDE	0.04	U	UG/L
METHOXYCHLOR	0.4	U	UG/L
METHYL PARATHION	0.1	U	UG/L
PARATHION	0.1	U	UG/L
PHORATE	0.1	U	UG/L
TOXAPHENE	2	U	UG/L

INORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 9, 1997**
FROM:	**JULEA F. BRADLEY**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA REVIEW – TAL METALS AND CYANIDE**
CTO 007 – KEY WEST, FLORIDA
SDG – 6A172S

SAMPLES: 12/Soil:

B8SS	B8SB	S7SB24
S7SB23	S7SB21	S7DPSB
S7SB22	S4SB2	B6SB
B7SB	B4SB	B6SS

Overview

The sample set for CTO 007, Key West, SDG 6A172S, consists of twelve (12) soil environmental samples. One (1) field duplicate pair (S7SB23/S7DPSB) is included within this SDG.

All samples were analyzed for Target Analyte List (TAL) metals and cyanide. The samples were collected by Brown & Root Environmental on October 4, 1996 and analyzed by General Engineering Laboratory under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- Calibration Verifications
- * Laboratory Blank Analyses
- Field Duplicate Results
- Matrix Spike Results

* Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/ preparation/ field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level (soil)
antimony	5.3 ug/L	5.3 mg/kg
arsenic	3.2 ug/L	3.2 mg/kg
barium	0.3 ug/L	0.3 mg/kg
beryllium	0.3 ug/L	0.3 mg/kg
cadmium	0.4 ug/L	0.4 mg/kg
calcium	2.01 ug/L	2.01 mg/kg
cyanide	1.8 ug/L	1.8 mg/kg
iron	4.6 ug/L	4.6 mg/kg
magnesium	8.9 ug/L	8.9 mg/kg
zinc	1.4 ug/L	1.4 mg/kg

Samples affected: All

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for antimony, arsenic, beryllium, and cadmium have been qualified as nondetected, "U." No action was taken for the remaining analytes since either the results were greater than the action level or were nondetects.

Notes

It was noted that the Matrix Spike (MS) Percent Recovery (%R) for antimony (72.7%), selenium (67.8%), thallium (71.2%), and cyanide (69.9%) were below the control limits. However, the noncompliances were not great enough to warrant action.

A comparison of field duplicate pair S7SB23/S7DPSB can be found in Appendix C. However, no validation actions are required for field duplicate imprecision.

The Contract Required Control Limit (CRDL) Standard percent recovery (%Rs) for selenium was below the quality control limit. However, no validation actions were taken for CRDL Standard %Rs.

It was noted that all samples were analyzed at 100X dilution for calcium.

No field blanks or rinsate blanks were reported in this sample delivery group.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method/ preparation blanks.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed in accordance with the "National Functional Guidelines for Inorganic Review," February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality. "I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Julea F. Bradley
Brown & Root Environmental
Julea F. Bradley
Environmental Scientist/Data Validator

Teresa M. Hudson
for Brown & Root Environmental
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

KEY WEST
SDG – 6A172S

TABLE 1 - RECOMMENDATION SUMMARY

Aluminum		Magnesium	
Antimony	A[1]	Manganese	
Arsenic	A[1]	Mercury	
Barium		Nickel	
Beryllium	A[1]	Potassium	
Cadmium	A[1]	Selenium	
Calcium		Silver	
Chromium		Sodium	
Cobalt		Thallium	
Copper		Vanadium	
Iron		Zinc	
Lead		Cyanide	

If the field is left blank, the qualifier is A - Accept all data.

A[1] - Accept data but qualify as nondetected, "U," as a result of laboratory blank contamination.

APPENDIX A
Qualified Analytical Results

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: .6A172S

INORGANICS

Sample Number: B4SB
Sample Date: 10/4/96
Laboratory ID: 9610172-11
QC Type: NORMAL
% Moisture: 22
Location: B4SB

	RESULT	QUAL	UNITS
ALUMINUM	379		MG/KG
ANTIMONY	0.5	UJ	MG/KG
ARSENIC	1.1	U	MG/KG
BARIUM	4.9		MG/KG
BERYLLIUM	0.02	U	MG/KG
CADMIUM	0.08	U	MG/KG
CALCIUM	381000		MG/KG
CHROMIUM	4.9		MG/KG
COBALT	0.25	U	MG/KG
COPPER	7.4		MG/KG
CYANIDE	0.09	UJ	MG/KG
IRON	448		MG/KG
LEAD	14.2		MG/KG
MAGNESIUM	2110		MG/KG
MANGANESE	9.7		MG/KG
MERCURY	0.03		MG/KG
NICKEL	1.1		MG/KG
POTASSIUM	123		MG/KG
SELENIUM	0.5	UJ	MG/KG
SILVER	0.25	U	MG/KG
SODIUM	1550		MG/KG
THALLIUM	0.5	UJ	MG/KG
VANADIUM	2.3		MG/KG
ZINC	0.25	U	MG/KG

Sample Number: B6SB
Sample Date: 10/4/96
Laboratory ID: 9610172-09
QC Type: NORMAL
% Moisture: 25
Location: B6SB

	RESULT	QUAL	UNITS
ALUMINUM	2220		MG/KG
ANTIMONY	0.53	UJ	MG/KG
ARSENIC	3.1	U	MG/KG
BARIUM	13.8		MG/KG
BERYLLIUM	0.03	U	MG/KG
CADMIUM	0.16	U	MG/KG
CALCIUM	342000		MG/KG
CHROMIUM	7.2		MG/KG
COBALT	0.27	U	MG/KG
COPPER	5.2		MG/KG
CYANIDE	0.09	UJ	MG/KG
IRON	1290		MG/KG
LEAD	8.8		MG/KG
MAGNESIUM	10400		MG/KG
MANGANESE	17.5		MG/KG
MERCURY	0.03		MG/KG
NICKEL	1.6		MG/KG
POTASSIUM	430		MG/KG
SELENIUM	0.53	UJ	MG/KG
SILVER	0.27	U	MG/KG
SODIUM	4870		MG/KG
THALLIUM	0.53	UJ	MG/KG
VANADIUM	4.5		MG/KG
ZINC	0.27	U	MG/KG

Sample Number: B6SS
Sample Date: 10/5/96
Laboratory ID: 9610172-12
QC Type: NORMAL
% Moisture: 61
Location: B6SS

	RESULT	QUAL	UNIT
ALUMINUM	945		MG/K
ANTIMONY	0.98	UJ	MG/K
ARSENIC	8.1	U	MG/K
BARIUM	7.2		MG/K
BERYLLIUM	0.05	U	MG/K
CADMIUM	0.72	U	MG/K
CALCIUM	242000		MG/K
CHROMIUM	6.2		MG/K
COBALT	0.49	U	MG/K
COPPER	14		MG/K
CYANIDE	0.17	UJ	MG/K
IRON	3640		MG/K
LEAD	23.7		MG/K
MAGNESIUM	4730		MG/K
MANGANESE	14.3		MG/K
MERCURY	0.05		MG/K
NICKEL	3.6		MG/K
POTASSIUM	917		MG/K
SELENIUM	0.98	UJ	MG/K
SILVER	0.49	U	MG/K
SODIUM	21400		MG/K
THALLIUM	0.98	UJ	MG/K
VANADIUM	11.7		MG/K
ZINC	140		MG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A172S

INORGANICS

Sample Number: B7SB
Sample Date: 10/4/96
Laboratory ID: 9610172-10
QC Type: NORMAL
% Moisture: 16
Location: B7SB

	RESULT	QUAL	UNITS
ALUMINUM	1470		MG/KG
ANTIMONY	0.46	UJ	MG/KG
ARSENIC	2.8	U	MG/KG
BARIUM	19.3		MG/KG
BERYLLIUM	0.02	U	MG/KG
CADMIUM	0.24	U	MG/KG
CALCIUM	356000		MG/KG
CHROMIUM	24.5		MG/KG
COBALT	0.57		MG/KG
COPPER	39.9		MG/KG
CYANIDE	0.08	UJ	MG/KG
IRON	2300		MG/KG
LEAD	166		MG/KG
MAGNESIUM	5680		MG/KG
MANGANESE	27.9		MG/KG
MERCURY	0.07		MG/KG
NICKEL	13.2		MG/KG
POTASSIUM	242		MG/KG
SELENIUM	0.46	UJ	MG/KG
SILVER	0.26		MG/KG
SODIUM	2300		MG/KG
THALLIUM	0.46	UJ	MG/KG
VANADIUM	38.7		MG/KG
ZINC	28.4		MG/KG

Sample Number: B8SB
Sample Date: 10/4/96
Laboratory ID: 9610172-02
QC Type: NORMAL
% Moisture: 18
Location: B8SB

	RESULT	QUAL	UNITS
ALUMINUM	429		MG/KG
ANTIMONY	0.48	UJ	MG/KG
ARSENIC	0.78	U	MG/KG
BARIUM	7.1		MG/KG
BERYLLIUM	0.02	U	MG/KG
CADMIUM	0.05	U	MG/KG
CALCIUM	373000		MG/KG
CHROMIUM	3.6		MG/KG
COBALT	0.24	U	MG/KG
COPPER	5.4		MG/KG
CYANIDE	0.08	UJ	MG/KG
IRON	390		MG/KG
LEAD	10.4		MG/KG
MAGNESIUM	1830		MG/KG
MANGANESE	6		MG/KG
MERCURY	0.03		MG/KG
NICKEL	2.8		MG/KG
POTASSIUM	86.8		MG/KG
SELENIUM	0.51	J	MG/KG
SILVER	0.24	U	MG/KG
SODIUM	1470		MG/KG
THALLIUM	0.48	UJ	MG/KG
VANADIUM	8.2		MG/KG
ZINC	0.24	U	MG/KG

Sample Number: B8SS
Sample Date: 10/4/96
Laboratory ID: 9610172-01
QC Type: NORMAL
% Moisture: 30
Location: B8SS

	RESULT	QUAL	UNIT
ALUMINUM	120		MG/K
ANTIMONY	0.57	UJ	MG/K
ARSENIC	1.1	U	MG/K
BARIUM	5.3		MG/K
BERYLLIUM	0.03	U	MG/K
CADMIUM	0.06		MG/K
CALCIUM	352000		MG/K
CHROMIUM	3		MG/K
COBALT	0.28	U	MG/K
COPPER	5.3		MG/K
CYANIDE	0.1	UJ	MG/K
IRON	452		MG/K
LEAD	8.4		MG/K
MAGNESIUM	2740		MG/K
MANGANESE	4.4		MG/K
MERCURY	0.02	U	MG/K
NICKEL	0.93		MG/K
POTASSIUM	282		MG/K
SELENIUM	0.59	J	MG/K
SILVER	0.28	U	MG/K
SODIUM	5560		MG/K
THALLIUM	0.57	UJ	MG/K
VANADIUM	2.6		MG/K
ZINC	0.28	U	MG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A172S

INORGANICS

Sample Number: S4SB2
Sample Date: 10/4/96
Laboratory ID: 9610172-08
QC Type: NORMAL
% Moisture: 12
Location: S4SB-2

	RESULT	QUAL	UNITS
ALUMINUM	243		MG/KG
ANTIMONY	0.44	UJ	MG/KG
ARSENIC	1.1	U	MG/KG
BARIUM	11.9		MG/KG
BERYLLIUM	0.02	U	MG/KG
CADMIUM	5.9		MG/KG
CALCIUM	257000		MG/KG
CHROMIUM	14.9		MG/KG
COBALT	0.22	U	MG/KG
COPPER	66.3		MG/KG
CYANIDE	0.08	UJ	MG/KG
IRON	530		MG/KG
LEAD	60.8		MG/KG
MAGNESIUM	908		MG/KG
MANGANESE	7.8		MG/KG
MERCURY	0.08		MG/KG
NICKEL	1.2		MG/KG
POTASSIUM	58.2		MG/KG
SELENIUM	0.44	U	MG/KG
SILVER	1.5		MG/KG
SODIUM	641		MG/KG
THALLIUM	0.44	UJ	MG/KG
VANADIUM	1.7		MG/KG
ZINC	65.5		MG/KG

Sample Number: S7DPSB
Sample Date: 10/4/96
Laboratory ID: 9610172-06
QC Type: NORMAL
% Moisture: 31
Location: S7DPSB

	RESULT	QUAL	UNITS
ALUMINUM	5110		MG/KG
ANTIMONY	1.4	U	MG/KG
ARSENIC	3.8	U	MG/KG
BARIUM	17.5		MG/KG
BERYLLIUM	0.11	U	MG/KG
CADMIUM	0.73		MG/KG
CALCIUM	300000		MG/KG
CHROMIUM	11.6		MG/KG
COBALT	0.33		MG/KG
COPPER	31.8		MG/KG
CYANIDE	0.1	UJ	MG/KG
IRON	3730		MG/KG
LEAD	240		MG/KG
MAGNESIUM	6540		MG/KG
MANGANESE	31.9		MG/KG
MERCURY	0.08		MG/KG
NICKEL	3.6		MG/KG
POTASSIUM	387		MG/KG
SELENIUM	1.5	J	MG/KG
SILVER	0.29		MG/KG
SODIUM	1380		MG/KG
THALLIUM	0.57	UJ	MG/KG
VANADIUM	8.5		MG/KG
ZINC	62		MG/KG

Sample Number: S7SB21
Sample Date: 10/4/96
Laboratory ID: 9610172-05
QC Type: NORMAL
% Moisture: 23
Location: S7SB-21

	RESULT	QUAL	UNIT
ALUMINUM	2570		MG/K
ANTIMONY	0.5	UJ	MG/K
ARSENIC	5.3		MG/K
BARIUM	7.8		MG/K
BERYLLIUM	0.05	U	MG/K
CADMIUM	0.42	U	MG/K
CALCIUM	232000		MG/K
CHROMIUM	5.6		MG/K
COBALT	0.38		MG/K
COPPER	20.4		MG/K
CYANIDE	0.09	UJ	MG/K
IRON	3090		MG/K
LEAD	172		MG/K
MAGNESIUM	2470		MG/K
MANGANESE	15.2		MG/K
MERCURY	0.04		MG/K
NICKEL	2.1		MG/K
POTASSIUM	263		MG/K
SELENIUM	0.79	J	MG/K
SILVER	0.25	U	MG/K
SODIUM	1110		MG/K
THALLIUM	0.5	UJ	MG/K
VANADIUM	5.1		MG/K
ZINC	6.6		MG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A172S

INORGANICS

Sample Number: S7SB22
Sample Date: 10/4/96
Laboratory ID: 9610172-07
QC Type: NORMAL
% Moisture: 36
Location: S7SB-22

	RESULT	QUAL	UNITS
ALUMINUM	2650		MG/KG
ANTIMONY	1.7	U	MG/KG
ARSENIC	2.4	U	MG/KG
BARIUM	14.6		MG/KG
BERYLLIUM	0.03	U	MG/KG
CADMIUM	0.6	U	MG/KG
CALCIUM	359000		MG/KG
CHROMIUM	6.4		MG/KG
COBALT	0.31	U	MG/KG
COPPER	67.2		MG/KG
CYANIDE	0.1	UJ	MG/KG
IRON	1730		MG/KG
LEAD	71.3		MG/KG
MAGNESIUM	8380		MG/KG
MANGANESE	26.1		MG/KG
MERCURY	0.05		MG/KG
NICKEL	2.4		MG/KG
POTASSIUM	329		MG/KG
SELENIUM	1	J	MG/KG
SILVER	0.31	U	MG/KG
SODIUM	1720		MG/KG
THALLIUM	0.61	UJ	MG/KG
VANADIUM	3.7		MG/KG
ZINC	32.5		MG/KG

Sample Number: S7SB23
Sample Date: 10/4/96
Laboratory ID: 9610172-04
QC Type: NORMAL
% Moisture: 34
Location: S7SB-23

	RESULT	QUAL	UNITS
ALUMINUM	5280		MG/KG
ANTIMONY	1.6	U	MG/KG
ARSENIC	3.5	U	MG/KG
BARIUM	20.1		MG/KG
BERYLLIUM	0.12	U	MG/KG
CADMIUM	0.77		MG/KG
CALCIUM	287000		MG/KG
CHROMIUM	12.6		MG/KG
COBALT	0.41		MG/KG
COPPER	40.3		MG/KG
CYANIDE	0.11	UJ	MG/KG
IRON	3840		MG/KG
LEAD	265		MG/KG
MAGNESIUM	7530		MG/KG
MANGANESE	32.5		MG/KG
MERCURY	0.07		MG/KG
NICKEL	3.8		MG/KG
POTASSIUM	405		MG/KG
SELENIUM	1.4	J	MG/KG
SILVER	0.39		MG/KG
SODIUM	1570		MG/KG
THALLIUM	0.58	UJ	MG/KG
VANADIUM	8.5		MG/KG
ZINC	90.8		MG/KG

Sample Number: S7SB24
Sample Date: 10/4/96
Laboratory ID: 9610172-03
QC Type: NORMAL
% Moisture: 21
Location: S7SB-24

	RESULT	QUAL	UNIT
ALUMINUM	1780		MG/K
ANTIMONY	1.8	U	MG/K
ARSENIC	2.1	U	MG/K
BARIUM	17.1		MG/K
BERYLLIUM	0.03	U	MG/K
CADMIUM	0.42	U	MG/K
CALCIUM	355000		MG/K
CHROMIUM	5.7		MG/K
COBALT	0.29		MG/K
COPPER	57.1		MG/K
CYANIDE	0.09	UJ	MG/K
IRON	1430		MG/K
LEAD	78.3		MG/K
MAGNESIUM	5540		MG/K
MANGANESE	21.3		MG/K
MERCURY	0.05		MG/K
NICKEL	1.8		MG/K
POTASSIUM	187		MG/K
SELENIUM	0.5	UJ	MG/K
SILVER	0.25	U	MG/K
SODIUM	1520		MG/K
THALLIUM	0.5	UJ	MG/K
VANADIUM	2.7		MG/K
ZINC	29.5		MG/K

ORGANIC DATA VALIDATION

INTERNAL CORRESPONDENCE

TO:	CHUCK BRYAN	DATE:	FEBRUARY 10,, 1997
FROM:	EDWARD A. INABINETT	COPIES:	DV FILE

SUBJECT: ORGANIC DATA VALIDATION - VOA/SVOA/PEST/PCB/HERB
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG 6A172S

SAMPLES: 12/Soil:

B8SS	S7SB-21	B6SB
B8SB	S7DPSB	B7SB
S7SB-24	S7SB-22	B4SB
S7SB-23	S4SB-2	B6SS

The sample set for the CTO 007 NAS Key West site, SDG 6A172S, consists of twelve (12) soil environmental samples. All samples were analyzed for Appendix IX volatile and semivolatile compounds, plus the samples were also analyzed for Target Compound List (TCL) pesticide/PCB and herbicide organic compounds. The field crew designated samples B8SS, S4SB-2, and S7DPSS for Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis. One field duplicate pair was included in this SDG(S7DPSB/S7SB-23).

The samples were collected by Brown and Root Environmental on October 4th and 5th, 1996 and analyzed by General Engineering Laboratories, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Methods 8020, 8270, 8080 and 8150 analytical and reporting protocols. The data were evaluated according to the following parameters:

- * Holding times
- Initial and continuing calibrations
- * Laboratory and field blank analyses
- * Field Duplicate Precision
- * Compound Quantitation

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Volatiles

The laboratory method blank analysis yielded the following contaminant at the maximum concentration indicated.

Compound	Maximum Concentration	Action Level
toluene	1.4 µg/Kg	7 µg/Kg

Percent moisture, sample aliquot size, and dilution factors were considered prior to the application of the action level. The positive results for toluene reported above the detection limit but below the action level were qualified as undetected, "U". Positive results for toluene found below the detection limit have been deleted and replaced by the detection limit value, then qualified as undetected, "U".

Poor field duplicate precision was noted in the field duplicate pair S7SB-23/S7DPSB for 1,4-dichlorobenzene. No action is taken based on poor field duplicate precision.

No other problems were noted.

Semivolatiles

The holding time from date of collection to date of extraction was exceeded in sample B8SS. The positive and nondetected results reported for the target compounds in this sample is qualified as estimated "J" and "UJ" respectively.

It should be noted that samples B6SS and S7SB-21 were analyzed at various dilutions. Therefore, reporting levels are elevated.

No other problems were noted.

Pesticide/PCBs

Samples B4SB, B6SB, B6SS, B8SS, S4SB-2, S7SB-21, S7SB-23, and S7SB-24 had high %Ds between positive results on columns 1 and 2 for several single component pesticide compounds. Positive results for these compounds were qualified as estimated "J" in these aforementioned samples.

The laboratory qualifier "P" was removed from all target compound data with a %D above 25% and less than 100% between positive results on columns 1 and 2.

Sample B7SB was analyzed at a 10-fold dilution due to high concentrations of target analytes. However, the concentration for 4,4'-DDE still exceeded the linear calibration range of the instrument. As a result, the laboratory reanalyzed this sample at a 20-fold dilution. The original data, with the exception of the positive result for 4,4'-DDE, were used in validation. The diluted results for 4,4'-DDE was transposed over to the undiluted result and used in validation. No further action was taken.

No other problems were noted.

Herbicides

Poor field duplicate precision was noted in the field duplicate pair S7SB-23/S7DPSB for 2,4-D. No action is taken based on field duplicate precision.

No other problems were noted.

Additional Comments

Positive results reported below the CRQL were estimated "J".

Executive Summary

Laboratory Performance: Many pesticide/PCB compounds had high %Ds between positive results on columns 1 and 2.

Other Factors Affecting Data Quality: Several herbicide samples were re-extracted out of holding due to QC not meeting quality control criteria. Holding times were exceeded so original data was used. One pesticide compound required dilution prior to analyses.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Brown and Root Environmental

Edward A. Inabinett
Engineer/Data Validator

for
Brown and Root Environmental

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

NAS KEY WEST

SDG 6A172S

TABLE 1 - RECOMMENDATION SUMMARY

Sample No.	VOA			BNA			PEST/PCB			HERB		
B4SB	A[1]							J[7]				
B6SB	A[1]							J[4,5,10,13,14,17]				
B6SS	A[1]							J[2,4,6,13,14,16]				
B7SB	A[1]											
B8SB	A[1]											
B8SS	A[1]				J[1,10]			J[4,10,11]				
S4SB-2	A[1]							J[4,10]				
S7SB-21	A[1]							J[4,8,9,10,15,16]				
S7SB-22	A[1]				J[10]			J[12,13]				
S7SB-23	A[1]							J[3,8,10,12,14]				
S7DPSB	A[1]											
S7SB-24	A[1]				J[10]			J[8]				

If the field is left blank, the qualifier is A - Accept all data.

A[1] - Accept data, but change positive results for toluene to a revised detection limit and qualify as nondetected "U" as a result of laboratory method blank contamination.

J[1] - Accept data, but qualify positive and nondetected results for 1,2,4-trichlorobenzene, 1,4-dichlorobenzene, 2,4-dinitrotoluene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)flouranthene, benzo(g,h,i)perylene, benzo(k)flouranthene, chrysene, dibenzo(a,h)anthracene, flouranthene, flourene, ideno(1,2,3-cd)pyrene, n-nitroso-di-n-propylamine, naphthalene, phenanthrene, and pyrene as estimated "J" and "UJ" respectively as a result of holding times being exceeded.

J[2] - Accept data, but qualify positive results for gamma-BHC as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J[3] - Accept data, but qualify positive results for 4,4'-DDE as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J[4] - Accept data, but qualify positive results for endosulfan I as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J[5] - Accept data, but qualify positive results for endrin as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^6 - Accept data, but qualify positive results for delta-BHC as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^7 - Accept data, but qualify positive results for 4,4'-DDD as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^8 - Accept data, but qualify positive results for 4,4'-DDT as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^9 - Accept data, but qualify positive results for endrin aldehyde as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{10} - Accept data, but qualify positive results below the CRQL as estimated "J".

J^{11} - Accept data, but remove laboratory qualifier "P" for endrin as a result of %D greater than 25% and less than 100% between positive results in columns 1 and 2.

J^{12} - Accept data, but remove laboratory qualifier "P" for endosulfan I as a result of %D greater than 25% and less than 100% between positive results in columns 1 and 2.

J^{13} - Accept data, but remove laboratory qualifier "P" for 4,4'-DDT as a result of %D greater than 25% and less than 100% between positive results in columns 1 and 2.

J^{14} - Accept data, but remove laboratory qualifier "P" for 4,4'-DDD as a result of %D greater than 25% and less than 100% between positive results in columns 1 and 2.

J^{15} - Accept data, but remove laboratory qualifier "P" for heptachlor epoxide as a result of %D greater than 25% and less than 100% between positive results in columns 1 and 2.

J^{16} - Accept data, but remove laboratory qualifier "P" for 4,4'-DDE as a result of %D greater than 25% and less than 100% between positive results in columns 1 and 2.

J^{17} - Accept data, but remove laboratory qualifier "P" for methoxychlor as a result of %D greater than 25% and less than 100% between positive results in columns 1 and 2.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A172S

SEMIVOLATILES

Sample Number: B4SB
Sample Date: 10/4/96
Laboratory ID: 9610172-11
QC Type: NORMAL
% Moisture: 22
Location: B4SB

	RESULT	QUAL	UNITS
ACENAPHTHENE	416	U	UG/KG
ACENAPHTHYLENE	416	U	UG/KG
ANTHRACENE	416	U	UG/KG
BENZO(A)ANTHRACENE	416	U	UG/KG
BENZO(A)PYRENE	416	U	UG/KG
BENZO(B)FLUORANTHENE	416	U	UG/KG
BENZO(G,H,I)PERYLENE	416	U	UG/KG
BENZO(K)FLUORANTHENE	416	U	UG/KG
CHRYSENE	416	U	UG/KG
DIBENZO(A,H)ANTHRACENE	416	U	UG/KG
FLUORANTHENE	416	U	UG/KG
FLUORENE	416	U	UG/KG
INDENO(1,2,3-CD) PYRENE	416	U	UG/KG
NAPHTHALENE	416	U	UG/KG
PHENANTHRENE	416	U	UG/KG
PYRENE	416	U	UG/KG

Sample Number: B6SB
Sample Date: 10/4/96
Laboratory ID: 9610172-09
QC Type: NORMAL
% Moisture: 25
Location: B6SB

	RESULT	QUAL	UNITS
ACENAPHTHENE	441	U	UG/KG
ACENAPHTHYLENE	441	U	UG/KG
ANTHRACENE	441	U	UG/KG
BENZO(A)ANTHRACENE	441	U	UG/KG
BENZO(A)PYRENE	441	U	UG/KG
BENZO(B)FLUORANTHENE	441	U	UG/KG
BENZO(G,H,I)PERYLENE	441	U	UG/KG
BENZO(K)FLUORANTHENE	441	U	UG/KG
CHRYSENE	441	U	UG/KG
DIBENZO(A,H)ANTHRACENE	441	U	UG/KG
FLUORANTHENE	441	U	UG/KG
FLUORENE	441	U	UG/KG
INDENO(1,2,3-CD) PYRENE	441	U	UG/KG
NAPHTHALENE	441	U	UG/KG
PHENANTHRENE	441	U	UG/KG
PYRENE	441	U	UG/KG

Sample Number: B6SS
Sample Date: 10/5/96
Laboratory ID: 9610172-12
QC Type: NORMAL
% Moisture: 61
Location: B6SS

	RESULT	QUAL	UNIT
ACENAPHTHENE	844	U	UG/K
ACENAPHTHYLENE	844	U	UG/K
ANTHRACENE	844	U	UG/K
BENZO(A)ANTHRACENE	844	U	UG/K
BENZO(A)PYRENE	844	U	UG/K
BENZO(B)FLUORANTHENE	844	U	UG/K
BENZO(G,H,I)PERYLENE	844	U	UG/K
BENZO(K)FLUORANTHENE	844	U	UG/K
CHRYSENE	844	U	UG/K
DIBENZO(A,H)ANTHRACENE	844	U	UG/K
FLUORANTHENE	844	U	UG/K
FLUORENE	844	U	UG/K
INDENO(1,2,3-CD) PYRENE	844	U	UG/K
NAPHTHALENE	844	U	UG/K
PHENANTHRENE	844	U	UG/K
PYRENE	844	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A172S

SEMIVOLATILES

Sample Number: S4SB-2
Sample Date: 10/4/96
Laboratory ID: 9610172-08
QC Type: NORMAL
% Moisture: 12
Location: S4SB-2

	RESULT	QUAL	UNITS
1,2,4-TRICHLOROBENZENE	373	U	UG/KG
2,4-DINITROTOLUENE	373	U	UG/KG
ACENAPHTHENE	373	U	UG/KG
ACENAPHTHYLENE	373	U	UG/KG
ANTHRACENE	373	U	UG/KG
BENZO(A)ANTHRACENE	373	U	UG/KG
BENZO(A)PYRENE	373	U	UG/KG
BENZO(B)FLUORANTHENE	373	U	UG/KG
BENZO(G,H,I)PERYLENE	373	U	UG/KG
BENZO(K)FLUORANTHENE	373	U	UG/KG
CHRYSENE	373	U	UG/KG
DIBENZO(A,H)ANTHRACENE	373	U	UG/KG
FLUORANTHENE	373	U	UG/KG
FLUORENE	373	U	UG/KG
INDENO(1,2,3-CD) PYRENE	373	U	UG/KG
N-NITROSO-DI-N-PROPYLAMINE	373	U	UG/KG
NAPHTHALENE	373	U	UG/KG
PHENANTHRENE	373	U	UG/KG
PYRENE	373	U	UG/KG

Sample Number: S7DPSB
Sample Date: 10/4/96
Laboratory ID: 9610172-06
QC Type: NORMAL
% Moisture: 31
Location: S7DPSB

	RESULT	QUAL	UNITS
ACENAPHTHENE	1920	U	UG/KG
ACENAPHTHYLENE	1920	U	UG/KG
ANTHRACENE	1920	U	UG/KG
BENZO(A)ANTHRACENE	1920	U	UG/KG
BENZO(A)PYRENE	1920	U	UG/KG
BENZO(B)FLUORANTHENE	1920	U	UG/KG
BENZO(G,H,I)PERYLENE	1920	U	UG/KG
BENZO(K)FLUORANTHENE	1920	U	UG/KG
CHRYSENE	1920	U	UG/KG
DIBENZO(A,H)ANTHRACENE	1920	U	UG/KG
FLUORANTHENE	1920	U	UG/KG
FLUORENE	1920	U	UG/KG
INDENO(1,2,3-CD) PYRENE	1920	U	UG/KG
NAPHTHALENE	1920	U	UG/KG
PHENANTHRENE	1920	U	UG/KG
PYRENE	1920	U	UG/KG

Sample Number: S7SB-21
Sample Date: 10/4/96
Laboratory ID: 9610172-05
QC Type: NORMAL
% Moisture: 23
Location: S7SB-21

	RESULT	QUAL	UNIT
ACENAPHTHENE	1720	U	UG/K
ACENAPHTHYLENE	1720	U	UG/K
ANTHRACENE	1720	U	UG/K
BENZO(A)ANTHRACENE	1720	U	UG/K
BENZO(A)PYRENE	1720	U	UG/K
BENZO(B)FLUORANTHENE	1720	U	UG/K
BENZO(G,H,I)PERYLENE	1720	U	UG/K
BENZO(K)FLUORANTHENE	1720	U	UG/K
CHRYSENE	1720	U	UG/K
DIBENZO(A,H)ANTHRACENE	1720	U	UG/K
FLUORANTHENE	1720	U	UG/K
FLUORENE	1720	U	UG/K
INDENO(1,2,3-CD) PYRENE	1720	U	UG/K
NAPHTHALENE	1720	U	UG/K
PHENANTHRENE	1720	U	UG/K
PYRENE	1720	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A172S

SEMIVOLATILES

Sample Number: B7SB
Sample Date: 10/4/96
Laboratory ID: 9610172-10
QC Type: NORMAL
% Moisture: 16
Location: B7SB

	RESULT	QUAL	UNITS
ACENAPHTHENE	392	U	UG/KG
ACENAPHTHYLENE	392	U	UG/KG
ANTHRACENE	392	U	UG/KG
BENZO(A)ANTHRACENE	392	U	UG/KG
BENZO(A)PYRENE	392	U	UG/KG
BENZO(B)FLUORANTHENE	392	U	UG/KG
BENZO(G,H,I)PERYLENE	392	U	UG/KG
BENZO(K)FLUORANTHENE	392	U	UG/KG
CHRYSENE	392	U	UG/KG
DIBENZO(A,H)ANTHRACENE	392	U	UG/KG
FLUORANTHENE	392	U	UG/KG
FLUORENE	392	U	UG/KG
INDENO(1,2,3-CD) PYRENE	392	U	UG/KG
NAPHTHALENE	392	U	UG/KG
PHENANTHRENE	392	U	UG/KG
PYRENE	392	U	UG/KG

Sample Number: B8SB
Sample Date: 10/4/96
Laboratory ID: 9610172-02
QC Type: NORMAL
% Moisture: 18
Location: B8SB

	RESULT	QUAL	UNITS
ACENAPHTHENE	398	U	UG/KG
ACENAPHTHYLENE	398	U	UG/KG
ANTHRACENE	398	U	UG/KG
BENZO(A)ANTHRACENE	398	U	UG/KG
BENZO(A)PYRENE	398	U	UG/KG
BENZO(B)FLUORANTHENE	398	U	UG/KG
BENZO(G,H,I)PERYLENE	398	U	UG/KG
BENZO(K)FLUORANTHENE	398	U	UG/KG
CHRYSENE	398	U	UG/KG
DIBENZO(A,H)ANTHRACENE	398	U	UG/KG
FLUORANTHENE	398	U	UG/KG
FLUORENE	398	U	UG/KG
INDENO(1,2,3-CD) PYRENE	398	U	UG/KG
NAPHTHALENE	398	U	UG/KG
PHENANTHRENE	398	U	UG/KG
PYRENE	398	U	UG/KG

Sample Number: B8SS
Sample Date: 10/4/96
Laboratory ID: 9610172-01
QC Type: NORMAL
% Moisture: 30
Location: B8SS

	RESULT	QUAL	UNIT
1,2,4-TRICHLOROBENZENE	467	UJ	UG/K
2,4-DINITROTOLUENE	467	UJ	UG/K
ACENAPHTHENE	467	UJ	UG/K
ACENAPHTHYLENE	467	UJ	UG/K
ANTHRACENE	467	UJ	UG/K
BENZO(A)ANTHRACENE	467	UJ	UG/K
BENZO(A)PYRENE	467	UJ	UG/K
BENZO(B)FLUORANTHENE	489	J	UG/K
BENZO(G,H,I)PERYLENE	467	UJ	UG/K
BENZO(K)FLUORANTHENE	467	UJ	UG/K
CHRYSENE	417	J	UG/K
DIBENZO(A,H)ANTHRACENE	467	UJ	UG/K
FLUORANTHENE	690	J	UG/K
FLUORENE	467	UJ	UG/K
INDENO(1,2,3-CD) PYRENE	467	UJ	UG/K
N-NITROSO-DI-N-PROPYLAMINE	467	UJ	UG/K
NAPHTHALENE	467	UJ	UG/K
PHENANTHRENE	467	UJ	UG/K
PYRENE	509	J	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A172S

SEMIVOLATILES

Sample Number: S7SB-22
Sample Date: 10/4/96
Laboratory ID: 9610172-07
QC Type: NORMAL
% Moisture: 36
Location: S7SB-22

	RESULT	QUAL	UNITS
ACENAPHTHENE	2030	U	UG/KG
ACENAPHTHYLENE	2030	U	UG/KG
ANTHRACENE	2030	U	UG/KG
BENZO(A)ANTHRACENE	406	J	UG/KG
BENZO(A)PYRENE	2030	U	UG/KG
BENZO(B)FLUORANTHENE	972	J	UG/KG
BENZO(G,H,I)PERYLENE	2030	U	UG/KG
BENZO(K)FLUORANTHENE	2030	U	UG/KG
CHRYSENE	570	J	UG/KG
DIBENZO(A,H)ANTHRACENE	2030	U	UG/KG
FLUORANTHENE	704	J	UG/KG
FLUORENE	2030	U	UG/KG
INDENO(1,2,3-CD) PYRENE	2030	U	UG/KG
NAPHTHALENE	2030	U	UG/KG
PHENANTHRENE	2030	U	UG/KG
PYRENE	665	J	UG/KG

Sample Number: S7SB-23
Sample Date: 10/4/96
Laboratory ID: 9610172-04
QC Type: NORMAL
% Moisture: 34
Location: S7SB-23

	RESULT	QUAL	UNITS
ACENAPHTHENE	2000	U	UG/KG
ACENAPHTHYLENE	2000	U	UG/KG
ANTHRACENE	2000	U	UG/KG
BENZO(A)ANTHRACENE	2000	U	UG/KG
BENZO(A)PYRENE	2000	U	UG/KG
BENZO(B)FLUORANTHENE	2000	U	UG/KG
BENZO(G,H,I)PERYLENE	2000	U	UG/KG
BENZO(K)FLUORANTHENE	2000	U	UG/KG
CHRYSENE	2000	U	UG/KG
DIBENZO(A,H)ANTHRACENE	2000	U	UG/KG
FLUORANTHENE	2000	U	UG/KG
FLUORENE	2000	U	UG/KG
INDENO(1,2,3-CD) PYRENE	2000	U	UG/KG
NAPHTHALENE	2000	U	UG/KG
PHENANTHRENE	2000	U	UG/KG
PYRENE	2000	U	UG/KG

Sample Number: S7SB-24
Sample Date: 10/4/96
Laboratory ID: 9610172-03
QC Type: NORMAL
% Moisture: 21
Location: S7SB-24

	RESULT	QUAL	UNIT
ACENAPHTHENE	1670	U	UG/K
ACENAPHTHYLENE	1670	U	UG/K
ANTHRACENE	1670	U	UG/K
BENZO(A)ANTHRACENE	1640	J	UG/K
BENZO(A)PYRENE	2040		UG/K
BENZO(B)FLUORANTHENE	3340		UG/K
BENZO(G,H,I)PERYLENE	1460	J	UG/K
BENZO(K)FLUORANTHENE	1670	U	UG/K
CHRYSENE	1950		UG/K
DIBENZO(A,H)ANTHRACENE	1670	U	UG/K
FLUORANTHENE	3020		UG/K
FLUORENE	1670	U	UG/K
INDENO(1,2,3-CD) PYRENE	1480	J	UG/K
NAPHTHALENE	1670	U	UG/K
PHENANTHRENE	106	J	UG/K
PYRENE	2410		UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A172S

VOLATILES

Sample Number: B4SB
Sample Date: 10/4/96
Laboratory ID: 9610172-11
QC Type: NORMAL
% Moisture: 22
Location: B4SB

	RESULT	QUAL	UNITS
1,2-DICHLOROBENZENE	2.6	U	UG/KG
1,3-DICHLOROBENZENE	2.6	U	UG/KG
1,4-DICHLOROBENZENE	2.6	U	UG/KG
BENZENE	2.6	U	UG/KG
CHLOROBENZENE	2.6	U	UG/KG
ETHYLBENZENE	2.6	U	UG/KG
TOLUENE	3	U	UG/KG
XYLENES (TOTAL)	7.7	U	UG/KG

Sample Number: B6SBRA0
Sample Date: 10/4/96
Laboratory ID: 9610172-09
QC Type: NORMAL
% Moisture: 25
Location: B6SB

	RESULT	QUAL	UNITS
1,2-DICHLOROBENZENE	2.7	U	UG/KG
1,3-DICHLOROBENZENE	2.7	U	UG/KG
1,4-DICHLOROBENZENE	2.7	U	UG/KG
BENZENE	2.7	U	UG/KG
CHLOROBENZENE	2.7	U	UG/KG
ETHYLBENZENE	2.7	U	UG/KG
TOLUENE	2.6	U	UG/KG
XYLENES (TOTAL)	8	U	UG/KG

Sample Number: B6SS
Sample Date: 10/5/96
Laboratory ID: 9610172-12
QC Type: NORMAL
% Moisture: 61
Location: B6SS

	RESULT	QUAL	UNIT
1,2-DICHLOROBENZENE	5.1	U	UG/K
1,3-DICHLOROBENZENE	5.1	U	UG/K
1,4-DICHLOROBENZENE	5.1	U	UG/K
BENZENE	5.1	U	UG/K
CHLOROBENZENE	5.1	U	UG/K
ETHYLBENZENE	5.1	U	UG/K
TOLUENE	5	U	UG/K
XYLENES (TOTAL)	15.4	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A172S

VOLATILES

Sample Number: B7SBRA0
Sample Date: 10/4/96
Laboratory ID: 9610172-10
QC Type: NORMAL
% Moisture: 16
Location: B7SB

	RESULT	QUAL	UNITS
1,2-DICHLOROBENZENE	2.4	U	UG/KG
1,3-DICHLOROBENZENE	2.4	U	UG/KG
1,4-DICHLOROBENZENE	2.4	U	UG/KG
BENZENE	2.4	U	UG/KG
CHLOROBENZENE	2.4	U	UG/KG
ETHYLBENZENE	2.4	U	UG/KG
TOLUENE	2.3	U	UG/KG
XYLENES (TOTAL)	7.1	U	UG/KG

Sample Number: B8SBRA0
Sample Date: 10/4/96
Laboratory ID: 9610172-02
QC Type: NORMAL
% Moisture: 18
Location: B8SB

	RESULT	QUAL	UNITS
1,2-DICHLOROBENZENE	2.4	U	UG/KG
1,3-DICHLOROBENZENE	2.4	U	UG/KG
1,4-DICHLOROBENZENE	2.4	U	UG/KG
BENZENE	2.4	U	UG/KG
CHLOROBENZENE	2.4	U	UG/KG
ETHYLBENZENE	2.4	U	UG/KG
TOLUENE	2	U	UG/KG
XYLENES (TOTAL)	2.1	J	UG/KG

Sample Number: B8SS
Sample Date: 10/4/96
Laboratory ID: 9610172-01
QC Type: NORMAL
% Moisture: 30
Location: B8SS

	RESULT	QUAL	UNIT
1,2-DICHLOROBENZENE	2.8	U	UG/K
1,3-DICHLOROBENZENE	2.8	U	UG/K
BENZENE	2.8	U	UG/K
CHLOROBENZENE	2.8	U	UG/K
ETHYLBENZENE	2.8	U	UG/K
TOLUENE	3	U	UG/K
XYLENES (TOTAL)	8.6	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A172S

VOLATILES

Sample Number: S4SB-2
Sample Date: 10/4/96
Laboratory ID: 9610172-08
QC Type: NORMAL
% Moisture: 12
Location: S4SB-2

	RESULT	QUAL	UNITS
1,2-DICHLOROBENZENE	2.3	U	UG/KG
1,3-DICHLOROBENZENE	2.3	U	UG/KG
1,4-DICHLOROBENZENE	2.3	U	UG/KG
BENZENE	2.3	U	UG/KG
CHLOROBENZENE	2.3	U	UG/KG
ETHYLBENZENE	2.3	U	UG/KG
TOLUENE	2	U	UG/KG
XYLENES (TOTAL)	6.8	U	UG/KG

Sample Number: S7DPSB
Sample Date: 10/4/96
Laboratory ID: 9610172-06
QC Type: NORMAL
% Moisture: 31
Location: S7DPSB

	RESULT	QUAL	UNITS
1,2-DICHLOROBENZENE	2610		UG/KG
1,3-DICHLOROBENZENE	314		UG/KG
1,4-DICHLOROBENZENE	87.5		UG/KG
BENZENE	58	U	UG/KG
CHLOROBENZENE	130		UG/KG
ETHYLBENZENE	95.7		UG/KG
TOLUENE	58	U	UG/KG
XYLENES (TOTAL)	992		UG/KG

Sample Number: S7SB-21
Sample Date: 10/4/96
Laboratory ID: 9610172-05
QC Type: NORMAL
% Moisture: 23
Location: S7SB-21

	RESULT	QUAL	UNIT
1,2-DICHLOROBENZENE	1.6	J	UG/K
1,3-DICHLOROBENZENE	2.6	U	UG/K
1,4-DICHLOROBENZENE	2.6	U	UG/K
BENZENE	2.6	U	UG/K
CHLOROBENZENE	2.6	U	UG/K
ETHYLBENZENE	2.6	U	UG/K
TOLUENE	3	U	UG/K
XYLENES (TOTAL)	7.8	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A172S

VOLATILES

Sample Number: S7SB-22RA0
Sample Date: 10/4/96
Laboratory ID: 9610172-07
QC Type: NORMAL
% Moisture: 36
Location: S7SB-22

	RESULT	QUAL	UNITS
1,2-DICHLOROBENZENE	3.1	U	UG/KG
1,3-DICHLOROBENZENE	3.1	U	UG/KG
1,4-DICHLOROBENZENE	3.1	U	UG/KG
BENZENE	3.1	U	UG/KG
CHLOROBENZENE	3.1	U	UG/KG
ETHYLBENZENE	3.1	U	UG/KG
TOLUENE	2.6	U	UG/KG
XYLENES (TOTAL)	9.4	U	UG/KG

Sample Number: S7SB-23
Sample Date: 10/4/96
Laboratory ID: 9610172-04
QC Type: NORMAL
% Moisture: 34
Location: S7SB-23

	RESULT	QUAL	UNITS
1,2-DICHLOROBENZENE	2220		UG/KG
1,3-DICHLOROBENZENE	649		UG/KG
1,4-DICHLOROBENZENE	617		UG/KG
BENZENE	60.6	U	UG/KG
CHLOROBENZENE	104		UG/KG
ETHYLBENZENE	86.8		UG/KG
TOLUENE	61	U	UG/KG
XYLENES (TOTAL)	924		UG/KG

Sample Number: S7SB-24
Sample Date: 10/4/96
Laboratory ID: 9610172-03
QC Type: NORMAL
% Moisture: 21
Location: S7SB-24

	RESULT	QUAL	UNIT
1,2-DICHLOROBENZENE	2.5	U	UG/K
1,3-DICHLOROBENZENE	2.5	U	UG/K
1,4-DICHLOROBENZENE	2.5	U	UG/K
BENZENE	2.5	U	UG/K
CHLOROBENZENE	2.5	U	UG/K
ETHYLBENZENE	2.5	U	UG/K
TOLUENE	3	U	UG/K
XYLENES (TOTAL)	7.6	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A172S

PESTICIDES/PCBs

Sample Number: B4SB
Sample Date: 10/4/96
Laboratory ID: 9610172-11
QC Type: NORMAL
% Moisture: 22
Location: B4SB

	RESULT	QUAL	UNITS
2,4,5-T	2.6	U	UG/KG
2,4,5-TP (SILVEX)	2.6	U	UG/KG
2,4-D	2.6	U	UG/KG
4,4'-DDD	233	J	UG/KG
4,4'-DDE	741		UG/KG
4,4'-DDT	557		UG/KG
ALDRIN	84.7	U	UG/KG
ALPHA-BHC	84.7	U	UG/KG
AROCLOR-1016	530	U	UG/KG
AROCLOR-1221	530	U	UG/KG
AROCLOR-1232	530	U	UG/KG
AROCLOR-1242	530	U	UG/KG
AROCLOR-1248	530	U	UG/KG
AROCLOR-1254	530	U	UG/KG
AROCLOR-1260	530	U	UG/KG
BETA-BHC	84	U	UG/KG
CHLORDANE	1060	U	UG/KG
DELTA-BHC	84.7	U	UG/KG
DIELDRIN	169	U	UG/KG
ENDOSULFAN I	84.7	U	UG/KG
ENDOSULFAN II	169	U	UG/KG
ENDOSULFAN SULFATE	169	U	UG/KG
ENDRIN	169	U	UG/KG
ENDRIN ALDEHYDE	169	U	UG/KG
GAMMA-BHC (LINDANE)	84.7	U	UG/KG
HEPTACHLOR	84.7	U	UG/KG
HEPTACHLOR EPOXIDE	84.7	U	UG/KG
METHOXYCHLOR	847	U	UG/KG
METHYL PARATHION	212	U	UG/KG
PARATHION	212	U	UG/KG
PHORATE	212	U	UG/KG
TOXAPHENE	4240	U	UG/KG

Sample Number: B6SB
Sample Date: 10/4/96
Laboratory ID: 9610172-09
QC Type: NORMAL
% Moisture: 25
Location: B6SB

	RESULT	QUAL	UNITS
2,4,5-T	2.6	U	UG/KG
2,4,5-TP (SILVEX)	2.6	U	UG/KG
2,4-D	2.6	U	UG/KG
4,4'-DDD	2		UG/KG
4,4'-DDE	1.8	U	UG/KG
4,4'-DDT	2.1		UG/KG
ALDRIN	0.88	U	UG/KG
ALPHA-BHC	0.88	U	UG/KG
AROCLOR-1016	5.5	U	UG/KG
AROCLOR-1221	5.5	U	UG/KG
AROCLOR-1232	5.5	U	UG/KG
AROCLOR-1242	5.5	U	UG/KG
AROCLOR-1248	5.5	U	UG/KG
AROCLOR-1254	5.5	U	UG/KG
AROCLOR-1260	5.5	U	UG/KG
BETA-BHC	0.88	U	UG/KG
CHLORDANE	11	U	UG/KG
DELTA-BHC	0.88	U	UG/KG
DIELDRIN	1.8	U	UG/KG
ENDOSULFAN I	3.5	J	UG/KG
ENDOSULFAN II	1.8	U	UG/KG
ENDOSULFAN SULFATE	1.8	U	UG/KG
ENDRIN	1.2	J	UG/KG
ENDRIN ALDEHYDE	1.8	U	UG/KG
GAMMA-BHC (LINDANE)	0.88	U	UG/KG
HEPTACHLOR	0.88	U	UG/KG
HEPTACHLOR EPOXIDE	0.88	U	UG/KG
METHOXYCHLOR	13.2		UG/KG
METHYL PARATHION	2.2	U	UG/KG
PARATHION	2.2	U	UG/KG
PHORATE	2.2	U	UG/KG
TOXAPHENE	41	U	UG/KG

Sample Number: B6SS
Sample Date: 10/5/96
Laboratory ID: 9610172-12
QC Type: NORMAL
% Moisture: 61
Location: B6SS

	RESULT	QUAL	UNIT
2,4,5-T	5.1	U	UG/K
2,4,5-TP (SILVEX)	5.1	U	UG/K
2,4-D	5.1	U	UG/K
4,4'-DDD	3.9		UG/K
4,4'-DDE	3.9		UG/K
4,4'-DDT	3.7		UG/K
ALDRIN	1.7	U	UG/K
ALPHA-BHC	1.7	U	UG/K
AROCLOR-1016	10.6	U	UG/K
AROCLOR-1221	10.6	U	UG/K
AROCLOR-1232	10.6	U	UG/K
AROCLOR-1242	10.6	U	UG/K
AROCLOR-1248	10.6	U	UG/K
AROCLOR-1254	10.6	U	UG/K
AROCLOR-1260	10.6	U	UG/K
BETA-BHC	1.7	U	UG/K
CHLORDANE	21.2	U	UG/K
DELTA-BHC	2.8	J	UG/K
DIELDRIN	3.4	U	UG/K
ENDOSULFAN I	2.7	J	UG/K
ENDOSULFAN II	3.4	U	UG/K
ENDOSULFAN SULFATE	3.4	U	UG/K
ENDRIN	3.4	U	UG/K
ENDRIN ALDEHYDE	3.4	U	UG/K
GAMMA-BHC (LINDANE)	2	J	UG/K
HEPTACHLOR	1.7	U	UG/K
HEPTACHLOR EPOXIDE	1.7	U	UG/K
METHOXYCHLOR	16.9	U	UG/K
METHYL PARATHION	4.2	U	UG/K
PARATHION	4.2	U	UG/K
PHORATE	4.2	U	UG/K
TOXAPHENE	84.7	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A172S

PESTICIDES/PCBs

Sample Number: B7SB
Sample Date: 10/4/96
Laboratory ID: 9610172-10
QC Type: NORMAL
% Moisture: 16
Location: B7SB

	RESULT	QUAL	UNITS
2,4,5-T	2.4	U	UG/KG
2,4,5-TP (SILVEX)	2.4	U	UG/KG
2,4-D	2.4	U	UG/KG
4,4'-DDD	51.6		UG/KG
4,4'-DDE	195		UG/KG
4,4'-DDT	102		UG/KG
ALDRIN	7.8	U	UG/KG
ALPHA-BHC	7.8	U	UG/KG
AROCLOR-1016	49.1	U	UG/KG
AROCLOR-1221	49.1	U	UG/KG
AROCLOR-1232	49.1	U	UG/KG
AROCLOR-1242	49.1	U	UG/KG
AROCLOR-1248	49.1	U	UG/KG
AROCLOR-1254	49.1	U	UG/KG
AROCLOR-1260	49.1	U	UG/KG
BETA-BHC	7.8	U	UG/KG
CHLORDANE	98.2	U	UG/KG
DELTA-BHC	7.8	U	UG/KG
DIELDRIN	15.7	U	UG/KG
ENDOSULFAN I	19.9		UG/KG
ENDOSULFAN II	15.7	U	UG/KG
ENDOSULFAN SULFATE	15.7	U	UG/KG
ENDRIN	15.7	U	UG/KG
ENDRIN ALDEHYDE	15.7	U	UG/KG
GAMMA-BHC (LINDANE)	7.8	U	UG/KG
HEPTACHLOR	7.8	U	UG/KG
HEPTACHLOR EPOXIDE	7.8	U	UG/KG
METHOXYCHLOR	78.6	U	UG/KG
METHYL PARATHION	19.6	U	UG/KG
PARATHION	19.6	U	UG/KG
PHORATE	19.6	U	UG/KG
TOXAPHENE	393	U	UG/KG

Sample Number: B8SB
Sample Date: 10/4/96
Laboratory ID: 9610172-02
QC Type: NORMAL
% Moisture: 18
Location: B8SB

	RESULT	QUAL	UNITS
2,4,5-T	2.4	U	UG/KG
2,4,5-TP (SILVEX)	2.4	U	UG/KG
2,4-D	2.4	U	UG/KG
4,4'-DDD	1.6	U	UG/KG
4,4'-DDE	1.8		UG/KG
4,4'-DDT	1.8		UG/KG
ALDRIN	0.81	U	UG/KG
ALPHA-BHC	0.81	U	UG/KG
AROCLOR-1016	5	U	UG/KG
AROCLOR-1221	5	U	UG/KG
AROCLOR-1232	5	U	UG/KG
AROCLOR-1242	5	U	UG/KG
AROCLOR-1248	5	U	UG/KG
AROCLOR-1254	5	U	UG/KG
AROCLOR-1260	5	U	UG/KG
BETA-BHC	0.81	U	UG/KG
CHLORDANE	10.1	U	UG/KG
DELTA-BHC	0.81	U	UG/KG
DIELDRIN	1.6	U	UG/KG
ENDOSULFAN I	1		UG/KG
ENDOSULFAN II	1.6	U	UG/KG
ENDOSULFAN SULFATE	1.6	U	UG/KG
ENDRIN	1.6	U	UG/KG
ENDRIN ALDEHYDE	1.6	U	UG/KG
GAMMA-BHC (LINDANE)	0.81	U	UG/KG
HEPTACHLOR	0.81	U	UG/KG
HEPTACHLOR EPOXIDE	0.81	U	UG/KG
METHOXYCHLOR	8.1	U	UG/KG
METHYL PARATHION	2	U	UG/KG
PARATHION	2	U	UG/KG
PHORATE	2	U	UG/KG
TOXAPHENE	40.4	U	UG/KG

Sample Number: B8SS
Sample Date: 10/4/96
Laboratory ID: 9610172-01
QC Type: NORMAL
% Moisture: 30
Location: B8SS

	RESULT	QUAL	UNIT
2,4,5-T	28.4	U	UG/K
2,4,5-TP (SILVEX)	28.4	U	UG/K
2,4-D	28.4	U	UG/K
4,4'-DDD	1.9	U	UG/K
4,4'-DDE	1.9	U	UG/K
4,4'-DDT	1.9	U	UG/K
ALDRIN	0.93	U	UG/K
ALPHA-BHC	0.93	U	UG/K
AROCLOR-1016	5.8	U	UG/K
AROCLOR-1221	5.8	U	UG/K
AROCLOR-1232	5.8	U	UG/K
AROCLOR-1242	5.8	U	UG/K
AROCLOR-1248	5.8	U	UG/K
AROCLOR-1254	5.8	U	UG/K
AROCLOR-1260	5.8	U	UG/K
BETA-BHC	0.93	U	UG/K
CHLORDANE	11.6	U	UG/K
DELTA-BHC	0.93	U	UG/K
DIELDRIN	1.9	U	UG/K
ENDOSULFAN I	1.6	J	UG/K
ENDOSULFAN II	1.9	U	UG/K
ENDOSULFAN SULFATE	1.9	U	UG/K
ENDRIN	1.4	J	UG/K
ENDRIN ALDEHYDE	1.9	U	UG/K
GAMMA-BHC (LINDANE)	0.93	U	UG/K
HEPTACHLOR	0.93	U	UG/K
HEPTACHLOR EPOXIDE	0.93	U	UG/K
METHOXYCHLOR	9.3	U	UG/K
METHYL PARATHION	2.3	U	UG/K
PARATHION	2.3	U	UG/K
PHORATE	2.3	U	UG/K
TOXAPHENE	46.6	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A172S

PESTICIDES/PCBs

Sample Number: S4SB-2
Sample Date: 10/4/96
Laboratory ID: 9610172-08
QC Type: NORMAL
% Moisture: 12
Location: S4SB-2

	RESULT	QUAL	UNITS
2,4,5-T	2.3	U	UG/KG
2,4,5-TP (SILVEX)	2.3	U	UG/KG
2,4-D	2.3	U	UG/KG
4,4'-DDD	1.5	U	UG/KG
4,4'-DDE	1.5	U	UG/KG
4,4'-DDT	1.5	U	UG/KG
ALDRIN	0.76	U	UG/KG
ALPHA-BHC	0.76	U	UG/KG
AROCLOR-1016	4.7	U	UG/KG
AROCLOR-1221	4.7	U	UG/KG
AROCLOR-1232	4.7	U	UG/KG
AROCLOR-1242	4.7	U	UG/KG
AROCLOR-1248	4.7	U	UG/KG
AROCLOR-1254	4.7	U	UG/KG
AROCLOR-1260	4.7	U	UG/KG
BETA-BHC	0.76	U	UG/KG
CHLORDANE	9.5	U	UG/KG
DELTA-BHC	0.76	U	UG/KG
DIELDRIN	1.5	U	UG/KG
ENDOSULFAN I	1.4	J	UG/KG
ENDOSULFAN II	1.5	U	UG/KG
ENDOSULFAN SULFATE	1.5	U	UG/KG
ENDRIN	1.5	U	UG/KG
ENDRIN ALDEHYDE	1.5	U	UG/KG
GAMMA-BHC (LINDANE)	0.76	U	UG/KG
HEPTACHLOR	0.76	U	UG/KG
HEPTACHLOR EPOXIDE	0.76	U	UG/KG
METHOXYCHLOR	7.6	U	UG/KG
METHYL PARATHION	1.9	U	UG/KG
PARATHION	1.9	U	UG/KG
PHORATE	1.9	U	UG/KG
TOXAPHENE	37.8	U	UG/KG

Sample Number: S7DPSB
Sample Date: 10/4/96
Laboratory ID: 9610172-06
QC Type: NORMAL
% Moisture: 31
Location: S7DPSB

	RESULT	QUAL	UNITS
2,4,5-T	6.7		UG/KG
2,4,5-TP (SILVEX)	6.5		UG/KG
2,4-D	2.9	U	UG/KG
4,4'-DDD	38.5	U	UG/KG
4,4'-DDE	38.5	U	UG/KG
4,4'-DDT	38.5	U	UG/KG
ALDRIN	19.2	U	UG/KG
ALPHA-BHC	21.9		UG/KG
AROCLOR-1016	120	U	UG/KG
AROCLOR-1221	120	U	UG/KG
AROCLOR-1232	120	U	UG/KG
AROCLOR-1242	120	U	UG/KG
AROCLOR-1248	120	U	UG/KG
AROCLOR-1254	120	U	UG/KG
AROCLOR-1260	120	U	UG/KG
BETA-BHC	19.2	U	UG/KG
CHLORDANE	240	U	UG/KG
DELTA-BHC	19.2	U	UG/KG
DIELDRIN	38.5	U	UG/KG
ENDOSULFAN I	19.2	U	UG/KG
ENDOSULFAN II	38.5	U	UG/KG
ENDOSULFAN SULFATE	38.5	U	UG/KG
ENDRIN	38.5	U	UG/KG
ENDRIN ALDEHYDE	38.5	U	UG/KG
GAMMA-BHC (LINDANE)	19.2	U	UG/KG
HEPTACHLOR	19.2	U	UG/KG
HEPTACHLOR EPOXIDE	19.2	U	UG/KG
METHOXYCHLOR	192	U	UG/KG
METHYL PARATHION	48.1	U	UG/KG
PARATHION	48.1	U	UG/KG
PHORATE	48.1	U	UG/KG
TOXAPHENE	962	U	UG/KG

Sample Number: S7SB-21
Sample Date: 10/4/96
Laboratory ID: 9610172-05
QC Type: NORMAL
% Moisture: 23
Location: S7SB-21

	RESULT	QUAL	UNIT
2,4,5-T	2.6	U	UG/K
2,4,5-TP (SILVEX)	2.6	U	UG/K
2,4-D	2.6	U	UG/K
4,4'-DDD	2.7		UG/K
4,4'-DDE	4		UG/K
4,4'-DDT	2.1	J	UG/K
ALDRIN	0.86	U	UG/K
ALPHA-BHC	0.86	U	UG/K
AROCLOR-1016	5.4	U	UG/K
AROCLOR-1221	5.4	U	UG/K
AROCLOR-1232	5.4	U	UG/K
AROCLOR-1242	5.4	U	UG/K
AROCLOR-1248	5.4	U	UG/K
AROCLOR-1254	5.4	U	UG/K
AROCLOR-1260	5.4	U	UG/K
BETA-BHC	0.86	U	UG/K
CHLORDANE	10.8	U	UG/K
DELTA-BHC	0.86	U	UG/K
DIELDRIN	1.7	U	UG/K
ENDOSULFAN I	2.3	J	UG/K
ENDOSULFAN II	1.2	J	UG/K
ENDOSULFAN SULFATE	1.7	U	UG/K
ENDRIN	1.7	U	UG/K
ENDRIN ALDEHYDE	2.5	J	UG/K
GAMMA-BHC (LINDANE)	0.86	U	UG/K
HEPTACHLOR	2.8		UG/K
HEPTACHLOR EPOXIDE	0.89		UG/K
METHOXYCHLOR	8.6	U	UG/K
METHYL PARATHION	2.2	U	UG/K
PARATHION	2.2	U	UG/K
PHORATE	2.2	U	UG/K
TOXAPHENE	43.1	U	UG/K

CTO 007 - KEY WEST
GENERAL ENGINEERING LABS

SDG: 6A172S

PESTICIDES/PCBs

Sample Number: S7SB-22
Sample Date: 10/4/96
Laboratory ID: 9610172-07
QC Type: NORMAL
% Moisture: 36
Location: S7SB-22

	RESULT	QUAL	UNITS
2,4,5-T	3.1	U	UG/KG
2,4,5-TP (SILVEX)	3.1	U	UG/KG
2,4-D	3.1	U	UG/KG
4,4'-DDD	15.4		UG/KG
4,4'-DDE	20.1		UG/KG
4,4'-DDT	21.6		UG/KG
ALDRIN	5.1	U	UG/KG
ALPHA-BHC	5.1	U	UG/KG
AROCLOR-1016	32.1	U	UG/KG
AROCLOR-1221	32.1	U	UG/KG
AROCLOR-1232	32.1	U	UG/KG
AROCLOR-1242	32.1	U	UG/KG
AROCLOR-1248	32.1	U	UG/KG
AROCLOR-1254	32.1	U	UG/KG
AROCLOR-1260	32.1	U	UG/KG
BETA-BHC	5.1	U	UG/KG
CHLORDANE	64.1	U	UG/KG
DELTA-BHC	5.1	U	UG/KG
DIELDRIN	10.2	U	UG/KG
ENDOSULFAN I	5.9		UG/KG
ENDOSULFAN II	10.2	U	UG/KG
ENDOSULFAN SULFATE	10.2	U	UG/KG
ENDRIN	7.1	J	UG/KG
ENDRIN ALDEHYDE	10.2	U	UG/KG
GAMMA-BHC (LINDANE)	5.1	U	UG/KG
HEPTACHLOR	5.1	U	UG/KG
HEPTACHLOR EPOXIDE	5.1	U	UG/KG
METHOXYCHLOR	51.3	U	UG/KG
METHYL PARATHION	12.8	U	UG/KG
PARATHION	12.8	U	UG/KG
PHORATE	12.8	U	UG/KG
TOXAPHENE	256	U	UG/KG

Sample Number: S7SB-23
Sample Date: 10/4/96
Laboratory ID: 9610172-04
QC Type: NORMAL
% Moisture: 34
Location: S7SB-23

	RESULT	QUAL	UNITS
2,4,5-T	7.2		UG/KG
2,4,5-TP (SILVEX)	3	U	UG/KG
2,4-D	13.4		UG/KG
4,4'-DDD	45.1		UG/KG
4,4'-DDE	44.2	J	UG/KG
4,4'-DDT	32.2	J	UG/KG
ALDRIN	20.1	U	UG/KG
ALPHA-BHC	21.3		UG/KG
AROCLOR-1016	126	U	UG/KG
AROCLOR-1221	126	U	UG/KG
AROCLOR-1232	126	U	UG/KG
AROCLOR-1242	126	U	UG/KG
AROCLOR-1248	126	U	UG/KG
AROCLOR-1254	126	U	UG/KG
AROCLOR-1260	126	U	UG/KG
BETA-BHC	20.1	U	UG/KG
CHLORDANE	252	U	UG/KG
DELTA-BHC	20.1	U	UG/KG
DIELDRIN	40.2	U	UG/KG
ENDOSULFAN I	20.1	J	UG/KG
ENDOSULFAN II	40.2	U	UG/KG
ENDOSULFAN SULFATE	40.2	U	UG/KG
ENDRIN	28.3	J	UG/KG
ENDRIN ALDEHYDE	40.2	U	UG/KG
GAMMA-BHC (LINDANE)	20.1	U	UG/KG
HEPTACHLOR	20.1	U	UG/KG
HEPTACHLOR EPOXIDE	20.1	U	UG/KG
METHOXYCHLOR	201	U	UG/KG
METHYL PARATHION	50.3	U	UG/KG
PARATHION	50.3	U	UG/KG
PHORATE	50.3	U	UG/KG
TOXAPHENE	1010	U	UG/KG

Sample Number: S7SB-24
Sample Date: 10/4/96
Laboratory ID: 9610172-03
QC Type: NORMAL
% Moisture: 21
Location: S7SB-24

	RESULT	QUAL	UNIT
2,4,5-T	25	U	UG/K
2,4,5-TP (SILVEX)	25	U	UG/K
2,4-D	25	U	UG/K
4,4'-DDD	11.5		UG/K
4,4'-DDE	23.3		UG/K
4,4'-DDT	9.3	J	UG/K
ALDRIN	4.2	U	UG/K
ALPHA-BHC	4.2	U	UG/K
AROCLOR-1016	26.2	U	UG/K
AROCLOR-1221	26.2	U	UG/K
AROCLOR-1232	26.2	U	UG/K
AROCLOR-1242	26.2	U	UG/K
AROCLOR-1248	26.2	U	UG/K
AROCLOR-1254	26.2	U	UG/K
AROCLOR-1260	26.2	U	UG/K
BETA-BHC	4.2	U	UG/K
CHLORDANE	52.5	U	UG/K
DELTA-BHC	4.2	U	UG/K
DIELDRIN	8.4	U	UG/K
ENDOSULFAN I	4.2	U	UG/K
ENDOSULFAN II	8.4	U	UG/K
ENDOSULFAN SULFATE	8.4	U	UG/K
ENDRIN	8.4	U	UG/K
ENDRIN ALDEHYDE	8.4	U	UG/K
GAMMA-BHC (LINDANE)	4.2	U	UG/K
HEPTACHLOR	4.2	U	UG/K
HEPTACHLOR EPOXIDE	4.2	U	UG/K
METHOXYCHLOR	42	U	UG/K
METHYL PARATHION	10.5	U	UG/K
PARATHION	10.5	U	UG/K
PHORATE	10.5	U	UG/K
TOXAPHENE	210	U	UG/K

INORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 17, 1997**
FROM:	**TERESA M. HUDSON**	**COPIES:**	**DV FILE**
SUBJECT:	**INORGANIC DATA REVIEW – TAL METALS** **CTO 007 – KEY WEST, FLORIDA** **SDG – BR001**		

SAMPLES: 20/TISSUE/

S4F-1	S4F-6	S4F-11	S4F-16
S4F-2	S4F-7	S4F-12	S4F-17
S4F-3	S4F-8	S4F-13	S4F-18
S4F-4	S4F-9	S4F-14	S4F-19
S4F-5	S4F-10	S4F-15	S4F-20

Introduction

A data review was performed on the inorganic analytical data from CTO 007, NAS Key West, SDG No.BR001. Twenty (20) tissue samples were included for TAL metals. No field duplicates were included within this SDG.

All samples were analyzed for Target Analyte List (TAL) metals. The samples were collected by Brown & Root Environmental on August 29, 1996 and analyzed by Savannah Laboratories and Environmental Services, Inc. under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- Calibration Verifications
- * Laboratory Blank Analyses
- Matrix Spike Results

* Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/preparation/field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level (soil)
aluminum	22.1 ug/L	22.1 MG/KG
arsenic	3.5 ug/L	3.5 MG/KG
barium	1.6 ug/L	1.6 MG/KG
cadmium	2.9 ug/L	2.9 MG/KG
calcium	24.2 ug/L	24.2 MG/KG
cobalt	2.9 ug/L	2.9 MG/KG
copper	7.6 ug/L	7.6 MG/KG
iron	26.2 ug/L	26.2 MG/KG
lead	1.9 ug/L	1.9 MG/KG
magnesium	28.5 ug/L	28.5 MG/KG
manganese	1.3 ug/L	1.3 MG/KG
mercury[1]	0.019 MG/KG	0.095 MG/KG
silver	1.5 ug/L	1.5 MG/KG
sodium	51.3 ug/L	51.3 MG/KG
zinc	2.4 ug/L	2.4 MG/KG

Samples affected: All.

[1] Maximum concentration found in a soil preparation blank.

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for aluminum, arsenic, barium, cadmium, copper, iron, lead, mercury, and silver have been qualified as nondetected "U." No action was taken for the remaining analytes since the results were either positive and greater than the action level or nondetect.

Notes

It was noted that all samples met the contract holding time limit criteria of six (6) months.

It was noted that lead exceeded the quality control limits for Contract Required Detection Limit (CRDL) Percent Recoveries (R%). However, no validation actions were taken for CRDL R%.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method blank.

Other Factors Affecting Data Quality: None.

No other problems were encountered in this case.

The data for these analyses were reviewed in accordance with the "National Functional Guidelines for Inorganic Review," February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Teresa M Hudson

Brown & Root Environmental
Teresa M. Hudson
Environmental Scientist/Data Validator

Julia F Bradley for

Brown & Root Environmental
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

KEY WEST
SDG – BR001

TABLE 1 – RECOMMENDATION SUMMARY

Aluminum	A[1]	Magnesium	
Antimony		Manganese	
Arsenic	A[1]	Mercury	A[1]
Barium	A[1]	Nickel	
Beryllium		Potassium	
Cadmium	A[1]	Selenium	
Calcium		Silver	A[1]
Chromium		Sodium	
Cobalt		Thallium	
Copper	A[1]	Vanadiu	
Iron	A[1]	Zinc	
Lead	A[1]		

If the field is left blank, the qualifier is A - Accept all data.

A[1] Accept data but qualify positive results < Action Level as nondetected, "U," as a result of laboratory blank contamination.

APPENDIX A
Qualified Analytical Results

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR001

INORGANICS

Sample Number: S4F-1
Sample Date: 8/29/96
Laboratory ID: S685150-1
QC Type: CS
% Moisture: 0
Location: S4F-1

	RESULT	QUAL	UNITS
Aluminum	8.5	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.45	U	mg/kg
Barium	1.7		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.7	U	mg/kg
Calcium	13300		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	28.1		mg/kg
Iron	50.8		mg/kg
Lead	2.3		mg/kg
Magnesium	481		mg/kg
Manganese	3.3		mg/kg
Mercury	0.04	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2590		mg/kg
Selenium	1	U	mg/kg
Silver	0.4	U	mg/kg
Sodium	1520		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	45.3		mg/kg

Sample Number: S4F-10
Sample Date: 8/24/96
Laboratory ID: S685150-10
QC Type: CS
% Moisture: 0
Location: S4F-10

	RESULT	QUAL	UNITS
Aluminum	5.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.45	U	mg/kg
Barium	1.6	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.85	U	mg/kg
Calcium	16200		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	15.9		mg/kg
Iron	36.7		mg/kg
Lead	2.7		mg/kg
Magnesium	527		mg/kg
Manganese	3.3		mg/kg
Mercury	0.04	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2800		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1750		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	44.1		mg/kg

Sample Number: S4F-11
Sample Date: 8/24/96
Laboratory ID: S685150-11
QC Type: CS
% Moisture: 0
Location: S4F-11

	RESULT	QUAL	UN
Aluminum	9.6	U	mg
Antimony	2.4	U	mg
Arsenic	0.45	U	mg
Barium	2.2		mg
Beryllium	0.04	U	mg
Cadmium	0.53	U	mg
Calcium	18900		mg
Chromium	0.82	U	mg
Cobalt	0.37	U	mg
Copper	17.5		mg
Iron	43.2		mg
Lead	2.8		mg
Magnesium	567		mg
Manganese	3.9		mg
Mercury	0.03	U	mg
Nickel	0.85	U	mg
Potassium	2770		mg/
Selenium	1	U	mg/
Silver	0.23	U	mg/
Sodium	1660		mg/
Thallium	0.81	U	mg/
Vanadium	0.45	U	mg/
Zinc	39.9		mg/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR001

INORGANICS

Sample Number: S4F-12
Sample Date: 8/25/96
Laboratory ID: S685150-12
QC Type: CS
% Moisture: 0
Location: S4F-12

	RESULT	QUAL	UNITS
Aluminum	7.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.45	U	mg/kg
Barium	2		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	18000		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	21.3		mg/kg
Iron	38.8		mg/kg
Lead	2.6		mg/kg
Magnesium	531		mg/kg
Manganese	3.8		mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2770		mg/kg
Selenium	1	U	mg/kg
Silver	0.37	U	mg/kg
Sodium	1700		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	56.8		mg/kg

Sample Number: S4F-13
Sample Date: 8/25/96
Laboratory ID: S685150-13
QC Type: CS
% Moisture: 0
Location: S4F-13

	RESULT	QUAL	UNITS
Aluminum	9.3	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.45	U	mg/kg
Barium	1.4	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	12100		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	15.7		mg/kg
Iron	44		mg/kg
Lead	1.8	U	mg/kg
Magnesium	455		mg/kg
Manganese	2.6		mg/kg
Mercury	0.03	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2670		mg/kg
Selenium	1	U	mg/kg
Silver	0.4	U	mg/kg
Sodium	1520		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	57.5		mg/kg

Sample Number: S4F-14
Sample Date: 8/25/96
Laboratory ID: S685150-14
QC Type: CS
% Moisture: 0
Location: S4F-14

	RESULT	QUAL	UN
Aluminum	1.7	U	mg
Antimony	2.4	U	mg
Arsenic	0.56	U	mg
Barium	0.46	U	mg
Beryllium	0.04	U	mg
Cadmium	0.53	U	mg
Calcium	13800		mg
Chromium	0.82	U	mg
Cobalt	0.37	U	mg
Copper	1.8	U	mg
Iron	18.8	U	mg
Lead	0.41	U	mg
Magnesium	515		mg
Manganese	3.7		mg/
Mercury	0.05	U	mg/
Nickel	0.85	U	mg/
Potassium	3080		mg/
Selenium	1	U	mg/
Silver	0.23	U	mg/
Sodium	1510		mg/
Thallium	0.81	U	mg/
Vanadium	0.45	U	mg/
Zinc	72.8		mg/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR001

INORGANICS

Sample Number: S4F-15
Sample Date: 8/29/96
Laboratory ID: S685150-15
QC Type: CS
% Moisture: 0
Location: S4F-15

	RESULT	QUAL	UNITS
Aluminum	4.2	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.74	U	mg/kg
Barium	0.61	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	18800		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	2.8	U	mg/kg
Iron	23.1	U	mg/kg
Lead	0.69	U	mg/kg
Magnesium	622		mg/kg
Manganese	5.2		mg/kg
Mercury	0.07	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2890		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1530		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	87.5		mg/kg

Sample Number: S4F-16
Sample Date: 8/29/96
Laboratory ID: S685150-16
QC Type: CS
% Moisture: 0
Location: S4F-16

	RESULT	QUAL	UNITS
Aluminum	12.2	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.49	U	mg/kg
Barium	1.8		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	16600		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	14.4		mg/kg
Iron	37.6		mg/kg
Lead	2.9		mg/kg
Magnesium	535		mg/kg
Manganese	3.4		mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2870		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1690		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	44		mg/kg

Sample Number: S4F-17
Sample Date: 8/26/96
Laboratory ID: S685150-17
QC Type: CS
% Moisture: 0
Location: S4F-17

	RESULT	QUAL	UN
Aluminum	13.5	U	mg
Antimony	2.4	U	mg
Arsenic	0.45	U	mg
Barium	1.9		mg
Beryllium	0.04	U	mg
Cadmium	0.53	U	mg
Calcium	18100		mg
Chromium	0.82	U	mg
Cobalt	0.37	U	mg
Copper	16.2		mg
Iron	42.6		mg
Lead	2.4		mg
Magnesium	531		mg
Manganese	4		mg
Mercury	0.02	U	mg
Nickel	0.85	U	mg
Potassium	2630		mg
Selenium	1	U	mg
Silver	0.23	U	mg
Sodium	1610		mg
Thallium	0.81	U	mg
Vanadium	0.45	U	mg
Zinc	55		mg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR001

INORGANICS

Sample Number: S4F-18
Sample Date: 8/29/96
Laboratory ID: S685150-18
QC Type: CS
% Moisture: 0
Location: S4F-18

	RESULT	QUAL	UNITS
Aluminum	7.8	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.45	U	mg/kg
Barium	1.4	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	15200		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	18.9		mg/kg
Iron	46.9		mg/kg
Lead	2.3		mg/kg
Magnesium	476		mg/kg
Manganese	2.6		mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2870		mg/kg
Selenium	1	U	mg/kg
Silver	0.28	U	mg/kg
Sodium	1630		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	56.1		mg/kg

Sample Number: S4F-19
Sample Date: 8/29/96
Laboratory ID: S685150-19
QC Type: CS
% Moisture: 0
Location: S4F-19

	RESULT	QUAL	UNITS
Aluminum	6	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.56	U	mg/kg
Barium	1.9		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	11900		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	6.5	U	mg/kg
Iron	37		mg/kg
Lead	1.2	U	mg/kg
Magnesium	443		mg/kg
Manganese	4.2		mg/kg
Mercury	0.04	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2850		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1500		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	87.8		mg/kg

Sample Number: S4F-2
Sample Date: 8/29/96
Laboratory ID: S685150-2
QC Type: CS
% Moisture: 0
Location: S4F-2

	RESULT	QUAL	UN
Aluminum	10.9	U	mg
Antimony	2.4	U	mg
Arsenic	0.45	U	mg
Barium	1.9		mg
Beryllium	0.04	U	mg
Cadmium	0.53	U	mg
Calcium	16700		mg
Chromium	0.82	U	mg
Cobalt	0.37	U	mg
Copper	21.9		mg
Iron	44.3		mg
Lead	2.8		mg
Magnesium	519		mg
Manganese	3.2		mg
Mercury	0.03	U	mg
Nickel	0.85	U	mg
Potassium	2520		mg
Selenium	1	U	mg
Silver	0.27	U	mg
Sodium	1630		mg
Thallium	0.81	U	mg
Vanadium	0.45	U	mg
Zinc	36.2		mg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR001

INORGANICS

Sample Number: S4F-20
Sample Date: 8/29/96
Laboratory ID: S685150-20
QC Type: CS
% Moisture: 0
Location: S4F-20

	RESULT	QUAL	UNITS
Aluminum	2.2	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.59	U	mg/kg
Barium	0.4	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	16700		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	1.9	U	mg/kg
Iron	20.4	U	mg/kg
Lead	0.5	U	mg/kg
Magnesium	526		mg/kg
Manganese	3.6		mg/kg
Mercury	0.08	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2900		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1480		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	68		mg/kg

Sample Number: S4F-3
Sample Date: 8/29/96
Laboratory ID: S685150-3
QC Type: CS
% Moisture: 0
Location: S4F-3

	RESULT	QUAL	UNITS
Aluminum	1.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.45	U	mg/kg
Barium	0.36	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	13400		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	1.5	U	mg/kg
Iron	13.8	U	mg/kg
Lead	0.69	U	mg/kg
Magnesium	536		mg/kg
Manganese	3.3		mg/kg
Mercury	0.04	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	3170		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1510		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	60.7		mg/kg

Sample Number: S4F-4
Sample Date: 8/29/96
Laboratory ID: S685150-4
QC Type: CS
% Moisture: 0
Location: S4F-4

	RESULT	QUAL	UN
Aluminum	2.5	U	mg
Antimony	2.4	U	mg
Arsenic	0.45	U	mg
Barium	0.58	U	mg
Beryllium	0.04	U	mg
Cadmium	0.53	U	mg
Calcium	22700		mg
Chromium	0.82	U	mg
Cobalt	0.37	U	mg
Copper	1.9	U	mg
Iron	21	U	mg
Lead	0.74	U	mg
Magnesium	691		mg
Manganese	5.5		mg
Mercury	0.06	U	mg
Nickel	0.85	U	mg
Potassium	3340		mg
Selenium	1	U	mg
Silver	0.23	U	mg
Sodium	1620		mg
Thallium	0.81	U	mg
Vanadium	0.45	U	mg
Zinc	109		mg

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SAVANNAH LABORATORIES

SDG: BR001

INORGANICS

Sample Number: S4F-5
Sample Date: 8/29/96
Laboratory ID: S685150-5
QC Type: CS
% Moisture: 0
Location: S4F-5

	RESULT	QUAL	UNITS
Aluminum	4.2	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.45	U	mg/kg
Barium	1.7		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	12000		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	5.2	U	mg/kg
Iron	29.2		mg/kg
Lead	1.1	U	mg/kg
Magnesium	446		mg/kg
Manganese	4.3		mg/kg
Mercury	0.06	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2630		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1600		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	32.3		mg/kg

Sample Number: S4F-6
Sample Date: 8/24/96
Laboratory ID: S685150-6
QC Type: CS
% Moisture: 0
Location: S4F-6

	RESULT	QUAL	UNITS
Aluminum	8.9	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.45	U	mg/kg
Barium	1.6	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.56	U	mg/kg
Calcium	14800		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	18		mg/kg
Iron	53.9		mg/kg
Lead	2.2		mg/kg
Magnesium	465		mg/kg
Manganese	3		mg/kg
Mercury	0.03	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2550		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1660		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	42.7		mg/kg

Sample Number: S4F-7
Sample Date: 8/29/96
Laboratory ID: S685150-7
QC Type: CS
% Moisture: 0
Location: S4F-7

	RESULT	QUAL	UNI
Aluminum	3.4	U	mg
Antimony	2.4	U	mg
Arsenic	0.45	U	mg
Barium	1.6	U	mg
Beryllium	0.04	U	mg
Cadmium	0.53	U	mg
Calcium	14500		mg
Chromium	0.82	U	mg
Cobalt	0.37	U	mg
Copper	10.7		mg
Iron	27		mg
Lead	2.1		mg
Magnesium	437		mg
Manganese	2.9		mg
Mercury	0.03	U	mg
Nickel	0.85	U	mg
Potassium	2660		mg
Selenium	1	U	mg
Silver	0.23	U	mg
Sodium	1660		mg
Thallium	0.81	U	mg
Vanadium	0.45	U	mg
Zinc	31.3		mg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR001

INORGANICS

Sample Number: S4F-8
Sample Date: 8/29/96
Laboratory ID: S685150-8
QC Type: CS
% Moisture: 0
Location: S4F-8

	RESULT	QUAL	UNITS
Aluminum	12.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.68	U	mg/kg
Barium	2		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	20600		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	38.3		mg/kg
Iron	80.8		mg/kg
Lead	2.7		mg/kg
Magnesium	582		mg/kg
Manganese	4.9		mg/kg
Mercury	0.03	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2850		mg/kg
Selenium	1	U	mg/kg
Silver	0.37	U	mg/kg
Sodium	1830		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	51.4		mg/kg

Sample Number: S4F-9
Sample Date: 8/24/96
Laboratory ID: S685150-9
QC Type: CS
% Moisture: 0
Location: S4F-9

	RESULT	QUAL	UNITS
Aluminum	1.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.46	U	mg/kg
Barium	0.48	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	20900		mg/kg
Chromium	1.1		mg/kg
Cobalt	0.37	U	mg/kg
Copper	2	U	mg/kg
Iron	21.3	U	mg/kg
Lead	0.57	U	mg/kg
Magnesium	638		mg/kg
Manganese	5		mg/kg
Mercury	0.1		mg/kg
Nickel	0.85	U	mg/kg
Potassium	3110		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1730		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	80.6		mg/kg

ORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 28, 1997**
FROM:	**TERESA M. HUDSON**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA REVIEW – PEST/PCB ORGANICS**
CTO 007 – NAS KEY WEST, KEY WEST, FLORIDA
SDG – BR001

SAMPLES: 20/TISSUE/

S4F-1	S4F-6	S4F-11	S4F-16
S4F-2	S4F-7	S4F-12	S4F-17
S4F-3	S4F-8	S4F-13	S4F-18
S4F-4	S4F-9	S4F-14	S4F-19
S4F-5	S4F-10	S4F-15	S4F-20

The sample set for the CTO 007 NAS Key West site, SDG BR001, consists of twenty (20) tissue samples. All samples were analyzed for Target Compound List (TCL) pesticide/PCB organic compounds. The extract of sample S4F-10 for chlorinated pesticide analysis was lost during preparation and the analysis for this sample was canceled.

The samples were collected by Brown & Root Environmental on August 29, 1996 and analyzed by Savannah Laboratories & Environmental Services, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Method 8080 analytical and reporting protocols. The data was evaluated according to the following parameters:

- Holding times
- Initial and continuing calibrations
- * Laboratory and field blank analyses
- Surrogate spike recoveries
- * Compound Quantitation

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Pesticide/PCBs

The following pesticide compound was detected in the laboratory method blank at the maximum concentration indicated below:

Compound	Maximum Concentration	Action Level
Endrin	0.15 ug/Kg	0.75 ug/Kg
4,4'-DDD	0.19 ug/Kg	0.95 ug/Kg

Samples Affected: S4F-1, 2, 3, 4, 5, 7, 8, 9, 14, 15, 18, 19, and 20.

Percent moisture, sample aliquot size, and dilution factors were considered prior to the application of the action level. Positive results in the affected samples for these compounds reported at concentrations below the detection limit were replaced with revised detection limits. Positive results below the detection limit and above the action level were qualified estimated, "J." Positive results below the action level were qualified nondetect, "U."

The laboratory qualifier "P" was removed from all target compound data with a %D above 25% and less than 100% between positive results on columns 1 and 2. The affected target compounds and samples are listed in the table below.

SAMPLE	AFFECTED COMPOUNDS
S4F-1	Delta-BHC, 4,4'-DDT, Methoxychlor, Chlorobenzilate
S4F-3	Endrin aldehyde, Chlorobenzilate
S4F-4	4,4'-DDE, 4,4'-DDT, Chlorobenzilate
S4F-5	Heptachlor, Chlorobenzilate
S4F-6	Aldrin, Dieldrin, Endosulfan II, Methoxychlor
S4F-8	Aldrin, Endosulfan I
S4F-9	Delta-BHC, Dieldrin, 4,4'-DDT
S4F-11	Delta-BHC
S4F-12	Endosulfan II, Methoxychlor
S4F-13	Methoxychlor
S4F-14	Beta-BHC, 4,4'-DDE
S4F-15	Dieldrin, 4,4'-DDT
S4F-17	Methoxychlor
S4F-18	Aldrin
S4F-19	Endosulfan II
S4F-20	4,4'-DDE, Chlorobenzilate

The laboratory qualifier "P" was removed from the target compound data for those compounds with a %D between columns 1 and 2 greater than 100%. Positive hits were estimated "J". The affected samples and target compounds are listed in the table below.

SAMPLE	AFFECTED COMPOUNDS
S4F-1	Beta-BHC, Heptachlor, Dieldrin, 4,4'-DDE, Endosulfan sulfate, Endrin aldehyde, Isodrin
S4F-2	Beta-BHC, 4,4'-DDE, Endosulfan sulfate, Endrin aldehyde, Chlorobenzilate, Isodrin
S4F-3	Beta-BHC, Delta-BHC, Dieldrin, 4,4'-DDE, 4,4'-DDT, Methoxychlor
S4F-4	Beta-BHC, Delta-BHC, Dieldrin, Endosulfan II
S4F-5	Aldrin, Endosulfan I, Dieldrin, 4,4'-DDE, Endosulfan II, Endosulfan sulfate, Endrin aldehyde
S4F-6	Beta-BHC, Delta-BHC, Gamma-BHC (lindane), 4,4'-DDE, 4,4'-DDT, Endrin aldehyde

SAMPLE	AFFECTED COMPOUNDS
S4F-7	Beta-BHC, Delta-BHC, Aldrin, Dieldrin, 4,4'-DDE, Endosulfan II, Endrin aldehyde, Chlorobenzilate
S4F-8	Beta-BHC, Delta-BHC, Dieldrin, 4,4'-DDE, Endosulfan II, 4,4'-DDT, Endrin aldehyde
S4F-9	Beta-BHC, Gamma-BHC (lindane), 4,4'-DDE, Endosulfan II, Endosulfan sulfate, Endrin aldehyde
S4F-11	Beta-BHC, Gamma-BHC (lindane), Endosulfan I, 4,4'-DDE, Endosulfan sulfate, Endrin aldehyde, Isodrin
S4F-12	Beta-BHC, Aldrin, Dieldrin, 4,4'-DDE, 4,4'-DDT, Endrin aldehyde
S4F-13	Delta-BHC, Heptachlor, Aldrin, Dieldrin, 4,4'-DDE, Endosulfan II, Endrin aldehyde
S4F-14	Delta-BHC, Endosulfan I, Endosulfan sulfate, Endrin aldehyde, Isodrin
S4F-15	Beta-BHC, Delta-BHC, 4,4'-DDE, Endosulfan II, Endosulfan sulfate, Endrin aldehyde, Isodrin
S4F-16	Aldrin, Endosulfan I, 4,4'-DDE, Methoxychlor, Chlorobenzilate
S4F-17	Delta-BHC, Aldrin, Endosulfan I, Dieldrin, 4,4'-DDE, Endrin aldehyde
S4F-18	Beta-BHC, Endosulfan I, 4,4'-DDE, Endrin aldehyde, Isodrin
S4F-19	Delta-BHC, Gamma-BHC (lindane), Methoxychlor, Endrin aldehyde, Chlorobenzilate, Aldrin
S4F-20	Beta-BHC, Delta-BHC, Heptachlor, Aldrin, Dieldrin, Endosulfan II, Endosulfan sulfate, Methoxychlor, Isodrin

Due to coelution matrix interference on one of the GC columns, confirmation of Endosulfan I in samples S4F-1, -2, -6, and -13 was not feasible. Thus, the Endosulfan I concentrations reported for these samples are based on a single column. The laboratory qualifier "X" was removed and the estimated "J" was left to indicate estimated concentrations.

Due to coeluting matrix interference on one of the GC columns, confirmation of Endosulfan sulfate in S4F-6, -7, -8, -12, -13, -16, -17, and -18 was not feasible. Thus, the Endosulfan sulfate concentrations reported for these samples are based on a single column. The laboratory qualifier "X" was removed and the estimated "J" was left to indicate an estimated concentration.

Due to coeluting matrix interference on one of the GC columns, confirmation of 4,4'-DDT in S4F-13, -16, -17, and -18 was not feasible. Thus, the 4,4'-DDT concentrations reported for these samples are based on a single column. The laboratory qualifier "X" was removed and it was estimated "J" to indicate an estimated concentration.

Continuing Calibration Verifications (CCV) %D exceeded 25% for Endrin aldehyde, Heptachlor epoxide, Methoxychlor, 4,4'-DDE, Endrin, Endosulfan sulfate, and Aroclor 1260. However, no actions were taken for CCV %D.

High %Ds between positive results in columns 1 and 2 were reported for Endrin and 4,4'-DDD in some samples, however no action was taken to qualify where this data was previously qualified for laboratory method blank contamination.

No other problems were noted.

Executive Summary

Laboratory Performance: Endrin and 4,4'-DDD were detected in the laboratory method blank. Some pesticide/PCB compounds reported %Ds between positive results in columns 1 and 2 above the quality control limit of 25%, but not over 100%. Some pesticide/PCB compounds reported %Ds above 100%. Due to coeluting matrix interference on one of the GC columns; confirmation of multiple compounds was not feasible for some samples. Thus, the concentrations reported for these samples are based on a single column.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program" (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Brown & Root Environmental
Teresa M. Hudson
Environmental Scientist/Data Validator

for
Brown & Root Environmental
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

NAS KEY WEST
SDG – BR001
TABLE 1 - RECOMMENDATION SUMMARY

Sample Number	PEST/PCB
S4F-1	A^{1} $J^{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13}$
S4F-2	$J^{1, 4, 6, 7, 10, 12, 13, 14, 30}$
S4F-3	A^{1} $J^{1, 5, 6, 11, 13, 15, 16, 17, 18}$
S4F-4	A^{1} $J^{1, 5, 8, 9, 11, 13, 15, 19, 20, 21}$
S4F-5	$J^{5, 6, 7, 10, 11, 13, 21, 22, 23, 24}$
S4F-6	$J^{1, 4, 6, 9, 10, 13, 15, 16, 25, 26, 27, 28, 29}$
S4F-7	A^{1} $J^{1, 5, 6, 10, 13, 14, 15, 21, 23, 29}$
S4F-8	A^{1} $J^{1, 5, 6, 10, 13, 15, 16, 21, 26, 29, 31}$
S4F-9	A^{1} $J^{1, 2, 6, 7, 8, 10, 13, 21, 25, 27}$
S4F-11	$J^{1, 2, 6, 7, 10, 12, 13, 24, 25}$
S4F-12	$J^{1, 5, 6, 9, 10, 13, 16, 23, 28, 29,}$
S4F-13	$J^{3, 4, 5, 6, 9, 10, 13, 15, 21, 23, 29, 32}$
S4F-14	$J^{7, 10, 12, 13, 15, 19, 24, 30, 33}$
S4F-15	$J^{1, 6, 7, 8, 10, 12, 13, 15, 21, 27}$
S4F-16	$J^{6, 10, 13, 14, 23, 24, 29, 32}$
S4F-17	$J^{5, 6, 9, 10, 13, 15, 23, 24, 29, 32}$
S4F-18	$J^{1, 6, 10, 12, 13, 24, 26, 29, 30, 32}$
S4F-19	$J^{10, 13, 14, 15, 17, 23, 25, 28, 34}$
S4F-20	A^{1} $J^{1, 3, 5, 7, 11, 12, 13, 15, 17, 19, 21, 23}$

If the field is left blank, the qualifier is A - Accept all data.

A^{1} Accept data, but change positive results for 4,4'-DDD to a revised detection limit and qualify as non-detected, (U) for blank contamination.

J^{1} Removed the laboratory qualifier (P) for beta-BHC and estimated (J), as result of %D above 100%.

J^{2} Removed the laboratory qualifier (P) for delta-BHC, used to indicate a high %D. No further action was taken

J^{3} Removed laboratory qualifier (P) for heptachlor and estimated (J), as result of %D above 100%.

J^{4} Removed the laboratory qualifier (X) which indicates that the results for endosulfan I are based on one column. Qualified as estimate (J).

J^{5} Removed laboratory qualifier (P) for dieldrin and estimated (J), as result of %D above 100.

J^{6} Removed laboratory qualifier (P) for 4,4'-DDE and estimated (J), as result of %D above 100.

J^{7} Removed laboratory qualifier (P) for endosulfan sulfate and estimated (J), as result of %D above 100.

J^{8} Removed laboratory qualifier (P) for 4,4'-DDT, used to indicate a high %D. No further action was taken.

J^{9} Removed laboratory qualifier (P) for methoxychlor, used to indicate a high %D. No further action was taken.

J^{10} Removed the laboratory qualifier (P) for endrin aldehyde and estimated (J), as result of %D above 100%.

J[11] Removed laboratory qualifier (P) for chlorobenzilate, used to indicate a high %D. No further action was taken.

J[12] Removed the laboratory qualifier (P) for isodrin and estimated (J), as result of %D above 100%.

J[13] Positive results below the CRQL were estimated (J).

J[14] Removed the laboratory qualifier (P) for chlorobenzilate and estimated (J), as result of %D above 100%.

J[15] Removed the laboratory qualifier (P) for delta-BHC and estimated (J), as result of %D above 100%.

J[16] Removed the laboratory qualifier (P) for 4,4'-DDT and estimated (J), as result of %D above 100%..

J[17] Removed the laboratory qualifier (P) for methoxychlor and estimated (J), as result of %D above 100%.

J[18] Removed the laboratory qualifier (P) for endrin aldehyde, used to indicate a high %D. No further action was taken.

J[19] Removed the laboratory qualifier (P) for 4,4'-DDE, used to indicate a high %D. No further action was taken.

J[20] Removed the laboratory qualifier (P) for endrin and estimated (J), as result of %D above 100%.

J[21] Removed the laboratory qualifier (P) for endosulfan II and estimated (J), as result of %D above 100%.

J[22] Removed the laboratory qualifier (P) for heptachlor, used to indicate a high %D. No further action was taken.

J[23] Removed the laboratory qualifier (P) for aldrin and estimated (J), as result of %D above 100%.

J[24] Removed the laboratory qualifier (P) for endosulfan I and estimated (J), as result of %D above 100%.

J[25] Removed the laboratory qualifier (P) for gamma-BHC (lindane) and estimated (J), as result of %D above 100%.

J[26] Removed the laboratory qualifier (P) for aldrin, used to indicate a high %D. No further action was taken.

J[27] Removed the laboratory qualifier (P) for dieldrin, used to indicate a high %D. No further action was taken.

J[28] Removed the laboratory qualifier (P) for endosulfan II, used to indicate a high %D. No further action was taken.

J[29] Removed the laboratory qualifier (X) which indicates that the results for endosulfan sulfate are based on one column. Qualified as estimate (J).

J[30] Removed the laboratory qualifier (P) for 4,4'-DDD, used to indicate a high %D. No further action was taken.

J[31] Removed the laboratory qualifier (P) for endosulfan I, used to indicate a high %D. No further action was taken.

J[32] Removed the laboratory qualifier (X) which indicates that the results for 4,4'-DDT are based on one column. Qualified as estimate (J).

J[33] Removed the laboratory qualifier (P) for beta-BHC, used to indicate a high %D. No further action was taken.

J[34] Removed the laboratory qualifier (P) for 4,4'-DDD and estimated (J), as result of %D above 100%.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
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SDG: BR001

PESTICIDES/PCBs

Sample Number: S4F-1
Sample Date: 8/29/96
Laboratory ID: S685150-1
QC Type: CS
% Moisture: 0
Location: S4F-1

	RESULT	QUAL	UNITS
4,4'-DDD	5	U	ug/kg
4,4'-DDE	1.3	J	ug/kg
4,4'-DDT	6.8		ug/kg
Aldrin	2.6	U	ug/kg
alpha-BHC	2.6	U	ug/kg
Aroclor-1016	50	U	ug/kg
Aroclor-1221	100	U	ug/kg
Aroclor-1232	50	U	ug/kg
Aroclor-1242	50	U	ug/kg
Aroclor-1248	50	U	ug/kg
Aroclor-1254	50	U	ug/kg
Aroclor-1260	50	U	ug/kg
beta-BHC	1.8	J	ug/kg
Chlordane	26	U	ug/kg
Chlorobenzilate	17	J	ug/kg
delta-BHC	1.1	J	ug/kg
Dieldrin	0.27	J	ug/kg
Endosulfan I	3.8	J	ug/kg
Endosulfan II	5	U	ug/kg
Endosulfan sulfate	2.1	J	ug/kg
Endrin	5	U	ug/kg
Endrin aldehyde	4.6	J	ug/kg
gamma-BHC	2.6	U	ug/kg
Heptachlor	0.47	J	ug/kg
Heptachlor epoxide	2.6	U	ug/kg
Isodrin	0.6	J	ug/kg
Methoxychlor	11	J	ug/kg
Toxaphene	260	U	ug/kg

Sample Number: S4F-11
Sample Date: 8/24/96
Laboratory ID: S685150-11
QC Type: CS
% Moisture: 0
Location: S4F-11

	RESULT	QUAL	UNITS
4,4'-DDD	3.8	U	ug/kg
4,4'-DDE	0.75	J	ug/kg
4,4'-DDT	3.8	U	ug/kg
Aldrin	1.1	J	ug/kg
alpha-BHC	2	U	ug/kg
Aroclor-1016	38	U	ug/kg
Aroclor-1221	77	U	ug/kg
Aroclor-1232	38	U	ug/kg
Aroclor-1242	38	U	ug/kg
Aroclor-1248	38	U	ug/kg
Aroclor-1254	38	U	ug/kg
Aroclor-1260	38	U	ug/kg
beta-BHC	2.9	J	ug/kg
Chlordane	20	U	ug/kg
Chlorobenzilate	20	U	ug/kg
delta-BHC	0.69	J	ug/kg
Dieldrin	3.8	U	ug/kg
Endosulfan I	1.8	J	ug/kg
Endosulfan II	1.4	J	ug/kg
Endosulfan sulfate	9.3	J	ug/kg
Endrin	3.8	U	ug/kg
Endrin aldehyde	6.5	J	ug/kg
gamma-BHC	0.11	J	ug/kg
Heptachlor	2	U	ug/kg
Heptachlor epoxide	2	U	ug/kg
Isodrin	1.4	J	ug/kg
Methoxychlor	20	U	ug/kg
Toxaphene	200	U	ug/kg

Sample Number: S4F-12
Sample Date: 8/25/96
Laboratory ID: S685150-12
QC Type: CS
% Moisture: 0
Location: S4F-12

	RESULT	QUAL	U
4,4'-DDD	4.1	U	u
4,4'-DDE	1.7	J	u
4,4'-DDT	6	J	u
Aldrin	0.43	J	u
alpha-BHC	2.1	U	u
Aroclor-1016	41	U	u
Aroclor-1221	84	U	u
Aroclor-1232	41	U	u
Aroclor-1242	41	U	u
Aroclor-1248	41	U	u
Aroclor-1254	41	U	u
Aroclor-1260	41	U	u
beta-BHC	1.4	J	u
Chlordane	21	U	u
Chlorobenzilate	21	U	u
delta-BHC	1.4	J	u
Dieldrin	0.16	J	u
Endosulfan I	2.1	U	u
Endosulfan II	0.72	J	u
Endosulfan sulfate	76	J	u
Endrin	4.1	U	u
Endrin aldehyde	4.1	J	u
gamma-BHC	2.1	U	u
Heptachlor	2.1	U	u
Heptachlor epoxide	2.1	U	u
Isodrin	4.1	U	u
Methoxychlor	9.2	J	u
Toxaphene	210	U	u

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Sample Number: S4F-13
Sample Date: 8/25/96
Laboratory ID: S685150-13
QC Type: CS
% Moisture: 0
Location: S4F-13

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	2	J	ug/kg
4,4'-DDT	24	J	ug/kg
Aldrin	0.65	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.53	J	ug/kg
Dieldrin	2.8	J	ug/kg
Endosulfan I	5.6	J	ug/kg
Endosulfan II	2	J	ug/kg
Endosulfan sulfate	27	J	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	23	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	4.4	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	27		ug/kg
Toxaphene	170	U	ug/kg

Sample Number: S4F-14
Sample Date: 8/25/96
Laboratory ID: S685150-14
QC Type: CS
% Moisture: 0
Location: S4F-14

	RESULT	QUAL	UNITS
4,4'-DDD	1.1	J	ug/kg
4,4'-DDE	3.8		ug/kg
4,4'-DDT	3	J	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.9		ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	39		ug/kg
delta-BHC	1.3	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	0.2	J	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.2	J	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	7.5	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	1.4	J	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: S4F-15
Sample Date: 8/29/96
Laboratory ID: S685150-15
QC Type: CS
% Moisture: 0
Location: S4F-15

	RESULT	QUAL	UNI
4,4'-DDD	1.2	J	ug/
4,4'-DDE	3.7	J	ug/
4,4'-DDT	3.3		ug/
Aldrin	1.7	U	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	33	U	ug/
beta-BHC	1	J	ug/
Chlordane	17	U	ug/
Chlorobenzilate	47		ug/
delta-BHC	1.3	J	ug/
Dieldrin	0.93	J	ug/
Endosulfan I	1.7	U	ug/
Endosulfan II	0.24	J	ug/
Endosulfan sulfate	5.9	J	ug/
Endrin	3.3	U	ug/
Endrin aldehyde	9.6	J	ug/
gamma-BHC	1.7	U	ug/
Heptachlor	1.7	U	ug/
Heptachlor epoxide	1.7	U	ug/
Isodrin	0.89	J	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/

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Sample Number: S4F-16
Sample Date: 8/29/96
Laboratory ID: S685150-16
QC Type: CS
% Moisture: 0
Location: S4F-16

	RESULT	QUAL	UNITS
4,4'-DDD	4.5	U	ug/kg
4,4'-DDE	2.6	J	ug/kg
4,4'-DDT	23	J	ug/kg
Aldrin	1.6	J	ug/kg
alpha-BHC	2.3	U	ug/kg
Aroclor-1016	45	U	ug/kg
Aroclor-1221	91	U	ug/kg
Aroclor-1232	45	U	ug/kg
Aroclor-1242	45	U	ug/kg
Aroclor-1248	45	U	ug/kg
Aroclor-1254	45	U	ug/kg
Aroclor-1260	45	U	ug/kg
beta-BHC	2.3	U	ug/kg
Chlordane	23	U	ug/kg
Chlorobenzilate	49		ug/kg
delta-BHC	2.3	U	ug/kg
Dieldrin	4.5	U	ug/kg
Endosulfan I	6.5	J	ug/kg
Endosulfan II	4.5	U	ug/kg
Endosulfan sulfate	58	J	ug/kg
Endrin	4.5	U	ug/kg
Endrin aldehyde	14	J	ug/kg
gamma-BHC	2.3	U	ug/kg
Heptachlor	2.3	U	ug/kg
Heptachlor epoxide	2.3	U	ug/kg
Isodrin	6.2		ug/kg
Methoxychlor	23	U	ug/kg
Toxaphene	230	U	ug/kg

Sample Number: S4F-17
Sample Date: 8/26/96
Laboratory ID: S685150-17
QC Type: CS
% Moisture: 0
Location: S4F-17

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	1.7	J	ug/kg
4,4'-DDT	20	J	ug/kg
Aldrin	1.4	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.6	J	ug/kg
Dieldrin	1.7	J	ug/kg
Endosulfan I	5.7	J	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	48	J	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	12	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	5.1		ug/kg
Methoxychlor	16	J	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: S4F-18
Sample Date: 8/29/96
Laboratory ID: S685150-18
QC Type: CS
% Moisture: 0
Location: S4F-18

	RESULT	QUAL	UN
4,4'-DDD	2.1	J	ug
4,4'-DDE	1.8	J	ug
4,4'-DDT	23	J	ug
Aldrin	1.1	J	ug
alpha-BHC	2.8	U	ug
Aroclor-1016	55	U	ug
Aroclor-1221	110	U	ug
Aroclor-1232	55	U	ug
Aroclor-1242	55	U	ug
Aroclor-1248	55	U	ug
Aroclor-1254	55	U	ug
Aroclor-1260	55	U	ug
beta-BHC	3	J	ug
Chlordane	28	U	ug
Chlorobenzilate	28	U	ug
delta-BHC	2.8	U	ug
Dieldrin	1.7	J	ug
Endosulfan I	3.8	J	ug
Endosulfan II	5.5	U	ug
Endosulfan sulfate	25	J	ug
Endrin	5.5	U	ug
Endrin aldehyde	9.4	J	ug
gamma-BHC	2.8	U	ug
Heptachlor	2.8	U	ug
Heptachlor epoxide	2.8	U	ug
Isodrin	0.45	J	ug
Methoxychlor	23	J	ug
Toxaphene	280	U	ug

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Sample Number: S4F-19
Sample Date: 8/29/96
Laboratory ID: S685150-19
QC Type: CS
% Moisture: 0
Location: S4F-19

	RESULT	QUAL	UNITS
4,4'-DDD	1.7	J	ug/kg
4,4'-DDE	9.9	U	ug/kg
4,4'-DDT	9.9	U	ug/kg
Aldrin	2.7	J	ug/kg
alpha-BHC	5.1	U	ug/kg
Aroclor-1016	99	U	ug/kg
Aroclor-1221	200	U	ug/kg
Aroclor-1232	99	U	ug/kg
Aroclor-1242	99	U	ug/kg
Aroclor-1248	99	U	ug/kg
Aroclor-1254	99	U	ug/kg
Aroclor-1260	99	U	ug/kg
beta-BHC	5.1	U	ug/kg
Chlordane	51	U	ug/kg
Chlorobenzilate	68	J	ug/kg
delta-BHC	1.4	J	ug/kg
Dieldrin	9.9	U	ug/kg
Endosulfan I	12		ug/kg
Endosulfan II	2.7	J	ug/kg
Endosulfan sulfate	9.9	U	ug/kg
Endrin	9.9	U	ug/kg
Endrin aldehyde	26	J	ug/kg
gamma-BHC	0.66	J	ug/kg
Heptachlor	5.1	U	ug/kg
Heptachlor epoxide	5.1	U	ug/kg
Isodrin	9.9	U	ug/kg
Methoxychlor	10	J	ug/kg
Toxaphene	510	U	ug/kg

Sample Number: S4F-2
Sample Date: 8/29/96
Laboratory ID: S685150-2
QC Type: CS
% Moisture: 0
Location: S4F-2

	RESULT	QUAL	UNITS
4,4'-DDD	1.4	J	ug/kg
4,4'-DDE	0.94	J	ug/kg
4,4'-DDT	7		ug/kg
Aldrin	2.6	U	ug/kg
alpha-BHC	2.6	U	ug/kg
Aroclor-1016	50	U	ug/kg
Aroclor-1221	100	U	ug/kg
Aroclor-1232	50	U	ug/kg
Aroclor-1242	50	U	ug/kg
Aroclor-1248	50	U	ug/kg
Aroclor-1254	50	U	ug/kg
Aroclor-1260	50	U	ug/kg
beta-BHC	1.4	J	ug/kg
Chlordane	26	U	ug/kg
Chlorobenzilate	8.1	J	ug/kg
delta-BHC	2.6	U	ug/kg
Dieldrin	5	U	ug/kg
Endosulfan I	2.8	J	ug/kg
Endosulfan II	5	U	ug/kg
Endosulfan sulfate	2.4	J	ug/kg
Endrin	5	U	ug/kg
Endrin aldehyde	6.6	J	ug/kg
gamma-BHC	2.6	U	ug/kg
Heptachlor	2.6	U	ug/kg
Heptachlor epoxide	2.6	U	ug/kg
Isodrin	0.6	J	ug/kg
Methoxychlor	26	U	ug/kg
Toxaphene	260	U	ug/kg

Sample Number: S4F-20
Sample Date: 8/29/96
Laboratory ID: S685150-20
QC Type: CS
% Moisture: 0
Location: S4F-20

	RESULT	QUAL	UNI
4,4'-DDD	5	U	ug/
4,4'-DDE	4.6	J	ug/
4,4'-DDT	2.8	J	ug/
Aldrin	1.3	J	ug/
alpha-BHC	2.6	U	ug/
Aroclor-1016	50	U	ug/
Aroclor-1221	100	U	ug/
Aroclor-1232	50	U	ug/
Aroclor-1242	50	U	ug/
Aroclor-1248	50	U	ug/
Aroclor-1254	50	U	ug/
Aroclor-1260	50	U	ug/
beta-BHC	1.9	J	ug/
Chlordane	26	U	ug/
Chlorobenzilate	54		ug/
delta-BHC	1.6	J	ug/
Dieldrin	0.58	J	ug/
Endosulfan I	2.6	U	ug/
Endosulfan II	0.7	J	ug/
Endosulfan sulfate	3.7	J	ug
Endrin	5	U	ug
Endrin aldehyde	9.7		ug
gamma-BHC	2.6	U	ug
Heptachlor	1.8	J	ug
Heptachlor epoxide	2.6	U	ug
Isodrin	0.97	J	ug
Methoxychlor	3.6	J	ug
Toxaphene	260	U	ug

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Sample Number: S4F-3
Sample Date: 8/29/96
Laboratory ID: S685150-3
QC Type: CS
% Moisture: 0
Location: S4F-3

	RESULT	QUAL	UNITS
4,4'-DDD	5	U	ug/kg
4,4'-DDE	3.5	J	ug/kg
4,4'-DDT	1.9	J	ug/kg
Aldrin	2.6	U	ug/kg
alpha-BHC	2.6	U	ug/kg
Aroclor-1016	50	U	ug/kg
Aroclor-1221	100	U	ug/kg
Aroclor-1232	50	U	ug/kg
Aroclor-1242	50	U	ug/kg
Aroclor-1248	50	U	ug/kg
Aroclor-1254	50	U	ug/kg
Aroclor-1260	50	U	ug/kg
beta-BHC	1.8	J	ug/kg
Chlordane	26	U	ug/kg
Chlorobenzilate	29		ug/kg
delta-BHC	0.72	J	ug/kg
Dieldrin	0.32	J	ug/kg
Endosulfan I	2.6	U	ug/kg
Endosulfan II	5	U	ug/kg
Endosulfan sulfate	3.1	J	ug/kg
Endrin	5	U	ug/kg
Endrin aldehyde	11		ug/kg
gamma-BHC	2.6	U	ug/kg
Heptachlor	2.6	U	ug/kg
Heptachlor epoxide	2.6	U	ug/kg
Isodrin	5	U	ug/kg
Methoxychlor	4.3	J	ug/kg
Toxaphene	260	U	ug/kg

Sample Number: S4F-4
Sample Date: 8/29/96
Laboratory ID: S685150-4
QC Type: CS
% Moisture: 0
Location: S4F-4

	RESULT	QUAL	UNITS
4,4'-DDD	4.5	U	ug/kg
4,4'-DDE	5		ug/kg
4,4'-DDT	3.4	J	ug/kg
Aldrin	2.3	U	ug/kg
alpha-BHC	2.3	U	ug/kg
Aroclor-1016	45	U	ug/kg
Aroclor-1221	91	U	ug/kg
Aroclor-1232	45	U	ug/kg
Aroclor-1242	45	U	ug/kg
Aroclor-1248	45	U	ug/kg
Aroclor-1254	45	U	ug/kg
Aroclor-1260	45	U	ug/kg
beta-BHC	1.1	J	ug/kg
Chlordane	23	U	ug/kg
Chlorobenzilate	39		ug/kg
delta-BHC	0.17	J	ug/kg
Dieldrin	0.28	J	ug/kg
Endosulfan I	2.3	U	ug/kg
Endosulfan II	0.8	J	ug/kg
Endosulfan sulfate	3.3	J	ug/kg
Endrin	1.1	J	ug/kg
Endrin aldehyde	15		ug/kg
gamma-BHC	2.3	U	ug/kg
Heptachlor	2.3	U	ug/kg
Heptachlor epoxide	2.3	U	ug/kg
Isodrin	4.5	U	ug/kg
Methoxychlor	23	U	ug/kg
Toxaphene	230	U	ug/kg

Sample Number: S4F-5
Sample Date: 8/29/96
Laboratory ID: S685150-5
QC Type: CS
% Moisture: 0
Location: S4F-5

	RESULT	QUAL	UN
4,4'-DDD	2.4	J	ug
4,4'-DDE	1.8	J	ug
4,4'-DDT	6.2	U	ug
Aldrin	0.4	J	ug
alpha-BHC	3.2	U	ug
Aroclor-1016	62	U	ug
Aroclor-1221	120	U	ug
Aroclor-1232	62	U	ug
Aroclor-1242	62	U	ug
Aroclor-1248	62	U	ug
Aroclor-1254	62	U	ug
Aroclor-1260	62	U	ug
beta-BHC	3.2	U	ug
Chlordane	32	U	ug
Chlorobenzilate	61		ug
delta-BHC	3.2	U	ug
Dieldrin	0.97	J	ug
Endosulfan I	1.7	J	ug
Endosulfan II	0.93	J	ug
Endosulfan sulfate	2.7	J	ug
Endrin	6.2	U	ug
Endrin aldehyde	11	J	ug
gamma-BHC	3.2	U	ug
Heptachlor	2.3	J	ug
Heptachlor epoxide	3.2	U	ug
Isodrin	6.2	U	ug
Methoxychlor	32	U	ug
Toxaphene	320	U	ug

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Sample Number: S4F-6
Sample Date: 8/24/96
Laboratory ID: S685150-6
QC Type: CS
% Moisture: 0
Location: S4F-6

	RESULT	QUAL	UNITS
4,4'-DDD	3.8	U	ug/kg
4,4'-DDE	1.4	J	ug/kg
4,4'-DDT	2.3	J	ug/kg
Aldrin	0.31	J	ug/kg
alpha-BHC	2	U	ug/kg
Aroclor-1016	38	U	ug/kg
Aroclor-1221	77	U	ug/kg
Aroclor-1232	38	U	ug/kg
Aroclor-1242	38	U	ug/kg
Aroclor-1248	38	U	ug/kg
Aroclor-1254	38	U	ug/kg
Aroclor-1260	38	U	ug/kg
beta-BHC	1.1	J	ug/kg
Chlordane	20	U	ug/kg
Chlorobenzilate	20	U	ug/kg
delta-BHC	0.31	J	ug/kg
Dieldrin	0.69	J	ug/kg
Endosulfan I	1.1	J	ug/kg
Endosulfan II	0.6	J	ug/kg
Endosulfan sulfate	24	J	ug/kg
Endrin	3.8	U	ug/kg
Endrin aldehyde	11	J	ug/kg
gamma-BHC	0.13	J	ug/kg
Heptachlor	2	U	ug/kg
Heptachlor epoxide	2	U	ug/kg
Isodrin	3.8	U	ug/kg
Methoxychlor	5.9	J	ug/kg
Toxaphene	200	U	ug/kg

Sample Number: S4F-7
Sample Date: 8/29/96
Laboratory ID: S685150-7
QC Type: CS
% Moisture: 0
Location: S4F-7

	RESULT	QUAL	UNITS
4,4'-DDD	4.5	U	ug/kg
4,4'-DDE	1.5	J	ug/kg
4,4'-DDT	5.5		ug/kg
Aldrin	0.27	J	ug/kg
alpha-BHC	2.3	U	ug/kg
Aroclor-1016	45	U	ug/kg
Aroclor-1221	91	U	ug/kg
Aroclor-1232	45	U	ug/kg
Aroclor-1242	45	U	ug/kg
Aroclor-1248	45	U	ug/kg
Aroclor-1254	45	U	ug/kg
Aroclor-1260	45	U	ug/kg
beta-BHC	1.4	J	ug/kg
Chlordane	23	U	ug/kg
Chlorobenzilate	25	J	ug/kg
delta-BHC	0.071	J	ug/kg
Dieldrin	0.73	J	ug/kg
Endosulfan I	2.3	U	ug/kg
Endosulfan II	0.17	J	ug/kg
Endosulfan sulfate	8.9	J	ug/kg
Endrin	4.5	U	ug/kg
Endrin aldehyde	15	J	ug/kg
gamma-BHC	2.3	U	ug/kg
Heptachlor	2.3	U	ug/kg
Heptachlor epoxide	2.3	U	ug/kg
Isodrin	4.5	U	ug/kg
Methoxychlor	23	U	ug/kg
Toxaphene	230	U	ug/kg

Sample Number: S4F-8
Sample Date: 8/29/96
Laboratory ID: S685150-8
QC Type: CS
% Moisture: 0
Location: S4F-8

	RESULT	QUAL	UN
4,4'-DDD	4.5	U	ug
4,4'-DDE	1.2	J	ug
4,4'-DDT	2.9	J	ug
Aldrin	0.53	J	ug
alpha-BHC	2.3	U	ug
Aroclor-1016	45	U	ug
Aroclor-1221	91	U	ug
Aroclor-1232	45	U	ug
Aroclor-1242	45	U	ug
Aroclor-1248	45	U	ug
Aroclor-1254	45	U	ug
Aroclor-1260	45	U	ug
beta-BHC	2	J	ug
Chlordane	23	U	ug
Chlorobenzilate	23	U	ug
delta-BHC	0.16	J	ug
Dieldrin	0.57	J	ug
Endosulfan I	0.59	J	ug
Endosulfan II	0.4	J	ug
Endosulfan sulfate	27	J	ug
Endrin	4.5	U	ug
Endrin aldehyde	12	J	ug
gamma-BHC	2.3	U	ug
Heptachlor	2	J	ug
Heptachlor epoxide	2.3	U	ug
Isodrin	4.5	U	ug
Methoxychlor	23	U	ug
Toxaphene	230	U	ug

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR001

PESTICIDES/PCBs

Sample Number: S4F-9
Sample Date: 8/24/96
Laboratory ID: S685150-9
QC Type: CS
% Moisture: 0
Location: S4F-9

	RESULT	QUAL	UNITS
4,4'-DDD	3.8	U	ug/kg
4,4'-DDE	2.4	J	ug/kg
4,4'-DDT	3.7	J	ug/kg
Aldrin	2	U	ug/kg
alpha-BHC	2	U	ug/kg
Aroclor-1016	38	U	ug/kg
Aroclor-1221	77	U	ug/kg
Aroclor-1232	38	U	ug/kg
Aroclor-1242	38	U	ug/kg
Aroclor-1248	38	U	ug/kg
Aroclor-1254	38	U	ug/kg
Aroclor-1260	38	U	ug/kg
beta-BHC	1.4	J	ug/kg
Chlordane	20	U	ug/kg
Chlorobenzilate	28		ug/kg
delta-BHC	1.7	J	ug/kg
Dieldrin	0.55	J	ug/kg
Endosulfan I	2	U	ug/kg
Endosulfan II	0.17	J	ug/kg
Endosulfan sulfate	3.3	J	ug/kg
Endrin	3.8	U	ug/kg
Endrin aldehyde	14	J	ug/kg
gamma-BHC	0.26	J	ug/kg
Heptachlor	2	U	ug/kg
Heptachlor epoxide	2	U	ug/kg
Isodrin	3.8	U	ug/kg
Methoxychlor	20	U	ug/kg
Toxaphene	200	U	ug/kg

INORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 15, 1997**
FROM:	**JULEA F. BRADLEY**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA REVIEW – TAL METALS**
CTO 007 – KEY WEST, FLORIDA
SDG – BR002 (S685150A)

SAMPLES: 20/Tissue:

S4F-21	S5F-1	S5F-2	S5F-3
S5F-4	S5F-5	S5F-6	S5F-7
S5F-8	S5F-9	S5F-10	S5F-11
S5F-12	S5F-13	S5F-14	S5F-15
S5F-16	S5F-17	S5F-18	S5F-19

Overview

The sample set for CTO 007, Key West, BR002 (S685150A) consists of twenty (20) tissue environmental samples. All samples were analyzed for Target Analyte List (TAL) metals. The samples were collected by Brown & Root Environmental on August 29, 1996 and analyzed by Savannah Laboratories under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- Calibration Verifications
- * Laboratory Blank Analyses
- Matrix Spike Results

*Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/preparation/field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level (tissue)
aluminum	22.1 ug/L	22.1mg/kg
arsenic	3.5 ug/L	3.5 mg/kg
barium	1.6 ug/L	1.6 mg/kg
cadmium	2.9 ug/L	2.9 mg/kg
calcium	24.2 ug/L	24.2 mg/kg
cobalt	2.9 ug/L	2.9 mg/kg
copper	18.1 ug/L	18.1 mg/kg
iron	26.2 ug/L	26.2mg/kg
lead	1.9 ug/L	1.9 mg/kg
magnesium	28.5 ug/L	28.5 mg/kg
manganese	1.2 ug/L	1.2 mg/kg
mercury*	0.019 mg/kg	0.095 mg/kg
silver	1.2 ug/L	1.2 mg/kg
sodium	51.3 ug/L	51.3 mg/kg
zinc	5.3 ug/L	5.3 mg/kg

* Maximum concentration found in a soil matrix preparation blank.

Samples affected: All

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for aluminum, arsenic, barium, cadmium, copper, iron, lead, manganese and mercury have been qualified as nondetected, "U." No action was taken for the remaining analytes since either the results were greater than the action level or were nondetects.

Notes

It was noted that the percent recovery (%R) for mercury fell below the control limit. However, this was not a major noncompliance and no validation actions were warranted.

The Contract Required Control Limit (CRDL) Standard percent recoveries (%Rs) for lead and selenium exceeded the quality control limits. However, no validation actions were taken for CRDL Standard %Rs.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method/preparation blanks.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed in accordance with the "National Functional Guidelines for Inorganic Review," February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality. "I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Julea F Bradley

Brown & Root Environmental
Julea F. Bradley
Environmental Scientist/Data Validator

Brown & Root Environmental
for Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

KEY WEST
SDG BR002

TABLE 1 - RECOMMENDATION SUMMARY

Aluminum	A^1	Magnesium	
Antimony		Manganese	A^1
Arsenic	A^1	Mercury	A^1
Barium	A^1	Nickel	
Beryllium		Potassium	
Cadmium	A^1	Selenium	
Calcium		Silver	
Chromium		Sodium	
Cobalt		Thallium	
Copper	A^1	Vanadium	
Iron	A^1	Zinc	
Lead	A^1		

If the field is left blank, the qualifier is A - Accept all data.

A^1 - Accept data but qualify as nondetected, "U," as a result of laboratory blank contamination.

APPENDIX A
Qualified Analytical Results

SDG: BR002

INORGANICS

Sample Number: S4F-21
Sample Date: 8/29/96
Laboratory ID: S685150A-1
QC Type: CS
% Moisture: 0
Location: S4F-21

	RESULT	QUAL	UNITS
Aluminum	3.2	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.45	U	mg/kg
Barium	0.38	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	15300		mg/kg
Chromium	0.9		mg/kg
Cobalt	0.37	U	mg/kg
Copper	2.8	U	mg/kg
Iron	21.6	U	mg/kg
Lead	0.72	U	mg/kg
Magnesium	544		mg/kg
Manganese	3.8		mg/kg
Mercury	0.06	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	3250		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1460		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	80.1		mg/kg

Sample Number: S5F-1
Sample Date: 8/29/96
Laboratory ID: S685150A-2
QC Type: CS
% Moisture: 0
Location: S5F-1

	RESULT	QUAL	UNITS
Aluminum	17.8	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.72	U	mg/kg
Barium	3		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	13100		mg/kg
Chromium	1.3		mg/kg
Cobalt	0.37	U	mg/kg
Copper	3.7	U	mg/kg
Iron	44.7		mg/kg
Lead	3.9		mg/kg
Magnesium	659		mg/kg
Manganese	0.95	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2850		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	2540		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	52.7		mg/kg

Sample Number: S5F-10
Sample Date: 8/29/96
Laboratory ID: S685150A-11
QC Type: CS
% Moisture: 0
Location: S5F-10

	RESULT	QUAL	UNI
Aluminum	14.3	U	mg
Antimony	2.4	U	mg/
Arsenic	0.8	U	mg/
Barium	3.2		mg/
Beryllium	0.04	U	mg/
Cadmium	0.69	U	mg/
Calcium	15300		mg/
Chromium	1.2		mg/
Cobalt	0.37	U	mg/
Copper	3.7	U	mg/
Iron	47.7		mg/
Lead	3.7		mg/
Magnesium	648		mg/
Manganese	1	U	mg/k
Mercury	0.01	U	mg/k
Nickel	0.85	U	mg/k
Potassium	3010		mg/k
Selenium	1	U	mg/k
Silver	0.23	U	mg/k
Sodium	2320		mg/k
Thallium	0.81	U	mg/k
Vanadium	0.45	U	mg/k
Zinc	55.4		mg/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

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INORGANICS

Sample Number: S5F-11
Sample Date: 8/29/96
Laboratory ID: S685150A-12
QC Type: CS
% Moisture: 0
Location: S5F-11

	RESULT	QUAL	UNITS
Aluminum	47.3		mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.95	U	mg/kg
Barium	3.5		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.74	U	mg/kg
Calcium	17900		mg/kg
Chromium	1.9		mg/kg
Cobalt	0.37	U	mg/kg
Copper	3.1	U	mg/kg
Iron	84.5		mg/kg
Lead	4.8		mg/kg
Magnesium	837		mg/kg
Manganese	1.1	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2920		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	2300		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	66.3		mg/kg

Sample Number: S5F-12
Sample Date: 8/29/96
Laboratory ID: S685150A-13
QC Type: CS
% Moisture: 0
Location: S5F-12

	RESULT	QUAL	UNITS
Aluminum	20.1	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.45	U	mg/kg
Barium	3.5		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	16300		mg/kg
Chromium	1.1		mg/kg
Cobalt	0.37	U	mg/kg
Copper	5.1	U	mg/kg
Iron	61.6		mg/kg
Lead	4		mg/kg
Magnesium	692		mg/kg
Manganese	0.95	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	3160		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	2340		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	68.6		mg/kg

Sample Number: S5F-13
Sample Date: 8/29/96
Laboratory ID: S685150A-14
QC Type: CS
% Moisture: 0
Location: S5F-13

	RESULT	QUAL	UN
Aluminum	11.6	U	mg
Antimony	2.4	U	mg
Arsenic	1.2	U	mg
Barium	2.8		mg
Beryllium	0.04	U	mg
Cadmium	0.53	U	mg
Calcium	14300		mg/
Chromium	0.82	U	mg/
Cobalt	0.37	U	mg/
Copper	1.8	U	mg/
Iron	40.5		mg/
Lead	4.1		mg/
Magnesium	631		mg/
Manganese	0.91	U	mg/
Mercury	0.01	U	mg/
Nickel	0.85	U	mg/
Potassium	2700		mg/
Selenium	1	U	mg/
Silver	0.23	U	mg/
Sodium	2240		mg/
Thallium	0.81	U	mg/
Vanadium	0.45	U	mg/
Zinc	55		mg/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR002

INORGANICS

Sample Number: S5F-14
Sample Date: 8/29/96
Laboratory ID: S685150A-15
QC Type: CS
% Moisture: 0
Location: S5F-14

	RESULT	QUAL	UNITS
Aluminum	10.3	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.67	U	mg/kg
Barium	3		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.64	U	mg/kg
Calcium	13400		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	2.5	U	mg/kg
Iron	31.9		mg/kg
Lead	3.1		mg/kg
Magnesium	540		mg/kg
Manganese	0.95	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2920		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	2080		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	53.1		mg/kg

Sample Number: S5F-15
Sample Date: 8/29/96
Laboratory ID: S685150A-16
QC Type: CS
% Moisture: 0
Location: S5F-15

	RESULT	QUAL	UNITS
Aluminum	8.6	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.87	U	mg/kg
Barium	2.8		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	11500		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	2.6	U	mg/kg
Iron	46		mg/kg
Lead	3.2		mg/kg
Magnesium	574		mg/kg
Manganese	0.64	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2940		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	2200		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	67.8		mg/kg

Sample Number: S5F-16
Sample Date: 8/29/96
Laboratory ID: S685150A-17
QC Type: CS
% Moisture: 0
Location: S5F-16

	RESULT	QUAL	UN
Aluminum	14.7	U	mg
Antimony	2.4	U	mg
Arsenic	1.3	U	mg
Barium	3.3		mg
Beryllium	0.04	U	mg
Cadmium	0.59	U	mg
Calcium	14800		mg
Chromium	0.82	U	mg/
Cobalt	0.37	U	mg/
Copper	2.9	U	mg/
Iron	48.3		mg/
Lead	3.3		mg/
Magnesium	615		mg/
Manganese	1.2		mg/
Mercury	0.01	U	mg/
Nickel	0.85	U	mg/
Potassium	2850		mg/
Selenium	1	U	mg/
Silver	0.23	U	mg/
Sodium	2140		mg/
Thallium	0.81	U	mg/
Vanadium	0.45	U	mg/
Zinc	66.5		mg/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR002

INORGANICS

Sample Number: S5F-17
Sample Date: 8/29/96
Laboratory ID: S685150A-18
QC Type: CS
% Moisture: 0
Location: S5F-17

	RESULT	QUAL	UNITS
Aluminum	12.6	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.69	U	mg/kg
Barium	3.1		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	12600		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	1.1	U	mg/kg
Iron	25.9	U	mg/kg
Lead	3.2		mg/kg
Magnesium	632		mg/kg
Manganese	0.79	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2770		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	2360		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	47.1		mg/kg

Sample Number: S5F-18
Sample Date: 8/29/96
Laboratory ID: S685150A-19
QC Type: CS
% Moisture: 0
Location: S5F-18

	RESULT	QUAL	UNITS
Aluminum	11.4	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.9	U	mg/kg
Barium	2.9		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	13700		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	2	U	mg/kg
Iron	36.2		mg/kg
Lead	3.2		mg/kg
Magnesium	601		mg/kg
Manganese	0.91	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2940		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	2270		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	49.9		mg/kg

Sample Number: S5F-19
Sample Date: 8/29/96
Laboratory ID: S685150A-20
QC Type: CS
% Moisture: 0
Location: S5F-19

	RESULT	QUAL	UN
Aluminum	15.5	U	mg
Antimony	2.4	U	mg
Arsenic	0.48	U	mg
Barium	2.2		mg
Beryllium	0.04	U	mg
Cadmium	0.53	U	mg
Calcium	9170		mg
Chromium	0.82	U	mg
Cobalt	0.37	U	mg
Copper	2.6	U	mg
Iron	38.4		mg
Lead	2.3		mg
Magnesium	533		mg
Manganese	0.49	U	mg
Mercury	0.01	U	mg
Nickel	0.85	U	mg
Potassium	2590		mg
Selenium	1	U	mg
Silver	0.23	U	mg
Sodium	1950		mg
Thallium	0.81	U	mg
Vanadium	0.45	U	mg
Zinc	48.6		mg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR002

INORGANICS

Sample Number: S5F-2
Sample Date: 8/29/96
Laboratory ID: S685150A-3
QC Type: CS
% Moisture: 0
Location: S5F-2

	RESULT	QUAL	UNITS
Aluminum	17.5	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.2	U	mg/kg
Barium	3.2		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	16300		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	4.4	U	mg/kg
Iron	57.3		mg/kg
Lead	3.4		mg/kg
Magnesium	819		mg/kg
Manganese	1.2		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2780		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	2790		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	56.1		mg/kg

Sample Number: S5F-3
Sample Date: 8/29/96
Laboratory ID: S685150A-4
QC Type: CS
% Moisture: 0
Location: S5F-3

	RESULT	QUAL	UNITS
Aluminum	6.9	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.1	U	mg/kg
Barium	2.6		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	9930		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	1.8	U	mg/kg
Iron	30.5		mg/kg
Lead	1.9		mg/kg
Magnesium	523		mg/kg
Manganese	0.68	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2850		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	2120		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	36.5		mg/kg

Sample Number: S5F-4
Sample Date: 8/29/96
Laboratory ID: S685150A-5
QC Type: CS
% Moisture: 0
Location: S5F-4

	RESULT	QUAL	UN
Aluminum	318		mg
Antimony	2.4	U	mg
Arsenic	1.3	U	mg
Barium	5.9		mg
Beryllium	0.04	U	mg
Cadmium	0.61	U	mg
Calcium	10900		mg
Chromium	0.82	U	mg
Cobalt	0.37	U	mg
Copper	1.9	U	mg
Iron	48.9		mg
Lead	2		mg
Magnesium	573		mg
Manganese	2.7		mg
Mercury	0.01	U	mg
Nickel	0.85	U	mg
Potassium	3020		mg
Selenium	1	U	mg
Silver	0.23	U	mg
Sodium	2290		mg
Thallium	0.81	U	mg
Vanadium	0.45	U	mg
Zinc	44.9		mg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR002

INORGANICS

Sample Number: S5F-5
Sample Date: 8/29/96
Laboratory ID: S685150A-6
QC Type: CS
% Moisture: 0
Location: S5F-5

	RESULT	QUAL	UNITS
Aluminum	3.6	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.6	U	mg/kg
Barium	1	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	26300		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	1.4	U	mg/kg
Iron	27.6		mg/kg
Lead	0.66	U	mg/kg
Magnesium	805		mg/kg
Manganese	4.2		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	3290		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	2140		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	79.9		mg/kg

Sample Number: S5F-6
Sample Date: 8/29/96
Laboratory ID: S685150A-7
QC Type: CS
% Moisture: 0
Location: S5F-6

	RESULT	QUAL	UNITS
Aluminum	2.8	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	2.5	U	mg/kg
Barium	0.85	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	22300		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	1.1	U	mg/kg
Iron	21.5	U	mg/kg
Lead	0.64	U	mg/kg
Magnesium	758		mg/kg
Manganese	4.1		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	3210		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	2050		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	75.7		mg/kg

Sample Number: S5F-7
Sample Date: 8/29/96
Laboratory ID: S685150A-8
QC Type: CS
% Moisture: 0
Location: S5F-7

	RESULT	QUAL	UNIT
Aluminum	9.3	U	mg/k
Antimony	2.4	U	mg/k
Arsenic	0.81	U	mg/k
Barium	3.5		mg/k
Beryllium	0.04	U	mg/k
Cadmium	0.53	U	mg/k
Calcium	14300		mg/k
Chromium	0.82	U	mg/k
Cobalt	0.37	U	mg/k
Copper	4.1	U	mg/k
Iron	42.4		mg/k
Lead	2.8		mg/k
Magnesium	669		mg/k
Manganese	1	U	mg/k
Mercury	0.01	U	mg/k
Nickel	0.85	U	mg/k
Potassium	3130		mg/k
Selenium	1	U	mg/k
Silver	0.23	U	mg/k
Sodium	2620		mg/k
Thallium	0.81	U	mg/k
Vanadium	0.45	U	mg/k
Zinc	66.2		mg/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR002

INORGANICS

Sample Number: S5F-8
Sample Date: 8/29/96
Laboratory ID: S685150A-9
QC Type: CS
% Moisture: 0
Location: S5F-8

	RESULT	QUAL	UNITS
Aluminum	27.6		mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.3	U	mg/kg
Barium	3.4		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	15100		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	2.3	U	mg/kg
Iron	46.9		mg/kg
Lead	3.3		mg/kg
Magnesium	694		mg/kg
Manganese	1	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2920		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	2750		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	63.2		mg/kg

Sample Number: S5F-9
Sample Date: 8/29/96
Laboratory ID: S685150A-10
QC Type: CS
% Moisture: 0
Location: S5F-9

	RESULT	QUAL	UNITS
Aluminum	8.3	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.1	U	mg/kg
Barium	3.4		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.71	U	mg/kg
Calcium	13400		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	1.5	U	mg/kg
Iron	35.8		mg/kg
Lead	2.5		mg/kg
Magnesium	598		mg/kg
Manganese	0.91	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2590		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	2180		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	58.3		mg/kg

ORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 29, 1997**
FROM:	**TERESA M. HUDSON**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA REVIEW – PEST/PCB ORGANICS**
CTO 007 – NAS KEY WEST, KEY WEST, FLORIDA
SDG – BR002

SAMPLES: 20/TISSUE/

S4F-21	S5F-5	S5F-10	S5F-15
S5F-1	S5F-6	S5F-11	S5F-16
S5F-2	S5F-7	S5F-12	S5F-17
S5F-3	S5F-8	S5F-13	S5F-18
S5F-4	S5F-9	S5F-14	S5F-19

The sample set for the CTO 007 NAS Key West site, SDG BR002, consists of twenty (20) tissue samples. All samples were analyzed for Target Compound List (TCL) pesticide/PCB organic compounds. The extract of sample S4F-10 for chlorinated pesticide analysis was lost during preparation and the analysis for this sample was canceled.

The samples were collected by Brown & Root Environmental on August 29, 1996 and analyzed by Savannah Laboratories & Environmental Services, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Method 8080 analytical and reporting protocols. The data was evaluated according to the following parameters:

- Holding times
- Initial and continuing calibrations
- * Laboratory and field blank analyses
- Surrogate spike recoveries
- * Compound Quantitation

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Pesticide/PCBs

The following pesticide compound was detected in the laboratory method blank at the maximum concentration indicated below:

Compound	Maximum Concentration	Action Level
4,4'-DDD	0.21 ug/Kg	1.05 ug/Kg
Methoxychlor	6.3 ug/Kg	31.5 ug/Kg

Samples Affected: All

Percent moisture, sample aliquot size, and dilution factors were considered prior to the application of the action level. Positive results in the affected samples for these compounds reported at concentrations below the detection limit were replaced with revised detection limits. Positive results below the detection limit and above the action level were qualified estimated, "J." Positive results below the action level were qualified nondetect, "U."

The laboratory qualifier "P" was removed from all target compound data with a %D above 25% and less than 100% between positive results on columns 1 and 2. The affected target compounds and samples are listed in the table below.

SAMPLE	AFFECTED COMPOUNDS
S4F-21	4,4'-DDE, 4,4'-DDT, Methoxychlor, Chlorobenzilate
S5F-1	Heptachlor epoxide, Dieldrin, 4,4'-DDD, Endrin aldehyde, Isodrin
S5F-2	Endosulfan I, Endosulfan II, 4,4'-DDT, Endrin aldehyde
S5F-3	Delta-BHC, 4,4'-DDT, Methoxychlor
S5F-4	Aldrin, Dieldrin, 4,4'-DDT, Endrin aldehyde
S5F-5	Aldrin, Dieldrin
S5F-6	Aldrin, Dieldrin
S5F-7	Endosulfan II, 4,4'-DDD, 4,4'-DDT
S5F-8	Endosulfan I, Dieldrin, Endosulfan II, 4,4'-DDD, 4,4'-DDT, Chlorobenzilate
S5F-9	Dieldrin, Endrin, Endosulfan sulfate
S5F-10	Endosulfan I, Dieldrin, Methoxychlor, Endrin aldehyde, Isodrin
S5F-11	4,4'-DDE, Endrin, 4,4'-DDD, 4,4'-DDT, Isodrin
S5F-12	4,4'-DDE, Endosulfan II, 4,4'-DDT, Methoxychlor
S5F-13	4,4'-DDE, 4,4'-DDT, Chlorobenzilate
S5F-14	Endosulfan sulfate, 4,4'-DDT
S5F-15	Chlorobenzilate
S5F-16	Endosulfan II, Isodrin
S5F-17	4,4'-DDE, Endrin
S5F-18	4,4'-DDE, Endosulfan II
S5F-19	Endrin, 4,4'-DDD, Isodrin

The laboratory qualifier "P" was removed from the target compound data for those compounds with a %D between columns 1 and 2 greater than 100%. Positive hits were estimated "J." The affected samples and target compounds are listed in the table below.

SAMPLE	AFFECTED COMPOUNDS
S4F-21	Endosulfan II, Endrin aldehyde
S5F-1	Beta-BHC, Endosulfan I, 4,4'-DDE, Endosulfan sulfate, 4,4'-DDT, Chlorobenzilate
S5F-2	Beta-BHC, Heptachlor, Dieldrin, 4,4'-DDE, 4,4'-DDD, Endosulfan sulfate, Chlorobenzilate

SAMPLE	AFFECTED COMPOUNDS
S5F-3	Heptachlor, Heptachlor epoxide, Endosulfan I, Dieldrin, 4,4'-DDE, Endosulfan II, 4,4'-DDD, Endrin aldehyde, Chlorobenzilate
S5F-4	Alpha-BHC, Heptachlor, Heptachlor epoxide, Endosulfan I, 4,4'-DDE, Endrin, Endosulfan II, 4,4'-DDD
S5F-5	Beta-BHC, Heptachlor, 4,4'-DDE, Endosulfan II, 4,4'-DDD, Endrin aldehyde, Chlorobenzilate
S5F-6	Heptachlor, 4,4'-DDE, Endosulfan II, 4,4'-DDD, Endrin aldehyde, Chlorobenzilate
S5F-7	Beta-BHC, Gamma-BHC (lindane), Heptachlor, Aldrin, Dieldrin, 4,4'-DDE, Endrin aldehyde
S5F-8	Beta-BHC, Delta-BHC, Heptachlor, Heptachlor epoxide, 4,4'-DDE, Endrin aldehyde
S5F-9	Beta-BHC, Gamma-BHC (lindane), Heptachlor, Endosulfan I, 4,4'-DDE, 4,4'-DDD
S5F-10	Heptachlor, 4,4'-DDE, Endosulfan II, Endosulfan sulfate, Chlorobenzilate
S5F-11	Heptachlor, Endosulfan I, Dieldrin, Endosulfan sulfate, Endrin aldehyde, Chlorobenzilate
S5F-12	Heptachlor, Endosulfan I, Dieldrin, Endosulfan sulfate, Endrin aldehyde, Chlorobenzilate
S5F-13	Heptachlor, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin aldehyde
S5F-14	Gamma-BHC (lindane), Heptachlor, Endosulfan I, Dieldrin, 4,4'-DDE, Endosulfan II, Endrin aldehyde, Chlorobenzilate, Isodrin
S5F-15	Endosulfan I, Dieldrin, 4,4'-DDE, Endrin, Endosulfan sulfate, Endrin aldehyde, Isodrin
S5F-16	Heptachlor, Endosulfan I, Dieldrin, 4,4'-DDE, Endosulfan sulfate, 4,4'-DDT, Endrin aldehyde, Chlorobenzilate
S5F-17	Heptachlor, Endosulfan I, Dieldrin, Endosulfan sulfate, 4,4'-DDT, Endrin aldehyde, Chlorobenzilate, Isodrin
S5F-18	Endosulfan I, Dieldrin, Endosulfan sulfate, 4,4'-DDT, Endrin aldehyde, Chlorobenzilate, Isodrin
S5F-19	Heptachlor, Endosulfan I, Dieldrin, 4,4'-DDE, Endosulfan II, Endosulfan sulfate, 4,4'-DDT, Endrin aldehyde, Chlorobenzilate

Due to coelution matrix interference on one of the GC columns, confirmation of Aldrin in sample S5F-8 was not feasible. Thus, the Endosulfan sulfate concentration reported for this sample is based on a single column. The laboratory qualifier "X" was removed and the estimated "J" was left to indicate estimated concentrations.

Due to coeluting matrix interference on one of the GC columns, confirmation of Endosulfan sulfate in S5F-8 was not feasible. Thus, the Endosulfan sulfate concentrations reported for this sample is based on a single column. The laboratory qualifier "X" was removed and the estimated "J" was left to indicate an estimated concentration.

Continuing Calibration Verifications (CCV) %D exceeded 25% for Endrin aldehyde, 4,4'-DDT, Heptachlor, Methoxychlor, Endosulfan sulfate, and Aroclor 1260. However, no actions were taken for CCV %D.

It was noted that Chlorobenzilate and Isodrin were not included in all CCVs.

High %Ds between positive results in columns 1 and 2 were reported for Methoxychlor and 4,4'-DDT in some samples, however no action was taken to qualify where this data was previously qualified for laboratory method blank contamination.

No other problems were noted.

Executive Summary

Laboratory Performance: Methoxychlor and 4,4'-DDT were detected in the laboratory method blank. Some pesticide/PCB compounds reported %Ds between positive results in columns 1 and 2 above the quality control limit of 25%, but not over 100%. Some pesticide/PCB compounds reported %Ds above 100%. Due to coeluting matrix interference on one of the GC columns, confirmation of multiple compounds was not feasible for some samples. Thus, the concentrations reported for these samples are based on a single column.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program" (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Teresa M. Hudson
Brown & Root Environmental
Teresa M. Hudson
Environmental Scientist/Data Validator

for
Brown & Root Environmental
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

NAS KEY WEST
SDG – BR002
TABLE 1 - RECOMMENDATION SUMMARY

Sample Number	PEST/PCB
S4F-21	A^1 $J^{1, 2, 3, 4, 5, 34}$
S5F-1	A^1 $J^{3, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16}$
S5F-2	$J^{3, 6, 10, 12, 14, 15, 17, 18, 19, 20, 21, 34}$
S5F-3	A^1 $J^{2, 3, 4, 8, 10, 15, 17, 19, 21, 22, 23, 34}$
S5F-4	$J^{2, 3, 8, 9, 10, 14, 17, 21, 23, 24, 25, 26, 34}$
S5F-5	$J^{2, 3, 4, 6, 9, 10, 15, 17, 21, 25}$
S5F-6	A^1 $J^{2, 3, 4, 9, 10, 15, 17, 21, 25}$
S5F-7	A^1 $J^{3, 4, 6, 10, 11, 17, 19, 20, 27, 28, 34}$
S5F-8	A^1 $J^{3, 4, 5, 6, 9, 10, 11, 17, 18, 20, 23, 29, 30, 34}$
S5F-9	A^1 $J^{3, 6, 8, 9, 10, 17, 21, 27, 32, 33}$
S5F-10	A^1 $J^{2, 3, 9, 10, 12, 14, 15, 16, 17, 18}$
S5F-11	A^1 $J^{1, 3, 4, 8, 11, 12, 15, 16, 17, 19, 33, 34}$
S5F-12	A^1 $J^{1, 3, 4, 8, 12, 15, 17, 19, 20, 34}$
S5F-13	$J^{1, 2, 3, 4, 5, 8, 12, 17, 34}$
S5F-14	$J^{2, 3, 4, 8, 10, 15, 17, 19, 27, 32, 34, 35}$
S5F-15	A^1 $J^{3, 4, 5, 8, 10, 12, 19, 26, 35}$
S5F-16	A^1 $J^{3, 4, 8, 10, 12, 13, 15, 16, 17, 19, 20}$
S5F-17	A^1 $J^{1, 3, 4, 8, 12, 13, 15, 17, 19, 33, 35}$
S5F-18	$J^{1, 3, 4, 8, 11, 12, 13, 15, 19, 20, 35}$
S5F-19	$J^{2, 3, 4, 8, 10, 11, 12, 13, 15, 16, 17, 19, 33}$

If the field is left blank, the qualifier is A - Accept all data.

A^1 Accept data, but change positive results for methoxychlor to a revised detection limit and qualify as non-detected, (U) for blank contamination.

J^1 Removed the laboratory qualifier (P) for 4,4'-DDE, used to indicate a high %D. No further action was taken.

J^2 Removed the laboratory qualifier (P) for endosulfan II and estimated (J), as result of %D above 100%.

J^3 Positive results below the CRQL were estimated (J).

J^4 Removed laboratory qualifier (P) for endrin aldehyde and estimated (J), as result of %D above 100.

J^5 Removed laboratory qualifier (P) for chlorobenzilate, used to indicate a high %D. No further action was taken.

J^6 Removed laboratory qualifier (P) for beta-BHC and estimated (J), as result of %D above 100.

J^7 Removed laboratory qualifier (P) for heptachlor epoxide, used to indicate a high %D. No further action was taken.

J^8 Removed laboratory qualifier (P) for endosulfan I and estimated (J), as result of %D above 100.

J^9 Removed laboratory qualifier (P) for dieldrin, used to indicate a high %D. No further action was taken.

J^{10} Removed the laboratory qualifier (P) for 4,4'-DDE and estimated (J), as result of %D above 100%.

J[11] Removed laboratory qualifier (P) for 4,4'-DDD, used to indicate a high %D. No further action was taken.

J[12] Removed the laboratory qualifier (P) for endosulfan sulfate and estimated (J), as result of %D above 100%.

J[13] Removed the laboratory qualifier (P) for 4,4'-DDT and estimated (J), as result of %D above 100%.

J[14] Removed the laboratory qualifier (P) for endrin aldehyde, used to indicate a high %D. No further action was taken.

J[15] Removed the laboratory qualifier (P) for chlorobenzilate and estimated (J), as result of %D above 100%.

J[16] Removed the laboratory qualifier (P) for isodrin, used to indicate a high %D. No further action was taken.

J[17] Removed the laboratory qualifier (P) for heptachlor and estimated (J), as result of %D above 100%.

J[18] Removed the laboratory qualifier (P) for endosulfan I, used to indicate a high %D. No further action was taken.

J[19] Removed the laboratory qualifier (P) for dieldrin and estimated (J), as result of %D above 100%.

J[20] Removed the laboratory qualifier (P) for endosulfan II, used to indicate a high %D. No further action was taken.

J[21] Removed the laboratory qualifier (P) for 4,4'-DDD and estimated (J), as result of %D above 100%.

J[22] Removed the laboratory qualifier (P) for delta-BHC, used to indicate a high %D. No further action was taken.

J[23] Removed the laboratory qualifier (P) for heptachlor epoxide and estimated (J), as result of %D above 100%.

J[24] Removed the laboratory qualifier (P) for alpha-BHC and estimated (J), as result of %D above 100%.

J[25] Removed the laboratory qualifier (P) for aldrin, used to indicate a high %D. No further action was taken.

J[26] Removed the laboratory qualifier (P) for endrin and estimated (J), as result of %D above 100%.

J[27] Removed the laboratory qualifier (P) for gamma-BHC (lindane) and estimated (J), as result of %D above 100%.

J[28] Removed the laboratory qualifier (P) for aldrin and estimated (J), as result of %D above 100%.

J[29] Removed the laboratory qualifier (P) for delta-BHC and estimated (J), as result of %D above 100%.

J[30] Removed the laboratory qualifier (X) which indicates that the results for aldrin are based on one column. Qualified as estimate (J).

J[31] Removed the laboratory qualifier (X) which indicates that the results for endosulfan sulfate are based on one column. Qualified as estimate (J).

J[32] Removed the laboratory qualifier (P) for endosulfan sulfate, used to indicate a high %D. No further action was taken.

J[33] Removed the laboratory qualifier (P) for endrin, used to indicate a high %D. No further action was taken.

J[34] Removed the laboratory qualifier (P) for 4,4'-DDT, used to indicate a high %D. No further action was taken.

J[35] Removed the laboratory qualifier (P) for isodrin and estimated (J), as result of %D above 100%.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR002

PESTICIDES/PCBs

Sample Number: S4F-21
Sample Date: 8/29/96
Laboratory ID: S685150A-1
QC Type: CS
% Moisture: 0
Location: S4F-21

	RESULT	QUAL	UNITS
4,4'-DDD	7.1	U	ug/kg
4,4'-DDE	3.8	J	ug/kg
4,4'-DDT	2.8	J	ug/kg
Aldrin	3.6	U	ug/kg
alpha-BHC	3.6	U	ug/kg
Aroclor-1016	71	U	ug/kg
Aroclor-1221	140	U	ug/kg
Aroclor-1232	71	U	ug/kg
Aroclor-1242	71	U	ug/kg
Aroclor-1248	71	U	ug/kg
Aroclor-1254	71	U	ug/kg
Aroclor-1260	71	U	ug/kg
beta-BHC	3.6	U	ug/kg
Chlordane	36	U	ug/kg
Chlorobenzilate	29	J	ug/kg
delta-BHC	3.6	U	ug/kg
Dieldrin	7.1	U	ug/kg
Endosulfan I	3.6	U	ug/kg
Endosulfan II	0.48	J	ug/kg
Endosulfan sulfate	7.1	U	ug/kg
Endrin	7.1	U	ug/kg
Endrin aldehyde	3.2	J	ug/kg
gamma-BHC	3.6	U	ug/kg
Heptachlor	3.6	U	ug/kg
Heptachlor epoxide	3.6	U	ug/kg
Isodrin	7.1	U	ug/kg
Methoxychlor	36	U	ug/kg
Toxaphene	360	U	ug/kg

Sample Number: S5F-1
Sample Date: 8/29/96
Laboratory ID: S685150A-2
QC Type: CS
% Moisture: 0
Location: S5F-1

	RESULT	QUAL	UNITS
4,4'-DDD	0.72	J	ug/kg
4,4'-DDE	1.6	J	ug/kg
4,4'-DDT	5	J	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	0.29	J	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	25	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	1.3	J	ug/kg
Endosulfan I	0.53	J	ug/kg
Endosulfan II	1.8	J	ug/kg
Endosulfan sulfate	0.83	J	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	5.2		ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	0.23	J	ug/kg
Isodrin	0.65	J	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: S5F-10
Sample Date: 8/29/96
Laboratory ID: S685150A-11
QC Type: CS
% Moisture: 0
Location: S5F-10

	RESULT	QUAL	UN
4,4'-DDD	0.97	J	ug
4,4'-DDE	1.6	J	ug
4,4'-DDT	4.1		ug
Aldrin	1.7	U	ug
alpha-BHC	1.7	U	ug
Aroclor-1016	33	U	ug
Aroclor-1221	67	U	ug
Aroclor-1232	33	U	ug
Aroclor-1242	33	U	ug
Aroclor-1248	33	U	ug
Aroclor-1254	33	U	ug
Aroclor-1260	33	U	ug
beta-BHC	1.7	U	ug
Chlordane	17	U	ug
Chlorobenzilate	28	J	ug
delta-BHC	1.7	U	ug
Dieldrin	1.7	J	ug
Endosulfan I	0.96	J	ug
Endosulfan II	0.38	J	ug
Endosulfan sulfate	1.9	J	ug
Endrin	3.3	U	ug
Endrin aldehyde	8.6		ug
gamma-BHC	1.7	U	ug
Heptachlor	0.9	J	ug
Heptachlor epoxide	0.34	J	ug
Isodrin	0.61	J	ug
Methoxychlor	17	U	ug
Toxaphene	170	U	ug

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Sample Number: S5F-11
Sample Date: 8/29/96
Laboratory ID: S685150A-12
QC Type: CS
% Moisture: 0
Location: S5F-11

	RESULT	QUAL	UNITS
4,4'-DDD	0.71	J	ug/kg
4,4'-DDE	2.4	J	ug/kg
4,4'-DDT	6.1		ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	34	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	0.42	J	ug/kg
Endosulfan I	0.5	J	ug/kg
Endosulfan II	0.97	J	ug/kg
Endosulfan sulfate	2.2	J	ug/kg
Endrin	0.74	J	ug/kg
Endrin aldehyde	8.4	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.75	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	0.61	J	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: S5F-12
Sample Date: 8/29/96
Laboratory ID: S685150A-13
QC Type: CS
% Moisture: 0
Location: S5F-12

	RESULT	QUAL	UNITS
4,4'-DDD	0.98	J	ug/kg
4,4'-DDE	2	J	ug/kg
4,4'-DDT	4.3		ug/kg
Aldrin	2.1	U	ug/kg
alpha-BHC	2.1	U	ug/kg
Aroclor-1016	41	U	ug/kg
Aroclor-1221	84	U	ug/kg
Aroclor-1232	41	U	ug/kg
Aroclor-1242	41	U	ug/kg
Aroclor-1248	41	U	ug/kg
Aroclor-1254	41	U	ug/kg
Aroclor-1260	41	U	ug/kg
beta-BHC	2.1	U	ug/kg
Chlordane	21	U	ug/kg
Chlorobenzilate	26	J	ug/kg
delta-BHC	2.1	U	ug/kg
Dieldrin	0.38	J	ug/kg
Endosulfan I	0.66	J	ug/kg
Endosulfan II	0.82	J	ug/kg
Endosulfan sulfate	2.4	J	ug/kg
Endrin	4.1	U	ug/kg
Endrin aldehyde	9	J	ug/kg
gamma-BHC	2.1	U	ug/kg
Heptachlor	0.69	J	ug/kg
Heptachlor epoxide	2.1	U	ug/kg
Isodrin	0.9	J	ug/kg
Methoxychlor	21	U	ug/kg
Toxaphene	210	U	ug/kg

Sample Number: S5F-13
Sample Date: 8/29/96
Laboratory ID: S685150A-14
QC Type: CS
% Moisture: 0
Location: S5F-13

	RESULT	QUAL	U
4,4'-DDD	3.3	U	u
4,4'-DDE	2.2	J	u
4,4'-DDT	6.5		u
Aldrin	1.7	U	u
alpha-BHC	1.7	U	u
Aroclor-1016	33	U	u
Aroclor-1221	67	U	u
Aroclor-1232	33	U	u
Aroclor-1242	33	U	u
Aroclor-1248	33	U	u
Aroclor-1254	33	U	u
Aroclor-1260	33	U	u
beta-BHC	1.7	U	u
Chlordane	17	U	u
Chlorobenzilate	41		u
delta-BHC	1.7	U	u
Dieldrin	0.5	J	u
Endosulfan I	0.34	J	u
Endosulfan II	0.46	J	u
Endosulfan sulfate	2.4	J	u
Endrin	0.64	J	u
Endrin aldehyde	7.4	J	u
gamma-BHC	1.7	U	u
Heptachlor	0.36	J	u
Heptachlor epoxide	1.7	U	u
Isodrin	3.3	U	u
Methoxychlor	17	U	u
Toxaphene	170	U	u

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Sample Number: S5F-14
Sample Date: 8/29/96
Laboratory ID: S685150A-15
QC Type: CS
% Moisture: 0
Location: S5F-14

	RESULT	QUAL	UNITS
4,4'-DDD	1.1	J	ug/kg
4,4'-DDE	2.4	J	ug/kg
4,4'-DDT	5		ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	33	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	0.46	J	ug/kg
Endosulfan I	0.9	J	ug/kg
Endosulfan II	0.64	J	ug/kg
Endosulfan sulfate	5.1		ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	7.4	J	ug/kg
gamma-BHC	0.11	J	ug/kg
Heptachlor	0.68	J	ug/kg
Heptachlor epoxide	0.36	J	ug/kg
Isodrin	0.57	J	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: S5F-15
Sample Date: 8/29/96
Laboratory ID: S685150A-16
QC Type: CS
% Moisture: 0
Location: S5F-15

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	2.1	J	ug/kg
4,4'-DDT	3.5		ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	45		ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	0.62	J	ug/kg
Endosulfan I	0.71	J	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	0.58	J	ug/kg
Endrin	0.46	J	ug/kg
Endrin aldehyde	2.9	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	0.46	J	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: S5F-16
Sample Date: 8/29/96
Laboratory ID: S685150A-17
QC Type: CS
% Moisture: 0
Location: S5F-16

	RESULT	QUAL	UN
4,4'-DDD	0.67	J	ug
4,4'-DDE	2.6	J	ug
4,4'-DDT	4.7	J	ug
Aldrin	1.7	U	ug
alpha-BHC	1.7	U	ug
Aroclor-1016	33	U	ug
Aroclor-1221	67	U	ug
Aroclor-1232	33	U	ug
Aroclor-1242	33	U	ug
Aroclor-1248	33	U	ug
Aroclor-1254	33	U	ug
Aroclor-1260	33	U	ug
beta-BHC	1.7	U	ug
Chlordane	17	U	ug
Chlorobenzilate	45	J	ug
delta-BHC	1.7	U	ug
Dieldrin	0.48	J	ug
Endosulfan I	0.72	J	ug
Endosulfan II	0.58	J	ug
Endosulfan sulfate	2.5	J	ug
Endrin	0.63	J	ug
Endrin aldehyde	8	J	ug
gamma-BHC	1.7	U	ug
Heptachlor	0.23	J	ug
Heptachlor epoxide	0.47	J	ug
Isodrin	1.1	J	ug
Methoxychlor	17	U	ug
Toxaphene	170	U	ug

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Sample Number: S5F-17
Sample Date: 8/29/96
Laboratory ID: S685150A-18
QC Type: CS
% Moisture: 0
Location: S5F-17

	RESULT	QUAL	UNITS
4,4'-DDD	1.3	J	ug/kg
4,4'-DDE	3	J	ug/kg
4,4'-DDT	5.9	J	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	40	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	0.87	J	ug/kg
Endosulfan I	0.5	J	ug/kg
Endosulfan II	1.7	J	ug/kg
Endosulfan sulfate	4.8	J	ug/kg
Endrin	0.96	J	ug/kg
Endrin aldehyde	7.6	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.79	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	0.65	J	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: S5F-18
Sample Date: 8/29/96
Laboratory ID: S685150A-19
QC Type: CS
% Moisture: 0
Location: S5F-18

	RESULT	QUAL	UNITS
4,4'-DDD	0.56	J	ug/kg
4,4'-DDE	2	J	ug/kg
4,4'-DDT	5.2	J	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	22	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	0.46	J	ug/kg
Endosulfan I	0.87	J	ug/kg
Endosulfan II	0.79	J	ug/kg
Endosulfan sulfate	4.3	J	ug/kg
Endrin	0.83	J	ug/kg
Endrin aldehyde	4.8	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	0.31	J	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: S5F-19
Sample Date: 8/29/96
Laboratory ID: S685150A-20
QC Type: CS
% Moisture: 0
Location: S5F-19

	RESULT	QUAL	UN
4,4'-DDD	0.58	J	ug
4,4'-DDE	2.5	J	ug
4,4'-DDT	4.5	J	ug
Aldrin	1.7	U	ug
alpha-BHC	1.7	U	ug
Aroclor-1016	33	U	ug
Aroclor-1221	67	U	ug
Aroclor-1232	33	U	ug
Aroclor-1242	33	U	ug
Aroclor-1248	33	U	ug
Aroclor-1254	33	U	ug
Aroclor-1260	33	U	ug
beta-BHC	1.7	U	ug
Chlordane	17	U	ug
Chlorobenzilate	30	J	ug
delta-BHC	1.7	U	ug
Dieldrin	1.2	J	ug
Endosulfan I	0.79	J	ug
Endosulfan II	0.48	J	ug
Endosulfan sulfate	5.6	J	ug
Endrin	1.1	J	ug
Endrin aldehyde	7.7	J	ug
gamma-BHC	1.7	U	ug
Heptachlor	0.29	J	ug
Heptachlor epoxide	0.27	J	ug
Isodrin	0.44	J	ug
Methoxychlor	17	U	ug
Toxaphene	170	U	ug

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Sample Number: S5F-2
Sample Date: 8/29/96
Laboratory ID: S685150A-3
QC Type: CS
% Moisture: 0
Location: S5F-2

	RESULT	QUAL	UNITS
4,4'-DDD	0.6	J	ug/kg
4,4'-DDE	2.4	J	ug/kg
4,4'-DDT	3.2	J	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	2.1	J	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	38	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	0.8	J	ug/kg
Endosulfan I	0.88	J	ug/kg
Endosulfan II	1	J	ug/kg
Endosulfan sulfate	1.7	J	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	8.6		ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.32	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: S5F-3
Sample Date: 8/29/96
Laboratory ID: S685150A-4
QC Type: CS
% Moisture: 0
Location: S5F-3

	RESULT	QUAL	UNITS
4,4'-DDD	0.7	J	ug/kg
4,4'-DDE	2.1	J	ug/kg
4,4'-DDT	2.6	J	ug/kg
Aldrin	2	U	ug/kg
alpha-BHC	2	U	ug/kg
Aroclor-1016	38	U	ug/kg
Aroclor-1221	77	U	ug/kg
Aroclor-1232	38	U	ug/kg
Aroclor-1242	38	U	ug/kg
Aroclor-1248	38	U	ug/kg
Aroclor-1254	38	U	ug/kg
Aroclor-1260	38	U	ug/kg
beta-BHC	2	U	ug/kg
Chlordane	20	U	ug/kg
Chlorobenzilate	36	J	ug/kg
delta-BHC	0.37	J	ug/kg
Dieldrin	0.95	J	ug/kg
Endosulfan I	0.66	J	ug/kg
Endosulfan II	0.8	J	ug/kg
Endosulfan sulfate	3.8	U	ug/kg
Endrin	3.8	U	ug/kg
Endrin aldehyde	7	J	ug/kg
gamma-BHC	2	U	ug/kg
Heptachlor	0.75	J	ug/kg
Heptachlor epoxide	0.24	J	ug/kg
Isodrin	3.8	U	ug/kg
Methoxychlor	20	U	ug/kg
Toxaphene	200	U	ug/kg

Sample Number: S5F-4
Sample Date: 8/29/96
Laboratory ID: S685150A-5
QC Type: CS
% Moisture: 0
Location: S5F-4

	RESULT	QUAL	UI
4,4'-DDD	0.62	J	u
4,4'-DDE	3.8	J	u
4,4'-DDT	3.6	J	u
Aldrin	3.8		u
alpha-BHC	0.47	J	u
Aroclor-1016	50	U	u
Aroclor-1221	100	U	u
Aroclor-1232	50	U	u
Aroclor-1242	50	U	u
Aroclor-1248	50	U	u
Aroclor-1254	50	U	u
Aroclor-1260	50	U	u
beta-BHC	2.6	U	u
Chlordane	26	U	u
Chlorobenzilate	26	U	u
delta-BHC	2.6	U	u
Dieldrin	1.8	J	u
Endosulfan I	0.84	J	u
Endosulfan II	1.1	J	u
Endosulfan sulfate	5	U	u
Endrin	1.1	J	u
Endrin aldehyde	16		u
gamma-BHC	2.6	U	u
Heptachlor	0.75	J	u
Heptachlor epoxide	0.4	J	u
Isodrin	5	U	u
Methoxychlor	26	U	u
Toxaphene	260	U	u

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Sample Number: S5F-5
Sample Date: 8/29/96
Laboratory ID: S685150A-6
QC Type: CS
% Moisture: 0
Location: S5F-5

	RESULT	QUAL	UNITS
4,4'-DDD	0.26	J	ug/kg
4,4'-DDE	3.5	J	ug/kg
4,4'-DDT	1.7	J	ug/kg
Aldrin	1.1	J	ug/kg
alpha-BHC	2.3	U	ug/kg
Aroclor-1016	45	U	ug/kg
Aroclor-1221	91	U	ug/kg
Aroclor-1232	45	U	ug/kg
Aroclor-1242	45	U	ug/kg
Aroclor-1248	45	U	ug/kg
Aroclor-1254	45	U	ug/kg
Aroclor-1260	45	U	ug/kg
beta-BHC	0.29	J	ug/kg
Chlordane	23	U	ug/kg
Chlorobenzilate	31	J	ug/kg
delta-BHC	2.3	U	ug/kg
Dieldrin	1.2	J	ug/kg
Endosulfan I	2.3	U	ug/kg
Endosulfan II	0.26	J	ug/kg
Endosulfan sulfate	4.5	U	ug/kg
Endrin	4.5	U	ug/kg
Endrin aldehyde	10	J	ug/kg
gamma-BHC	2.3	U	ug/kg
Heptachlor	0.32	J	ug/kg
Heptachlor epoxide	2.3	U	ug/kg
Isodrin	4.5	U	ug/kg
Methoxychlor	23	U	ug/kg
Toxaphene	230	U	ug/kg

Sample Number: S5F-6
Sample Date: 8/29/96
Laboratory ID: S685150A-7
QC Type: CS
% Moisture: 0
Location: S5F-6

	RESULT	QUAL	UNITS
4,4'-DDD	0.27	J	ug/kg
4,4'-DDE	1.8	J	ug/kg
4,4'-DDT	2.3	J	ug/kg
Aldrin	0.29	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	23	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	0.82	J	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	0.29	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	9.7	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.35	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: S5F-7
Sample Date: 8/29/96
Laboratory ID: S685150A-8
QC Type: CS
% Moisture: 0
Location: S5F-7

	RESULT	QUAL	UN
4,4'-DDD	0.51	J	ug/
4,4'-DDE	2.4	J	ug/
4,4'-DDT	1.6	J	ug/
Aldrin	0.29	J	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	33	U	ug/
beta-BHC	0.34	J	ug/
Chlordane	17	U	ug/
Chlorobenzilate	17	U	ug/
delta-BHC	0.33	J	ug/
Dieldrin	1	J	ug/
Endosulfan I	2		ug/
Endosulfan II	0.82	J	ug/
Endosulfan sulfate	3.3	U	ug/
Endrin	3.3	U	ug/
Endrin aldehyde	6.8	J	ug/
gamma-BHC	0.098	J	ug/
Heptachlor	0.61	J	ug/
Heptachlor epoxide	1.7	U	ug/
Isodrin	3.3	U	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR002

PESTICIDES/PCBs

Sample Number: S5F-8
Sample Date: 8/29/96
Laboratory ID: S685150A-9
QC Type: CS
% Moisture: 0
Location: S5F-8

	RESULT	QUAL	UNITS
4,4'-DDD	0.77	J	ug/kg
4,4'-DDE	2.6	J	ug/kg
4,4'-DDT	3.2	J	ug/kg
Aldrin	0.41	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	0.098	J	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	42		ug/kg
delta-BHC	0.16	J	ug/kg
Dieldrin	2.6	J	ug/kg
Endosulfan I	2.4		ug/kg
Endosulfan II	1.3	J	ug/kg
Endosulfan sulfate	6.1	J	ug/kg
Endrin	0.55	J	ug/kg
Endrin aldehyde	7.2	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.73	J	ug/kg
Heptachlor epoxide	0.31	J	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: S5F-9
Sample Date: 8/29/96
Laboratory ID: S685150A-10
QC Type: CS
% Moisture: 0
Location: S5F-9

	RESULT	QUAL	UNITS
4,4'-DDD	0.099	J	ug/kg
4,4'-DDE	2	J	ug/kg
4,4'-DDT	3.7		ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.2	J	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	36		ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	2.2	J	ug/kg
Endosulfan I	0.71	J	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	0.9	J	ug/kg
Endrin	0.52	J	ug/kg
Endrin aldehyde	6.3		ug/kg
gamma-BHC	0.91	J	ug/kg
Heptachlor	0.54	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

INORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 17, 1997**
FROM:	**JULEA F. BRADLEY**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA REVIEW – TAL METALS**
CTO 007 – KEY WEST, FLORIDA
SDG – BR003 (S685150B)

SAMPLES: 20/Tissue:

AC-28	AF-10	AF-19	AF-20
AF-21	AF-22	AF-26	AF-31
AF-32	AF-33	AF-34	AF-35
AF-36	AF-37	S5F-20	S5F-21
S5F-22	S5F-23	S5F-24	S5F-25

Overview

The sample set for CTO 007, Key West, BR003 (S685150B) consists of twenty (20) tissue environmental samples. All samples were analyzed for Target Analyte List (TAL) metals. The samples were collected by Brown & Root Environmental on August 29, 1996 and analyzed by Savannah Laboratories under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- Calibration Verifications
- * Laboratory Blank Analyses
- Matrix Spike Results

*Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/preparation/field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level (tissue)
aluminum	30 ug/L	30 mg/kg
arsenic	3.5 ug/L	3.5 mg/kg
barium	1.8 ug/L	1.8 mg/kg
cadmium	2.8 ug/L	2.8 mg/kg
calcium*	5.914 mg/kg	29.57 mg/kg
cobalt	3.2 ug/L	3.2 mg/kg
copper	7.6 ug/L	7.6 mg/kg
iron	29.2 ug/L	29.2 mg/kg
magnesium	23.6 ug/L	23.6 mg/kg
mercury*	0.019 mg/kg	0.095 mg/kg
silver	1.9 ug/L	1.9 mg/kg
sodium	51.3 ug/L	51.3 mg/kg
zinc	2.6 ug/L	2.6 mg/kg

* Maximum concentration found in the preparation blank.

Samples affected: All

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for aluminum, arsenic, barium, cadmium, cobalt, copper, iron, and mercury have been qualified as nondetected, "U." No action was taken for the remaining analytes since either the results were greater than the action level or were nondetects.

Notes

The Contract Required Control Limit (CRDL) Standard percent recoveries (%R) for cadmium exceeded the control limits. However, no validation actions were taken for CRDL Standard %Rs.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method/preparation blanks.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed in accordance with the "National Functional Guidelines for Inorganic Review," February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.
"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Julea F. Bradley
Brown & Root Environmental
Julea F. Bradley
Environmental Scientist/Data Validator

Teresa M. Hudson
Brown & Root Environmental
for Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

KEY WEST
SDG BR003

TABLE 1 - RECOMMENDATION SUMMARY

Aluminum	A^1	Magnesium	
Antimony		Manganese	
Arsenic	A^1	Mercury	A^1
Barium	A^1	Nickel	
Beryllium		Potassium	
Cadmium	A^1	Selenium	
Calcium		Silver	
Chromium		Sodium	
Cobalt	A^1	Thallium	
Copper	A^1	Vanadium	
Iron	A^1	Zinc	
Lead			

If the field is left blank, the qualifier is A - Accept all data.

A^1 - Accept data but qualify as nondetected, "U," as a result of laboratory blank contamination.

APPENDIX A
Qualified Analytical Results

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR003

INORGANICS

Sample Number: AC-28
Sample Date: 8/29/96
Laboratory ID: S685150B-20
QC Type: CS
% Moisture: 0
Location: AC-28

	RESULT	QUAL	UNITS
Aluminum	6.9	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	2.6	U	mg/kg
Barium	4.1		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	69800		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	16.5		mg/kg
Iron	34.4		mg/kg
Lead	0.52		mg/kg
Magnesium	8290		mg/kg
Manganese	56		mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	1960		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	4180		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	56.2		mg/kg

Sample Number: AF-10
Sample Date: 8/29/96
Laboratory ID: S685150B-18
QC Type: CS
% Moisture: 0
Location: AF-10

	RESULT	QUAL	UNITS
Aluminum	1.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.2	U	mg/kg
Barium	0.78	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	9770		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	0.58	U	mg/kg
Iron	6.8	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	479		mg/kg
Manganese	4.3		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2720		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1520		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	32.9		mg/kg

Sample Number: AF-19
Sample Date: 8/29/96
Laboratory ID: S685150B-17
QC Type: CS
% Moisture: 0
Location: AF-19

	RESULT	QUAL	UNIT
Aluminum	1.7	U	mg/k
Antimony	2.4	U	mg/k
Arsenic	0.94	U	mg/k
Barium	0.81	U	mg/k
Beryllium	0.04	U	mg/k
Cadmium	0.53	U	mg/k
Calcium	8840		mg/k
Chromium	0.82	U	mg/k
Cobalt	0.37	U	mg/k
Copper	0.49	U	mg/k
Iron	5.3	U	mg/k
Lead	0.34	U	mg/k
Magnesium	472		mg/k
Manganese	2.8		mg/k
Mercury	0.01	U	mg/k
Nickel	0.85	U	mg/k
Potassium	2740		mg/k
Selenium	1	U	mg/k
Silver	0.23	U	mg/k
Sodium	1570		mg/k
Thallium	0.81	U	mg/k
Vanadium	0.45	U	mg/k
Zinc	25.3		mg/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR003

INORGANICS

Sample Number: AF-20
Sample Date: 8/29/96
Laboratory ID: S685150B-15
QC Type: CS
% Moisture: 0
Location: AF-20

	RESULT	QUAL	UNITS
Aluminum	1.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.5	U	mg/kg
Barium	0.9	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	12700		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.45	U	mg/kg
Copper	1	U	mg/kg
Iron	12.2	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	508		mg/kg
Manganese	4.2		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2440		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1460		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	37.8		mg/kg

Sample Number: AF-21
Sample Date: 8/29/96
Laboratory ID: S685150B-14
QC Type: CS
% Moisture: 0
Location: AF-21

	RESULT	QUAL	UNITS
Aluminum	45.3		mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.6	U	mg/kg
Barium	1.4	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	15400		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	1.4	U	mg/kg
Iron	14.5	U	mg/kg
Lead	0.4		mg/kg
Magnesium	665		mg/kg
Manganese	6.1		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	3210		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1880		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	49.5		mg/kg

Sample Number: AF-22
Sample Date: 8/29/96
Laboratory ID: S685150B-16
QC Type: CS
% Moisture: 0
Location: AF-22

	RESULT	QUAL	UNIT
Aluminum	1.7	U	mg/k
Antimony	2.4	U	mg/k
Arsenic	1.4	U	mg/k
Barium	0.65	U	mg/k
Beryllium	0.04	U	mg/k
Cadmium	0.53	U	mg/k
Calcium	10000		mg/k
Chromium	0.82	U	mg/k
Cobalt	0.37	U	mg/k
Copper	0.42	U	mg/k
Iron	10.5	U	mg/k
Lead	0.34	U	mg/k
Magnesium	473		mg/k
Manganese	3.8		mg/k
Mercury	0.01	U	mg/k
Nickel	0.85	U	mg/k
Potassium	2700		mg/k
Selenium	1	U	mg/k
Silver	0.23	U	mg/k
Sodium	1460		mg/k
Thallium	0.81	U	mg/k
Vanadium	0.45	U	mg/k
Zinc	30.5		mg/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR003

INORGANICS

Sample Number: AF-26
Sample Date: 8/29/96
Laboratory ID: S685150B-19
QC Type: CS
% Moisture: 0
Location: AF-26

	RESULT	QUAL	UNITS
Aluminum	3.8	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.7	U	mg/kg
Barium	5.7		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	19400		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	5.2	U	mg/kg
Iron	25.4	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	699		mg/kg
Manganese	6.9		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2930		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	2140		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	29.7		mg/kg

Sample Number: AF-31
Sample Date: 8/29/96
Laboratory ID: S685150B-8
QC Type: CS
% Moisture: 0
Location: AF-31

	RESULT	QUAL	UNITS
Aluminum	4.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.7	U	mg/kg
Barium	3.6		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	15900		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	7	U	mg/kg
Iron	52.8		mg/kg
Lead	0.35		mg/kg
Magnesium	641		mg/kg
Manganese	5.2		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2990		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	2230		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	28.3		mg/kg

Sample Number: AF-32
Sample Date: 8/29/96
Laboratory ID: S685150B-13
QC Type: CS
% Moisture: 0
Location: AF-32

	RESULT	QUAL	UN
Aluminum	2.9	U	mg
Antimony	2.4	U	mg
Arsenic	1.6	U	mg
Barium	5.3		mg
Beryllium	0.04	U	mg
Cadmium	0.53	U	mg
Calcium	20700		mg
Chromium	0.82	U	mg
Cobalt	0.37	U	mg
Copper	13.4		mg
Iron	38.7		mg
Lead	0.43		mg
Magnesium	702		mg
Manganese	7.6		mg
Mercury	0.01	U	mg
Nickel	0.85	U	mg
Potassium	3190		mg
Selenium	1	U	mg
Silver	0.23	U	mg
Sodium	2330		mg
Thallium	0.81	U	mg
Vanadium	0.45	U	mg
Zinc	31.4		mg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR003

INORGANICS

Sample Number: AF-33
Sample Date: 8/29/96
Laboratory ID: S685150B-7
QC Type: CS
% Moisture: 0
Location: AF-33

	RESULT	QUAL	UNITS
Aluminum	2.6	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.5	U	mg/kg
Barium	2.8		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	12400		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	4.7	U	mg/kg
Iron	26.8	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	577		mg/kg
Manganese	4.8		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2970		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	2090		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	25.1		mg/kg

Sample Number: AF-34
Sample Date: 8/29/96
Laboratory ID: S685150B-9
QC Type: CS
% Moisture: 0
Location: AF-34

	RESULT	QUAL	UNITS
Aluminum	2.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.5	U	mg/kg
Barium	2.2		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	14900		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	0.68	U	mg/kg
Iron	21.2	U	mg/kg
Lead	0.41		mg/kg
Magnesium	627		mg/kg
Manganese	7.2		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	3020		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1770		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	46.5		mg/kg

Sample Number: AF-35
Sample Date: 8/29/96
Laboratory ID: S685150B-10
QC Type: CS
% Moisture: 0
Location: AF-35

	RESULT	QUAL	UNI
Aluminum	1.7	U	mg/
Antimony	2.4	U	mg/
Arsenic	0.54	U	mg/
Barium	0.32	U	mg/
Beryllium	0.04	U	mg/
Cadmium	0.53	U	mg/
Calcium	6120		mg/
Chromium	0.82	U	mg/l
Cobalt	0.37	U	mg/l
Copper	0.34	U	mg/l
Iron	4.1	U	mg/l
Lead	0.34	U	mg/l
Magnesium	233		mg/l
Manganese	2.1		mg/l
Mercury	0.01	U	mg/l
Nickel	0.85	U	mg/l
Potassium	1100		mg/l
Selenium	1	U	mg/l
Silver	0.23	U	mg/l
Sodium	650		mg/l
Thallium	0.81	U	mg/l
Vanadium	0.45	U	mg/l
Zinc	13.9		mg/l

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR003

INORGANICS

Sample Number: AF-36
Sample Date: 8/29/96
Laboratory ID: S685150B-12
QC Type: CS
% Moisture: 0
Location: AF-36

	RESULT	QUAL	UNITS
Aluminum	3.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.5	U	mg/kg
Barium	1.3	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	15600		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	1.5	U	mg/kg
Iron	13.1	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	654		mg/kg
Manganese	7		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2900		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1830		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	55.6		mg/kg

Sample Number: AF-37
Sample Date: 8/29/96
Laboratory ID: S685150B-11
QC Type: CS
% Moisture: 0
Location: AF-37

	RESULT	QUAL	UNITS
Aluminum	1.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.7	U	mg/kg
Barium	1	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.6	U	mg/kg
Calcium	16000		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.42	U	mg/kg
Copper	1.3	U	mg/kg
Iron	15.5	U	mg/kg
Lead	0.53		mg/kg
Magnesium	668		mg/kg
Manganese	6.9		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2940		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1940		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	54.7		mg/kg

Sample Number: S5F-20
Sample Date: 8/29/96
Laboratory ID: S685150B-1
QC Type: CS
% Moisture: 0
Location: S5F-20

	RESULT	QUAL	UNIT
Aluminum	3.2	U	mg/k
Antimony	2.4	U	mg/k
Arsenic	0.98	U	mg/k
Barium	3		mg/k
Beryllium	0.04	U	mg/k
Cadmium	0.57	U	mg/k
Calcium	12100		mg/k
Chromium	0.89		mg/k
Cobalt	0.37	U	mg/k
Copper	1.7	U	mg/k
Iron	28.3	U	mg/k
Lead	2.3		mg/k
Magnesium	553		mg/k
Manganese	0.67		mg/k
Mercury	0.01	U	mg/k
Nickel	0.85	U	mg/k
Potassium	2890		mg/k
Selenium	1	U	mg/k
Silver	0.23	U	mg/k
Sodium	2300		mg/k
Thallium	0.81	U	mg/k
Vanadium	0.45	U	mg/k
Zinc	52.3		mg/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR003

INORGANICS

Sample Number: S5F-21
Sample Date: 8/26/96
Laboratory ID: S685150B-2
QC Type: CS
% Moisture: 0
Location: S5F-21

	RESULT	QUAL	UNITS
Aluminum	6.1	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.4	U	mg/kg
Barium	7.3		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	11100		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	2.9	U	mg/kg
Iron	38.4		mg/kg
Lead	1.7		mg/kg
Magnesium	581		mg/kg
Manganese	2.4		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2680		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	2400		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	43.5		mg/kg

Sample Number: S5F-22
Sample Date: 8/26/96
Laboratory ID: S685150B-3
QC Type: CS
% Moisture: 0
Location: S5F-22

	RESULT	QUAL	UNITS
Aluminum	2.9	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	2.4	U	mg/kg
Barium	1.3	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	22800		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.42	U	mg/kg
Copper	1.7	U	mg/kg
Iron	26.9	U	mg/kg
Lead	0.63		mg/kg
Magnesium	820		mg/kg
Manganese	4.4		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	3420		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	2280		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	85.8		mg/kg

Sample Number: S5F-23
Sample Date: 8/29/96
Laboratory ID: S685150B-4
QC Type: CS
% Moisture: 0
Location: S5F-23

	RESULT	QUAL	UNIT
Aluminum	2.8	U	mg/k
Antimony	2.4	U	mg/k
Arsenic	2.8	U	mg/k
Barium	1.2	U	mg/k
Beryllium	0.04	U	mg/k
Cadmium	0.64	U	mg/k
Calcium	19600		mg/k
Chromium	0.82	U	mg/k
Cobalt	0.37	U	mg/k
Copper	1.9	U	mg/k
Iron	23.7	U	mg/k
Lead	0.56		mg/k
Magnesium	722		mg/k
Manganese	3.8		mg/k
Mercury	0.01	U	mg/k
Nickel	0.85	U	mg/k
Potassium	3330		mg/k
Selenium	1	U	mg/k
Silver	0.23	U	mg/k
Sodium	2210		mg/k
Thallium	0.81	U	mg/k
Vanadium	0.45	U	mg/k
Zinc	86.5		mg/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR003

INORGANICS

Sample Number: S5F-24
Sample Date: 8/29/96
Laboratory ID: S685150B-5
QC Type: CS
% Moisture: 0
Location: S5F-24

	RESULT	QUAL	UNITS
Aluminum	1.8	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	2.7	U	mg/kg
Barium	2		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	19000		mg/kg
Chromium	1.1		mg/kg
Cobalt	0.82	U	mg/kg
Copper	2.4	U	mg/kg
Iron	19.7	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	689		mg/kg
Manganese	4.1		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	3350		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	2220		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	82.1		mg/kg

Sample Number: S5F-25
Sample Date: 8/29/96
Laboratory ID: S685150B-6
QC Type: CS
% Moisture: 0
Location: S5F-25

	RESULT	QUAL	UNITS
Aluminum	4.2	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.8	U	mg/kg
Barium	3		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	19600		mg/kg
Chromium	0.86		mg/kg
Cobalt	0.37	U	mg/kg
Copper	1.2	U	mg/kg
Iron	22.3	U	mg/kg
Lead	0.73		mg/kg
Magnesium	783		mg/kg
Manganese	1.2		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2790		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	3230		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	43.8		mg/kg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR003

PESTICIDES/PCBs

Sample Number: AC-28
Sample Date: 8/29/96
Laboratory ID: S685150B-20
QC Type: CS
% Moisture: 0
Location: AC-28

	RESULT	QUAL	UNITS
4,4'-DDD	5.8	U	ug/kg
4,4'-DDE	1.2	J	ug/kg
4,4'-DDT	5.8	U	ug/kg
Aldrin	3	U	ug/kg
alpha-BHC	3	U	ug/kg
Aroclor-1016	58	U	ug/kg
Aroclor-1221	120	U	ug/kg
Aroclor-1232	58	U	ug/kg
Aroclor-1242	58	U	ug/kg
Aroclor-1248	58	U	ug/kg
Aroclor-1254	58	U	ug/kg
Aroclor-1260	58	U	ug/kg
beta-BHC	3	U	ug/kg
Chlordane	30	U	ug/kg
Chlorobenzilate	30	U	ug/kg
delta-BHC	3	U	ug/kg
Dieldrin	1.2	J	ug/kg
Endosulfan I	3	U	ug/kg
Endosulfan II	5.8	U	ug/kg
Endosulfan sulfate	5.8	U	ug/kg
Endrin	5.8	U	ug/kg
Endrin aldehyde	8.3	J	ug/kg
gamma-BHC	3	U	ug/kg
Heptachlor	3	U	ug/kg
Heptachlor epoxide	3	U	ug/kg
Isodrin	0.78	J	ug/kg
Methoxychlor	30	U	ug/kg
Toxaphene	300	U	ug/kg

Sample Number: AF-10
Sample Date: 8/29/96
Laboratory ID: S685150B-18
QC Type: CS
% Moisture: 0
Location: AF-10

	RESULT	QUAL	UNITS
4,4'-DDD	4	U	ug/kg
4,4'-DDE	0.56	J	ug/kg
4,4'-DDT	4	U	ug/kg
Aldrin	2	J	ug/kg
alpha-BHC	0.68	J	ug/kg
Aroclor-1016	40	U	ug/kg
Aroclor-1221	80	U	ug/kg
Aroclor-1232	40	U	ug/kg
Aroclor-1242	40	U	ug/kg
Aroclor-1248	40	U	ug/kg
Aroclor-1254	40	U	ug/kg
Aroclor-1260	40	U	ug/kg
beta-BHC	2	U	ug/kg
Chlordane	20	U	ug/kg
Chlorobenzilate	20	U	ug/kg
delta-BHC	2	U	ug/kg
Dieldrin	4	U	ug/kg
Endosulfan I	2	U	ug/kg
Endosulfan II	4	U	ug/kg
Endosulfan sulfate	4	U	ug/kg
Endrin	4	U	ug/kg
Endrin aldehyde	1.7	J	ug/kg
gamma-BHC	2	U	ug/kg
Heptachlor	2	U	ug/kg
Heptachlor epoxide	2	U	ug/kg
Isodrin	1.5	J	ug/kg
Methoxychlor	20	U	ug/kg
Toxaphene	200	U	ug/kg

Sample Number: AF-19
Sample Date: 8/29/96
Laboratory ID: S685150B-17
QC Type: CS
% Moisture: 0
Location: AF-19

	RESULT	QUAL	UN
4,4'-DDD	4.5	U	ug
4,4'-DDE	4.5	U	ug
4,4'-DDT	4.5	U	ug
Aldrin	3.4	J	ug
alpha-BHC	0.97	J	ug
Aroclor-1016	45	U	ug
Aroclor-1221	91	U	ug
Aroclor-1232	45	U	ug
Aroclor-1242	45	U	ug
Aroclor-1248	45	U	ug
Aroclor-1254	45	U	ug
Aroclor-1260	45	U	ug
beta-BHC	2.3	U	ug
Chlordane	23	U	ug
Chlorobenzilate	23	U	ug
delta-BHC	0.23	J	ug
Dieldrin	0.99	J	ug
Endosulfan I	2.3	U	ug
Endosulfan II	0.43	J	ug
Endosulfan sulfate	17	J	ug
Endrin	4.5	U	ug
Endrin aldehyde	1.4	J	ug
gamma-BHC	1.5	J	ug
Heptachlor	1.4	J	ug
Heptachlor epoxide	2.3	U	ug
Isodrin	2.1	J	ug
Methoxychlor	4.6	J	ug
Toxaphene	230	U	ug

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

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PESTICIDES/PCBs

Sample Number: AF-20
Sample Date: 8/29/96
Laboratory ID: S685150B-15
QC Type: CS
% Moisture: 0
Location: AF-20

	RESULT	QUAL	UNITS
4,4'-DDD	0.42	J	ug/kg
4,4'-DDE	4.5	U	ug/kg
4,4'-DDT	4.5	U	ug/kg
Aldrin	3	J	ug/kg
alpha-BHC	2.3	U	ug/kg
Aroclor-1016	45	U	ug/kg
Aroclor-1221	91	U	ug/kg
Aroclor-1232	45	U	ug/kg
Aroclor-1242	45	U	ug/kg
Aroclor-1248	45	U	ug/kg
Aroclor-1254	45	U	ug/kg
Aroclor-1260	45	U	ug/kg
beta-BHC	2.3	U	ug/kg
Chlordane	23	U	ug/kg
Chlorobenzilate	23	U	ug/kg
delta-BHC	2.3	U	ug/kg
Dieldrin	4.5	U	ug/kg
Endosulfan I	2.3	U	ug/kg
Endosulfan II	0.3	J	ug/kg
Endosulfan sulfate	16	J	ug/kg
Endrin	4.5	U	ug/kg
Endrin aldehyde	1.5	J	ug/kg
gamma-BHC	0.34	J	ug/kg
Heptachlor	2.3	U	ug/kg
Heptachlor epoxide	2.3	U	ug/kg
Isodrin	2.2	J	ug/kg
Methoxychlor	23	U	ug/kg
Toxaphene	230	U	ug/kg

Sample Number: AF-21
Sample Date: 8/29/96
Laboratory ID: S685150B-14
QC Type: CS
% Moisture: 0
Location: AF-21

	RESULT	QUAL	UNITS
4,4'-DDD	1	J	ug/kg
4,4'-DDE	0.99	J	ug/kg
4,4'-DDT	4.1	U	ug/kg
Aldrin	2.8	J	ug/kg
alpha-BHC	2.1	U	ug/kg
Aroclor-1016	41	U	ug/kg
Aroclor-1221	84	U	ug/kg
Aroclor-1232	41	U	ug/kg
Aroclor-1242	41	U	ug/kg
Aroclor-1248	41	U	ug/kg
Aroclor-1254	41	U	ug/kg
Aroclor-1260	41	U	ug/kg
beta-BHC	2.1	U	ug/kg
Chlordane	21	U	ug/kg
Chlorobenzilate	21	U	ug/kg
delta-BHC	2.1	U	ug/kg
Dieldrin	0.89	J	ug/kg
Endosulfan I	2.1	U	ug/kg
Endosulfan II	0.22	J	ug/kg
Endosulfan sulfate	2.6	J	ug/kg
Endrin	4.1	U	ug/kg
Endrin aldehyde	1.4	J	ug/kg
gamma-BHC	2.1	U	ug/kg
Heptachlor	0.48	J	ug/kg
Heptachlor epoxide	2.1	U	ug/kg
Isodrin	2.9	J	ug/kg
Methoxychlor	21	U	ug/kg
Toxaphene	210	U	ug/kg

Sample Number: AF-22
Sample Date: 8/29/96
Laboratory ID: S685150B-16
QC Type: CS
% Moisture: 0
Location: AF-22

	RESULT	QUAL	UN
4,4'-DDD	4.7	U	ug
4,4'-DDE	1	J	ug
4,4'-DDT	4.7	U	ug/
Aldrin	3.8	J	ug/
alpha-BHC	2.4	U	ug/
Aroclor-1016	47	U	ug/
Aroclor-1221	96	U	ug/
Aroclor-1232	47	U	ug/
Aroclor-1242	47	U	ug/
Aroclor-1248	47	U	ug/
Aroclor-1254	47	U	ug/
Aroclor-1260	47	U	ug/
beta-BHC	2.4	U	ug/
Chlordane	24	U	ug/
Chlorobenzilate	24	U	ug/
delta-BHC	2.4	U	ug/
Dieldrin	0.81	J	ug/
Endosulfan I	2.4	U	ug/
Endosulfan II	0.52	J	ug/
Endosulfan sulfate	4.4	J	ug/
Endrin	4.7	U	ug/
Endrin aldehyde	1.4	J	ug/
gamma-BHC	0.29	J	ug/
Heptachlor	0.75	J	ug/
Heptachlor epoxide	2.4	U	ug/
Isodrin	4	J	ug/
Methoxychlor	2.6	J	ug/
Toxaphene	240	U	ug/

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PESTICIDES/PCBs

Sample Number: AF-26
Sample Date: 8/29/96
Laboratory ID: S685150B-19
QC Type: CS
% Moisture: 0
Location: AF-26

	RESULT	QUAL	UNITS
4,4'-DDD	1.2	J	ug/kg
4,4'-DDE	2.6	J	ug/kg
4,4'-DDT	5	U	ug/kg
Aldrin	1.4	J	ug/kg
alpha-BHC	2.6	U	ug/kg
Aroclor-1016	50	U	ug/kg
Aroclor-1221	100	U	ug/kg
Aroclor-1232	50	U	ug/kg
Aroclor-1242	50	U	ug/kg
Aroclor-1248	50	U	ug/kg
Aroclor-1254	50	U	ug/kg
Aroclor-1260	50	U	ug/kg
beta-BHC	0.91	J	ug/kg
Chlordane	26	U	ug/kg
Chlorobenzilate	30		ug/kg
delta-BHC	2.6	U	ug/kg
Dieldrin	1.9	J	ug/kg
Endosulfan I	2.1	J	ug/kg
Endosulfan II	0.36	J	ug/kg
Endosulfan sulfate	15	J	ug/kg
Endrin	5	U	ug/kg
Endrin aldehyde	2.2	J	ug/kg
gamma-BHC	2.6	U	ug/kg
Heptachlor	1.1	J	ug/kg
Heptachlor epoxide	0.62	J	ug/kg
Isodrin	5	U	ug/kg
Methoxychlor	26	U	ug/kg
Toxaphene	260	U	ug/kg

Sample Number: AF-31
Sample Date: 8/29/96
Laboratory ID: S685150B-8
QC Type: CS
% Moisture: 0
Location: AF-31

	RESULT	QUAL	UNITS
4,4'-DDD	0.95	J	ug/kg
4,4'-DDE	1.1	J	ug/kg
4,4'-DDT	5.2	U	ug/kg
Aldrin	0.93	J	ug/kg
alpha-BHC	2.7	U	ug/kg
Aroclor-1016	52	U	ug/kg
Aroclor-1221	100	U	ug/kg
Aroclor-1232	52	U	ug/kg
Aroclor-1242	52	U	ug/kg
Aroclor-1248	52	U	ug/kg
Aroclor-1254	52	U	ug/kg
Aroclor-1260	52	U	ug/kg
beta-BHC	2.7	U	ug/kg
Chlordane	27	U	ug/kg
Chlorobenzilate	40	J	ug/kg
delta-BHC	2.7	U	ug/kg
Dieldrin	0.82	J	ug/kg
Endosulfan I	1.4	J	ug/kg
Endosulfan II	0.34	J	ug/kg
Endosulfan sulfate	5.2	U	ug/kg
Endrin	5.2	U	ug/kg
Endrin aldehyde	2.3	J	ug/kg
gamma-BHC	0.41	J	ug/kg
Heptachlor	2.7	U	ug/kg
Heptachlor epoxide	0.81	J	ug/kg
Isodrin	5.2	U	ug/kg
Methoxychlor	7.8	J	ug/kg
Toxaphene	270	U	ug/kg

Sample Number: AF-32
Sample Date: 8/29/96
Laboratory ID: S685150B-13
QC Type: CS
% Moisture: 0
Location: AF-32

	RESULT	QUAL	UN
4,4'-DDD	1.3	J	ug/
4,4'-DDE	1.7	J	ug/
4,4'-DDT	4.1	J	ug/
Aldrin	2	J	ug/
alpha-BHC	2.7	U	ug/
Aroclor-1016	52	U	ug/
Aroclor-1221	100	U	ug/
Aroclor-1232	52	U	ug/
Aroclor-1242	52	U	ug/
Aroclor-1248	52	U	ug/
Aroclor-1254	52	U	ug/
Aroclor-1260	52	U	ug/
beta-BHC	2.7	U	ug/
Chlordane	27	U	ug/
Chlorobenzilate	25	J	ug/
delta-BHC	2.7	U	ug/
Dieldrin	0.97	J	ug/
Endosulfan I	1.7	J	ug/
Endosulfan II	0.26	J	ug/
Endosulfan sulfate	1.2	J	ug/
Endrin	5.2	U	ug/
Endrin aldehyde	1.8	J	ug/
gamma-BHC	0.42	J	ug/
Heptachlor	0.82	J	ug/
Heptachlor epoxide	0.66	J	ug/
Isodrin	0.64	J	ug/
Methoxychlor	4.9	J	ug/
Toxaphene	270	U	ug/

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SAVANNAH LABORATORIES

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PESTICIDES/PCBs

Sample Number: AF-33
Sample Date: 8/29/96
Laboratory ID: S685150B-7
QC Type: CS
% Moisture: 0
Location: AF-33

	RESULT	QUAL	UNITS
4,4'-DDD	1.1	J	ug/kg
4,4'-DDE	0.64	J	ug/kg
4,4'-DDT	1.5	J	ug/kg
Aldrin	0.6	J	ug/kg
alpha-BHC	1.1	U	ug/kg
Aroclor-1016	22	U	ug/kg
Aroclor-1221	45	U	ug/kg
Aroclor-1232	22	U	ug/kg
Aroclor-1242	22	U	ug/kg
Aroclor-1248	22	U	ug/kg
Aroclor-1254	22	U	ug/kg
Aroclor-1260	22	U	ug/kg
beta-BHC	0.99	J	ug/kg
Chlordane	11	U	ug/kg
Chlorobenzilate	24		ug/kg
delta-BHC	1.1	U	ug/kg
Dieldrin	0.17	J	ug/kg
Endosulfan I	0.67	J	ug/kg
Endosulfan II	0.13	J	ug/kg
Endosulfan sulfate	0.75	J	ug/kg
Endrin	2.2	U	ug/kg
Endrin aldehyde	1	J	ug/kg
gamma-BHC	1.1	U	ug/kg
Heptachlor	0.051	J	ug/kg
Heptachlor epoxide	0.22	J	ug/kg
Isodrin	0.45	J	ug/kg
Methoxychlor	2.1	J	ug/kg
Toxaphene	110	U	ug/kg

Sample Number: AF-34
Sample Date: 8/29/96
Laboratory ID: S685150B-9
QC Type: CS
% Moisture: 0
Location: AF-34

	RESULT	QUAL	UNITS
4,4'-DDD	2.7	J	ug/kg
4,4'-DDE	3.7	U	ug/kg
4,4'-DDT	3.7	U	ug/kg
Aldrin	3	J	ug/kg
alpha-BHC	1.9	U	ug/kg
Aroclor-1016	37	U	ug/kg
Aroclor-1221	74	U	ug/kg
Aroclor-1232	37	U	ug/kg
Aroclor-1242	37	U	ug/kg
Aroclor-1248	37	U	ug/kg
Aroclor-1254	37	U	ug/kg
Aroclor-1260	37	U	ug/kg
beta-BHC	1.9	U	ug/kg
Chlordane	19	U	ug/kg
Chlorobenzilate	19	U	ug/kg
delta-BHC	0.16	J	ug/kg
Dieldrin	3.7	U	ug/kg
Endosulfan I	0.12	J	ug/kg
Endosulfan II	0.47	J	ug/kg
Endosulfan sulfate	3.7	U	ug/kg
Endrin	3.7	U	ug/kg
Endrin aldehyde	2.2	J	ug/kg
gamma-BHC	1.9	U	ug/kg
Heptachlor	2.6		ug/kg
Heptachlor epoxide	0.42	J	ug/kg
Isodrin	1.1	J	ug/kg
Methoxychlor	4.2	J	ug/kg
Toxaphene	190	U	ug/kg

Sample Number: AF-35
Sample Date: 8/29/96
Laboratory ID: S685150B-10
QC Type: CS
% Moisture: 0
Location: AF-35

	RESULT	QUAL	UNI
4,4'-DDD	0.98	J	ug/
4,4'-DDE	3.3	U	ug/
4,4'-DDT	3.3	U	ug/
Aldrin	2	J	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	33	U	ug/
beta-BHC	3	J	ug/k
Chlordane	17	U	ug/k
Chlorobenzilate	17	U	ug/k
delta-BHC	1.7	U	ug/k
Dieldrin	3.3	U	ug/k
Endosulfan I	1.7	U	ug/k
Endosulfan II	0.3	J	ug/k
Endosulfan sulfate	3.3	U	ug/k
Endrin	3.3	U	ug/k
Endrin aldehyde	1.1	J	ug/k
gamma-BHC	1.7	U	ug/k
Heptachlor	1.9		ug/k
Heptachlor epoxide	1.7	U	ug/k
Isodrin	0.59	J	ug/k
Methoxychlor	2.7	J	ug/k
Toxaphene	170	U	ug/k

CTO 007 - KEY WEST
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PESTICIDES/PCBs

Sample Number: AF-36
Sample Date: 8/29/96
Laboratory ID: S685150B-12
QC Type: CS
% Moisture: 0
Location: AF-36

	RESULT	QUAL	UNITS
4,4'-DDD	5	U	ug/kg
4,4'-DDE	0.72	J	ug/kg
4,4'-DDT	3.8	J	ug/kg
Aldrin	0.9	J	ug/kg
alpha-BHC	1.3	J	ug/kg
Aroclor-1016	50	U	ug/kg
Aroclor-1221	100	U	ug/kg
Aroclor-1232	50	U	ug/kg
Aroclor-1242	50	U	ug/kg
Aroclor-1248	50	U	ug/kg
Aroclor-1254	50	U	ug/kg
Aroclor-1260	50	U	ug/kg
beta-BHC	2.6	U	ug/kg
Chlordane	26	U	ug/kg
Chlorobenzilate	26	U	ug/kg
delta-BHC	2.6	U	ug/kg
Dieldrin	0.68	J	ug/kg
Endosulfan I	2.6	U	ug/kg
Endosulfan II	5	U	ug/kg
Endosulfan sulfate	1.2	J	ug/kg
Endrin	5	U	ug/kg
Endrin aldehyde	5	U	ug/kg
gamma-BHC	2.6	U	ug/kg
Heptachlor	2	J	ug/kg
Heptachlor epoxide	2.6	U	ug/kg
Isodrin	1.7	J	ug/kg
Methoxychlor	26	U	ug/kg
Toxaphene	260	U	ug/kg

Sample Number: AF-37
Sample Date: 8/29/96
Laboratory ID: S685150B-11
QC Type: CS
% Moisture: 0
Location: AF-37

	RESULT	QUAL	UNITS
4,4'-DDD	0.62	J	ug/kg
4,4'-DDE	0.74	J	ug/kg
4,4'-DDT	1.2	J	ug/kg
Aldrin	3.8	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	4.4		ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.53	J	ug/kg
Dieldrin	0.17	J	ug/kg
Endosulfan I	0.51	J	ug/kg
Endosulfan II	0.51	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	0.68	J	ug/kg
gamma-BHC	1.2	J	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	0.26	J	ug/kg
Isodrin	2.4	J	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: S5F-20
Sample Date: 8/29/96
Laboratory ID: S685150B-1
QC Type: CS
% Moisture: 0
Location: S5F-20

	RESULT	QUAL	UN
4,4'-DDD	0.86	J	ug
4,4'-DDE	1.5	J	ug/
4,4'-DDT	6.4	J	ug/
Aldrin	1.7	J	ug/
alpha-BHC	2	U	ug/
Aroclor-1016	40	U	ug/
Aroclor-1221	80	U	ug/
Aroclor-1232	40	U	ug/
Aroclor-1242	40	U	ug/
Aroclor-1248	40	U	ug/
Aroclor-1254	40	U	ug/
Aroclor-1260	40	U	ug/
beta-BHC	2.8		ug/
Chlordane	20	U	ug/
Chlorobenzilate	56		ug/
delta-BHC	2	U	ug/
Dieldrin	3.2	J	ug/
Endosulfan I	1.7	J	ug/
Endosulfan II	0.72	J	ug/
Endosulfan sulfate	7	J	ug/
Endrin	4	U	ug/
Endrin aldehyde	7.4	J	ug/
gamma-BHC	2.8		ug/
Heptachlor	5.9		ug/
Heptachlor epoxide	2	U	ug/
Isodrin	1.4	J	ug/
Methoxychlor	8.1	J	ug/
Toxaphene	200	U	ug/

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PESTICIDES/PCBs

Sample Number: S5F-21
Sample Date: 8/26/96
Laboratory ID: S685150B-2
QC Type: CS
% Moisture: 0
Location: S5F-21

	RESULT	QUAL	UNITS
4,4'-DDD	24		ug/kg
4,4'-DDE	2.6	J	ug/kg
4,4'-DDT	11	J	ug/kg
Aldrin	5.1	J	ug/kg
alpha-BHC	2.6	U	ug/kg
Aroclor-1016	50	U	ug/kg
Aroclor-1221	100	U	ug/kg
Aroclor-1232	50	U	ug/kg
Aroclor-1242	50	U	ug/kg
Aroclor-1248	50	U	ug/kg
Aroclor-1254	50	U	ug/kg
Aroclor-1260	50	U	ug/kg
beta-BHC	2.6	U	ug/kg
Chlordane	26	U	ug/kg
Chlorobenzilate	330	J	ug/kg
delta-BHC	0.55	J	ug/kg
Dieldrin	2.5	J	ug/kg
Endosulfan I	3.3		ug/kg
Endosulfan II	2.2	J	ug/kg
Endosulfan sulfate	6.7		ug/kg
Endrin	5	U	ug/kg
Endrin aldehyde	12	J	ug/kg
gamma-BHC	1.3	J	ug/kg
Heptachlor	8.1	J	ug/kg
Heptachlor epoxide	0.75	J	ug/kg
Isodrin	0.97	J	ug/kg
Methoxychlor	1.3	J	ug/kg
Toxaphene	260	U	ug/kg

Sample Number: S5F-22
Sample Date: 8/26/96
Laboratory ID: S685150B-3
QC Type: CS
% Moisture: 0
Location: S5F-22

	RESULT	QUAL	UNITS
4,4'-DDD	5		ug/kg
4,4'-DDE	1.2	J	ug/kg
4,4'-DDT	5.3	J	ug/kg
Aldrin	2.6	J	ug/kg
alpha-BHC	2.6	U	ug/kg
Aroclor-1016	50	U	ug/kg
Aroclor-1221	100	U	ug/kg
Aroclor-1232	50	U	ug/kg
Aroclor-1242	50	U	ug/kg
Aroclor-1248	50	U	ug/kg
Aroclor-1254	50	U	ug/kg
Aroclor-1260	50	U	ug/kg
beta-BHC	2.4	J	ug/kg
Chlordane	26	U	ug/kg
Chlorobenzilate	30	J	ug/kg
delta-BHC	2.6	U	ug/kg
Dieldrin	1.7	J	ug/kg
Endosulfan I	0.94	J	ug/kg
Endosulfan II	4	J	ug/kg
Endosulfan sulfate	5.8	J	ug/kg
Endrin	1.4	J	ug/kg
Endrin aldehyde	5.4	J	ug/kg
gamma-BHC	0.64	J	ug/kg
Heptachlor	3		ug/kg
Heptachlor epoxide	2.6	U	ug/kg
Isodrin	5	U	ug/kg
Methoxychlor	1.3	J	ug/kg
Toxaphene	260	U	ug/kg

Sample Number: S5F-23
Sample Date: 8/29/96
Laboratory ID: S685150B-4
QC Type: CS
% Moisture: 0
Location: S5F-23

	RESULT	QUAL	UNIT
4,4'-DDD	1.3	J	ug/k
4,4'-DDE	1.8	J	ug/k
4,4'-DDT	8.5		ug/k
Aldrin	1.3	J	ug/k
alpha-BHC	2.3	U	ug/k
Aroclor-1016	45	U	ug/k
Aroclor-1221	91	U	ug/k
Aroclor-1232	45	U	ug/k
Aroclor-1242	45	U	ug/k
Aroclor-1248	45	U	ug/k
Aroclor-1254	45	U	ug/k
Aroclor-1260	45	U	ug/k
beta-BHC	0.69	J	ug/k
Chlordane	23	U	ug/k
Chlorobenzilate	48		ug/k
delta-BHC	2.3	U	ug/k
Dieldrin	4.5	U	ug/k
Endosulfan I	0.37	J	ug/k
Endosulfan II	4.5	U	ug/k
Endosulfan sulfate	4.5	U	ug/k
Endrin	1.2	J	ug/k
Endrin aldehyde	9.2		ug/k
gamma-BHC	0.44	J	ug/k
Heptachlor	2.3	U	ug/k
Heptachlor epoxide	2.3	U	ug/k
Isodrin	2	J	ug/k
Methoxychlor	0.74	J	ug/k
Toxaphene	230	U	ug/k

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PESTICIDES/PCBs

Sample Number: S5F-24
Sample Date: 8/29/96
Laboratory ID: S685150B-5
QC Type: CS
% Moisture: 0
Location: S5F-24

	RESULT	QUAL	UNITS
4,4'-DDD	2.6	J	ug/kg
4,4'-DDE	1.9	J	ug/kg
4,4'-DDT	21		ug/kg
Aldrin	1.4	J	ug/kg
alpha-BHC	2.6	U	ug/kg
Aroclor-1016	50	U	ug/kg
Aroclor-1221	100	U	ug/kg
Aroclor-1232	50	U	ug/kg
Aroclor-1242	50	U	ug/kg
Aroclor-1248	50	U	ug/kg
Aroclor-1254	50	U	ug/kg
Aroclor-1260	50	U	ug/kg
beta-BHC	4.2		ug/kg
Chlordane	26	U	ug/kg
Chlorobenzilate	39	J	ug/kg
delta-BHC	2.6	U	ug/kg
Dieldrin	4.2	J	ug/kg
Endosulfan I	0.85	J	ug/kg
Endosulfan II	2.2	J	ug/kg
Endosulfan sulfate	22		ug/kg
Endrin	5	U	ug/kg
Endrin aldehyde	5.3	J	ug/kg
gamma-BHC	1.7	J	ug/kg
Heptachlor	2.9	J	ug/kg
Heptachlor epoxide	2.6	U	ug/kg
Isodrin	1.1	J	ug/kg
Methoxychlor	4.4	J	ug/kg
Toxaphene	260	U	ug/kg

Sample Number: S5F-25
Sample Date: 8/29/96
Laboratory ID: S685150B-6
QC Type: CS
% Moisture: 0
Location: S5F-25

	RESULT	QUAL	UNITS
4,4'-DDD	3.4		ug/kg
4,4'-DDE	1.2	J	ug/kg
4,4'-DDT	9.2		ug/kg
Aldrin	1	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	3		ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	47	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	0.28	J	ug/kg
Endosulfan II	0.41	J	ug/kg
Endosulfan sulfate	4.4	J	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	2.2	J	ug/kg
gamma-BHC	0.88	J	ug/kg
Heptachlor	2.2		ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

ORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 30, 1997**
FROM:	**TERESA M. HUDSON**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA REVIEW – PEST/PCB ORGANICS**
CTO 007 – NAS KEY WEST, KEY WEST, FLORIDA
SDG – BR003

SAMPLES: 20/TISSUE/

S5F-20	S5F-25	AF-37	AF-22
S5F-21	AF-33	AF-36	AF-19
S5F-22	AF-31	AF-32	AF-10
S5F-23	AF-34	AF-21	AF-26
S5F-24	AF-35	AF-20	AC-28

The sample set for the CTO 007 NAS Key West site, SDG BR003, consists of twenty (20) tissue samples. All samples were analyzed for Target Compound List (TCL) pesticide/PCB organic compounds.

The samples were collected by Brown & Root Environmental on August 29, 1996 and analyzed by Savannah Laboratories & Environmental Services, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Method 8080 analytical and reporting protocols. The data was evaluated according to the following parameters:

- Holding times
- Initial and continuing calibrations
- * Laboratory and field blank analyses
- Surrogate spike recoveries
- * Compound Quantitation

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Pesticide/PCBs

The following pesticide compound was detected in the laboratory method blank at the maximum concentration indicated below:

Compound	Maximum Concentration	Action Level
Endrin	0.16 ug/Kg	0.8 ug/Kg

Samples Affected: S5F-20, S5F-22, and S5F-23

Percent moisture, sample aliquot size, and dilution factors were considered prior to the application of the action level. Positive results in the affected samples for these compounds reported at concentrations below the detection limit were replaced with revised detection limits. Positive results below the detection limit and above the action level were qualified estimated, "J." Positive results below the action level were qualified nondetect, "U."

The laboratory qualifier "P" was removed from all target compound data with a %D above 25% and less than 100% between positive results on columns 1 and 2. The affected target compounds and samples are listed in the table below.

SAMPLE	AFFECTED COMPOUNDS
S5F-20	Beta-BHC, Aldrin, Endosulfan I, Endosulfan II, Methoxychlor, Chlorobenzilate, Isodrin
S5F-21	4,4'-DDD, Endosulfan sulfate
S5F-22	Beta-BHC
S5F-23	4,4'-DDD, 4,4'-DDT, Endrin aldehyde, Chlorobenzilate, Isodrin
S5F-24	Aldrin, Endosulfan I, Dieldrin, Endosulfan sulfate, Methoxychlor, Isodrin
S5F-25	Beta-BHC, Gamma-BHC (lindane), 4,4'-DDD
AF-33	Beta-BHC, 4,4'-DDD, Chlorobenzilate
AF-31	Endosulfan I, Methoxychlor
AF-34	Heptachlor, 4,4'-DDD, Methoxychlor
AF-35	Heptachlor, 4,4'-DDD, Methoxychlor
AF-37	Beta-BHC, Endosulfan I
AF-36	4,4'-DDT
AF-32	Endosulfan I, Dieldrin, 4,4'-DDT, Methoxychlor, Chlorobenzilate
AF-21	4,4'-DDD
AF-20	Endosulfan II, Isodrin
AF-22	Endosulfan II
AF-19	Alpha-BHC, Gamma-BHC (lindane), Heptachlor, Methoxychlor
AF-10	Isodrin

The laboratory qualifier "P" was removed from the target compound data for those compounds with a %D between columns 1 and 2 greater than 100%. Positive hits were estimated "J." The affected samples and target compounds are listed in the table below.

SAMPLE	AFFECTED COMPOUNDS
S5F-20	Dieldrin, 4,4'-DDE, 4,4'-DDD, 4,4'-DDT, Endrin aldehyde
S5F-21	Delta-BHC, Gamma-BHC (lindane), Heptachlor, Aldrin, Heptachlor epoxide, Dieldrin, 4,4'-DDE, Endosulfan II, 4,4'-DDT, Methoxychlor, Endrin aldehyde, Isodrin
S5F-22	Gamma-BHC (lindane), Aldrin, Endosulfan I, Dieldrin, 4,4'-DDE, Endrin, 4,4'-DDT, Methoxychlor, Endrin aldehyde, Chlorobenzilate
S5F-23	Beta-BHC, Gamma-BHC (lindane), Aldrin, 4,4'-DDE, Endrin, Methoxychlor

S5F-24	Heptachlor, 4,4'-DDE, 4,4'-DDD, Endrin aldehyde, Chlorobenzilate
S5F-25	Aldrin, Endosulfan I, 4,4'-DDE, Endosulfan II, Endosulfan sulfate, Endrin aldehyde, Chlorobenzilate
AF-33	Heptachlor, Aldrin, Heptachlor epoxide, Endosulfan I, Dieldrin, 4,4'-DDE, Endosulfan II, Endosulfan sulfate, 4,4'-DDT, Methoxychlor, Endrin aldehyde, Isodrin
AF-31	Gamma-BHC (lindane), Aldrin, Heptachlor epoxide, Dieldrin, 4,4'-DDE, Endosulfan II, 4,4'-DDD, Endrin aldehyde, Chlorobenzilate
AF-34	Delta-BHC, Aldrin, Heptachlor epoxide, Endosulfan I, Endosulfan II, Endrin aldehyde, Isodrin
AF-35	Aldrin, Endosulfan II, Endrin aldehyde
AF-37	Delta-BHC, Gamma-BHC (lindane), Heptachlor epoxide, Dieldrin, 4,4'-DDE, 4,4'-DDD, 4,4'-DDT, Endrin aldehyde
AF-36	Aldrin, Dieldrin, 4,4'-DDE, Endosulfan sulfate
AF-32	Gamma-BHC (lindane), Heptachlor, Aldrin, Heptachlor epoxide, 4,4'-DDE, Endosulfan II, 4,4'-DDD, Endosulfan sulfate, Endrin aldehyde, Isodrin
AF-21	Heptachlor, Aldrin, Dieldrin, 4,4'-DDE, Endosulfan II, Endosulfan sulfate, Endrin aldehyde
AF-20	Gamma-BHC (lindane), Aldrin, 4,4'-DDD, Endrin aldehyde
AF-22	Gamma-BHC (lindane), Heptachlor, Aldrin, Dieldrin, 4,4'-DDE, Endosulfan sulfate, Methoxychlor, Endrin aldehyde
AF-19	Delta-BHC, Aldrin, Dieldrin, Endosulfan II, Endosulfan sulfate, Endrin aldehyde, Isodrin
AF-10	Aldrin, 4,4'-DDE, Endrin aldehyde
AF-26	Beta-BHC, Heptachlor, Aldrin, Heptachlor epoxide, Dieldrin, 4,4'-DDE, Endosulfan II, 4,4'-DDD, Endrin aldehyde
AC-28	4,4'-DDE, Endrin aldehyde, Isodrin

Due to coelution matrix interference on one of the GC columns, confirmation of Endosulfan sulfate in samples S5F-20, S5F-22, AF-20, and AF-26 was not feasible. Thus, the Endosulfan sulfate concentrations reported for these samples are based on a single column. The laboratory qualifier "X" was removed and the estimated "J" was left to indicate estimated concentrations.

Due to coeluting matrix interference on one of the GC columns, confirmation of Chlorobenzilate in S5F-21 was not feasible. Thus, the Chlorobenzilate concentrations reported for this sample is based on a single column. The laboratory qualifier "X" was removed and the estimated "J" was left to indicate an estimated concentration.

Due to coeluting matrix interference on one of the GC columns, confirmation of Beta-BHC in AF-35 was not feasible. Thus, the Beta-BHC concentrations reported for this sample is based on a single column. The laboratory qualifier "X" was removed and it was estimated "J" to indicate an estimated concentration.

Due to coeluting matrix interference on one of the GC columns, confirmation of Isodrin in AF-35 was not feasible. Thus, the Isodrin concentrations reported for this sample is based on a single column. The laboratory qualifier "X" was removed and it was estimated "J" to indicate an estimated concentration.

Due to coeluting matrix interference on one of the GC columns, confirmation of Aldrin in AF-37 was not feasible. Thus, the Aldrin concentrations reported for this sample is based on a single column. The laboratory qualifier "X" was removed and it was estimated "J" to indicate an estimated concentration.

Due to coeluting matrix interference on one of the GC columns, confirmation of Heptachlor in AF-36 was not feasible. Thus, the Heptachlor concentrations reported for this sample is based on a single column. The laboratory qualifier "X" was removed and it was estimated "J" to indicate an estimated concentration.

Continuing Calibration Verifications (CCV) %D exceeded 25% for Endrin aldehyde, 4,4'-DDT, Endosulfan sulfate Chlorobenzilate, and Aroclor 1260. However, no actions were taken for CCV %D.

A high %D between positive results in columns 1 and 2 was reported for Endrin, however no action was taken since this data was previously qualified for laboratory method blank contamination.

No other problems were noted.

Executive Summary

Laboratory Performance: Endrin was detected in the laboratory method blank. Some pesticide/PCB compounds reported %Ds between positive results in columns 1 and 2 above the quality control limit of 25%, but not over 100%. Some pesticide/PCB compounds reported %Ds above 100%. Due to coeluting matrix interference on one of the GC columns, confirmation of multiple compounds was not feasible for some samples. Thus, the concentrations reported for these samples are based on a single column.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program" (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Teresa M Hudson

Brown & Root Environmental
Teresa M. Hudson
Environmental Scientist/Data Validator

for

Brown & Root Environmental
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

NAS KEY WEST
SDG – BR003
TABLE 1 - RECOMMENDATION SUMMARY

Sample Number	PEST/PCB
S5F-20	A^{1} $J^{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 26}$
S5F-21	$J^{4, 5, 9, 11, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26}$
S5F-22	$J^{1, 4, 5, 8, 9, 11, 15, 17, 22, 25, 26, 27, 28}$
S5F-23	$J^{5, 12, 13, 15, 17, 20, 22, 26, 27, 29, 30, 31}$
S5F-24	$J^{2, 3, 5, 7, 10, 11, 13, 16, 21, 26, 28, 32}$
S5F-25	$J^{1, 5, 11, 17, 19, 20, 25, 26, 28, 33, 34}$
AF-33	$J^{1, 4, 5, 9, 11, 12, 16, 17, 18, 19, 20, 22, 24, 25, 26, 34}$
AF-31	$J^{3, 4, 5, 7, 10, 11, 15, 17, 18, 19, 26, 28}$
AF-34	$J^{10, 11, 14, 17, 18, 19, 20, 24, 25, 26, 35}$
AF-35	$J^{10, 11, 17, 19, 20, 26, 35, 36, 37}$
AF-37	$J^{1, 3, 4, 5, 7, 9, 11, 14, 15, 18, 26, 38}$
AF-36	$J^{4, 5, 17, 26, 30, 34, 39}$
AF-32	$J^{3, 5, 7, 10, 11, 12, 15, 16, 17, 18, 19, 24, 26, 30, 32, 34}$
AF-21	$J^{4, 5, 11, 16, 17, 19, 20, 26, 34}$
AF-20	$J^{6, 7, 8, 11, 13, 15, 17, 26}$
AF-22	$J^{4, 5, 6, 11, 15, 16, 17, 22, 26, 34}$
AF-19	$J^{4, 10, 11, 14, 17, 19, 24, 26, 33, 34, 35, 40}$
AF-10	$J^{5, 11, 13, 17, 26}$
AF-26	$J^{4, 5, 7, 8, 11, 16, 17, 18, 19, 26, 29}$
AC-28	$J^{5, 11, 24, 26}$

If the field is left blank, the qualifier is A - Accept all data.

A^{1} Accept data, but change positive results for endrin to a revised detection limit and qualify as non-detected, (U) for blank contamination.

J^{1} Removed the laboratory qualifier (P) for beta-BHC, used to indicate a high %D. No further action was taken.

J^{2} Removed the laboratory qualifier (P) for aldrin, used to indicate a high %D. No further action was taken.

J^{3} Removed the laboratory qualifier (P) for endosulfan I, used to indicate a high %D. No further action was taken.

J^{4} Removed laboratory qualifier (P) for dieldrin and estimated (J), as result of %D above 100.

J^{5} Removed laboratory qualifier (P) for 4,4'-DDE and estimated (J), as result of %D above 100.

J^{6} Removed the laboratory qualifier (P) for endosulfan II, used to indicate a high %D. No further action was taken.

J^{7} Removed laboratory qualifier (P) for 4,4'-DDD and estimated (J), as result of %D above 100.

J^{8} Removed the laboratory qualifier (X) which indicates that the results for endosulfan sulfate are based on one column. Qualified as estimate (J).

J^{9} Removed laboratory qualifier (P) for 4,4'-DDT and estimated (J), as result of %D above 100%.

J^{10} Removed the laboratory qualifier (P) for methoxychlor, used to indicate a high %D. No further action was taken.

J^{11} Removed laboratory qualifier (P) for endrin aldehyde and estimated (J), as result of %D above 100%.

J^{12} Removed the laboratory qualifier (P) for chlorobenzilate, used to indicate a high %D. No further action was taken.

J^{13} Removed the laboratory qualifier (P) for isodrin, used to indicate a high %D. No further action was taken.

J^{14} Removed the laboratory qualifier (P) for delta-BHC and estimated (J), as result of %D above 100%.

J^{15} Removed the laboratory qualifier (P) for gamma-BHC (lindane) and estimated (J), as result of %D above 100%.

J^{16} Removed the laboratory qualifier (P) for heptachlor and estimated (J), as result of %D above 100%.

J^{17} Removed the laboratory qualifier (P) for aldrin and estimated (J), as result of %D above 100%.

J^{18} Removed the laboratory qualifier (P) for heptachlor epoxide and estimated (J), as result of %D above 100%.

J^{19} Removed the laboratory qualifier (P) for endosulfan II and estimated (J), as result of %D above 100%.

J^{20} Removed the laboratory qualifier (P) for 4,4'-DDD, used to indicate a high %D. No further action was taken.

J^{21} Removed the laboratory qualifier (P) for endosulfan sulfate, used to indicate a high %D. No further action was taken.

J^{22} Removed the laboratory qualifier (P) for methoxychlor and estimated (J), as result of %D above 100%.

J^{23} Removed the laboratory qualifier (X) which indicates that the results for chlorobenzilate are based on one column. Qualified as estimate (J).

J^{24} Removed the laboratory qualifier (P) for isodrin and estimated (J), as result of %D above 100%.

J^{25} Removed the laboratory qualifier (P) for endosulfan I and estimated (J), as result of %D above 100%.

J^{26} Positive results reported below the CRQL were estimated (J).

J^{27} Removed the laboratory qualifier (P) for endrin and estimated (J), as result of %D above 100%.

J^{28} Removed the laboratory qualifier (P) for chlorobenzilate and estimated (J), as result of %D above 100%.

J^{29} Removed the laboratory qualifier (P) for beta-BHC and estimated (J), as result of %D above 100%.

J^{30} Removed the laboratory qualifier (P) for 4,4'-DDT, used to indicate a high %D. No further action was taken.

J^{31} Removed the laboratory qualifier (P) for endrin aldehyde, used to indicate a high %D. No further action was taken.

J^{32} Removed the laboratory qualifier (P) for dieldrin, used to indicate a high %D. No further action was taken.

J^{33} Removed the laboratory qualifier (P) for gamma-BHC (lindane), used to indicate a high %D. No further action was taken.

J^{34} Removed the laboratory qualifier (P) for endosulfan sulfate and estimated (J), as result of %D above 100%.

J^{35} Removed the laboratory qualifier (P) for heptachlor, used to indicate a high %D. No further action was taken.

J^{36} Removed the laboratory qualifier (X) which indicates that the results for beta-BHC are based on one column. Qualified as estimate (J).

J[37] Removed the laboratory qualifier (X) which indicates that the results for isodrin are based on one column. Qualified as estimate (J).

J[38] Removed the laboratory qualifier (X) which indicates that the results for aldrin are based on one column. Qualified as estimate (J).

J[39] Removed the laboratory qualifier (X) which indicates that the results for heptachlor are based on one column. Qualified as estimate (J).

J[40] Removed the laboratory qualifier (X) which indicates that the results for alpha-BHC are based on one column. Qualified as estimate (J).

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR003

PESTICIDES/PCBs

Sample Number: AC-28
Sample Date: 8/29/96
Laboratory ID: S685150B-20
QC Type: CS
% Moisture: 0
Location: AC-28

	RESULT	QUAL	UNITS
4,4'-DDD	5.8	U	ug/kg
4,4'-DDE	1.2	J	ug/kg
4,4'-DDT	5.8	U	ug/kg
Aldrin	3	U	ug/kg
alpha-BHC	3	U	ug/kg
Aroclor-1016	58	U	ug/kg
Aroclor-1221	120	U	ug/kg
Aroclor-1232	58	U	ug/kg
Aroclor-1242	58	U	ug/kg
Aroclor-1248	58	U	ug/kg
Aroclor-1254	58	U	ug/kg
Aroclor-1260	58	U	ug/kg
beta-BHC	3	U	ug/kg
Chlordane	30	U	ug/kg
Chlorobenzilate	30	U	ug/kg
delta-BHC	3	U	ug/kg
Dieldrin	1.2	J	ug/kg
Endosulfan I	3	U	ug/kg
Endosulfan II	5.8	U	ug/kg
Endosulfan sulfate	5.8	U	ug/kg
Endrin	5.8	U	ug/kg
Endrin aldehyde	8.3	J	ug/kg
gamma-BHC	3	U	ug/kg
Heptachlor	3	U	ug/kg
Heptachlor epoxide	3	U	ug/kg
Isodrin	0.78	J	ug/kg
Methoxychlor	30	U	ug/kg
Toxaphene	300	U	ug/kg

Sample Number: AF-10
Sample Date: 8/29/96
Laboratory ID: S685150B-18
QC Type: CS
% Moisture: 0
Location: AF-10

	RESULT	QUAL	UNITS
4,4'-DDD	4	U	ug/kg
4,4'-DDE	0.56	J	ug/kg
4,4'-DDT	4	U	ug/kg
Aldrin	2	J	ug/kg
alpha-BHC	0.68	J	ug/kg
Aroclor-1016	40	U	ug/kg
Aroclor-1221	80	U	ug/kg
Aroclor-1232	40	U	ug/kg
Aroclor-1242	40	U	ug/kg
Aroclor-1248	40	U	ug/kg
Aroclor-1254	40	U	ug/kg
Aroclor-1260	40	U	ug/kg
beta-BHC	2	U	ug/kg
Chlordane	20	U	ug/kg
Chlorobenzilate	20	U	ug/kg
delta-BHC	2	U	ug/kg
Dieldrin	4	U	ug/kg
Endosulfan I	2	U	ug/kg
Endosulfan II	4	U	ug/kg
Endosulfan sulfate	4	U	ug/kg
Endrin	4	U	ug/kg
Endrin aldehyde	1.7	J	ug/kg
gamma-BHC	2	U	ug/kg
Heptachlor	2	U	ug/kg
Heptachlor epoxide	2	U	ug/kg
Isodrin	1.5	J	ug/kg
Methoxychlor	20	U	ug/kg
Toxaphene	200	U	ug/kg

Sample Number: AF-19
Sample Date: 8/29/96
Laboratory ID: S685150B-17
QC Type: CS
% Moisture: 0
Location: AF-19

	RESULT	QUAL	UNI
4,4'-DDD	4.5	U	ug/
4,4'-DDE	4.5	U	ug/
4,4'-DDT	4.5	U	ug/
Aldrin	3.4	J	ug/
alpha-BHC	0.97	J	ug/
Aroclor-1016	45	U	ug/
Aroclor-1221	91	U	ug/
Aroclor-1232	45	U	ug/
Aroclor-1242	45	U	ug/
Aroclor-1248	45	U	ug/
Aroclor-1254	45	U	ug/
Aroclor-1260	45	U	ug/
beta-BHC	2.3	U	ug/
Chlordane	23	U	ug/
Chlorobenzilate	23	U	ug/
delta-BHC	0.23	J	ug/
Dieldrin	0.99	J	ug/
Endosulfan I	2.3	U	ug/
Endosulfan II	0.43	J	ug
Endosulfan sulfate	17	J	ug
Endrin	4.5	U	ug
Endrin aldehyde	1.4	J	ug
gamma-BHC	1.5	J	ug
Heptachlor	1.4	J	ug
Heptachlor epoxide	2.3	U	ug
Isodrin	2.1	J	ug
Methoxychlor	4.6	J	ug
Toxaphene	230	U	ug

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR003

PESTICIDES/PCBs

Sample Number: AF-20
Sample Date: 8/29/96
Laboratory ID: S685150B-15
QC Type: CS
% Moisture: 0
Location: AF-20

	RESULT	QUAL	UNITS
4,4'-DDD	0.42	J	ug/kg
4,4'-DDE	4.5	U	ug/kg
4,4'-DDT	4.5	U	ug/kg
Aldrin	3	J	ug/kg
alpha-BHC	2.3	U	ug/kg
Aroclor-1016	45	U	ug/kg
Aroclor-1221	91	U	ug/kg
Aroclor-1232	45	U	ug/kg
Aroclor-1242	45	U	ug/kg
Aroclor-1248	45	U	ug/kg
Aroclor-1254	45	U	ug/kg
Aroclor-1260	45	U	ug/kg
beta-BHC	2.3	U	ug/kg
Chlordane	23	U	ug/kg
Chlorobenzilate	23	U	ug/kg
delta-BHC	2.3	U	ug/kg
Dieldrin	4.5	U	ug/kg
Endosulfan I	2.3	U	ug/kg
Endosulfan II	0.3	J	ug/kg
Endosulfan sulfate	16	J	ug/kg
Endrin	4.5	U	ug/kg
Endrin aldehyde	1.5	J	ug/kg
gamma-BHC	0.34	J	ug/kg
Heptachlor	2.3	U	ug/kg
Heptachlor epoxide	2.3	U	ug/kg
Isodrin	2.2	J	ug/kg
Methoxychlor	23	U	ug/kg
Toxaphene	230	U	ug/kg

Sample Number: AF-21
Sample Date: 8/29/96
Laboratory ID: S685150B-14
QC Type: CS
% Moisture: 0
Location: AF-21

	RESULT	QUAL	UNITS
4,4'-DDD	1	J	ug/kg
4,4'-DDE	0.99	J	ug/kg
4,4'-DDT	4.1	U	ug/kg
Aldrin	2.8	J	ug/kg
alpha-BHC	2.1	U	ug/kg
Aroclor-1016	41	U	ug/kg
Aroclor-1221	84	U	ug/kg
Aroclor-1232	41	U	ug/kg
Aroclor-1242	41	U	ug/kg
Aroclor-1248	41	U	ug/kg
Aroclor-1254	41	U	ug/kg
Aroclor-1260	41	U	ug/kg
beta-BHC	2.1	U	ug/kg
Chlordane	21	U	ug/kg
Chlorobenzilate	21	U	ug/kg
delta-BHC	2.1	U	ug/kg
Dieldrin	0.89	J	ug/kg
Endosulfan I	2.1	U	ug/kg
Endosulfan II	0.22	J	ug/kg
Endosulfan sulfate	2.6	J	ug/kg
Endrin	4.1	U	ug/kg
Endrin aldehyde	1.4	J	ug/kg
gamma-BHC	2.1	U	ug/kg
Heptachlor	0.48	J	ug/kg
Heptachlor epoxide	2.1	U	ug/kg
Isodrin	2.9	J	ug/kg
Methoxychlor	21	U	ug/kg
Toxaphene	210	U	ug/kg

Sample Number: AF-22
Sample Date: 8/29/96
Laboratory ID: S685150B-16
QC Type: CS
% Moisture: 0
Location: AF-22

	RESULT	QUAL	UNIT
4,4'-DDD	4.7	U	ug/k
4,4'-DDE	1	J	ug/k
4,4'-DDT	4.7	U	ug/k
Aldrin	3.8	J	ug/k
alpha-BHC	2.4	U	ug/k
Aroclor-1016	47	U	ug/k
Aroclor-1221	96	U	ug/k
Aroclor-1232	47	U	ug/k
Aroclor-1242	47	U	ug/k
Aroclor-1248	47	U	ug/k
Aroclor-1254	47	U	ug/k
Aroclor-1260	47	U	ug/k
beta-BHC	2.4	U	ug/k
Chlordane	24	U	ug/k
Chlorobenzilate	24	U	ug/k
delta-BHC	2.4	U	ug/k
Dieldrin	0.81	J	ug/k
Endosulfan I	2.4	U	ug/k
Endosulfan II	0.52	J	ug/k
Endosulfan sulfate	4.4	J	ug/k
Endrin	4.7	U	ug/k
Endrin aldehyde	1.4	J	ug/k
gamma-BHC	0.29	J	ug/k
Heptachlor	0.75	J	ug/k
Heptachlor epoxide	2.4	U	ug/k
Isodrin	4	J	ug/k
Methoxychlor	2.6	J	ug/k
Toxaphene	240	U	ug/k

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SDG: BR003

PESTICIDES/PCBs

Sample Number: AF-26
Sample Date: 8/29/96
Laboratory ID: S685150B-19
QC Type: CS
% Moisture: 0
Location: AF-26

	RESULT	QUAL	UNITS
4,4'-DDD	1.2	J	ug/kg
4,4'-DDE	2.6	J	ug/kg
4,4'-DDT	5	U	ug/kg
Aldrin	1.4	J	ug/kg
alpha-BHC	2.6	U	ug/kg
Aroclor-1016	50	U	ug/kg
Aroclor-1221	100	U	ug/kg
Aroclor-1232	50	U	ug/kg
Aroclor-1242	50	U	ug/kg
Aroclor-1248	50	U	ug/kg
Aroclor-1254	50	U	ug/kg
Aroclor-1260	50	U	ug/kg
beta-BHC	0.91	J	ug/kg
Chlordane	26	U	ug/kg
Chlorobenzilate	30		ug/kg
delta-BHC	2.6	U	ug/kg
Dieldrin	1.9	J	ug/kg
Endosulfan I	2.1	J	ug/kg
Endosulfan II	0.36	J	ug/kg
Endosulfan sulfate	15	J	ug/kg
Endrin	5	U	ug/kg
Endrin aldehyde	2.2	J	ug/kg
gamma-BHC	2.6	U	ug/kg
Heptachlor	1.1	J	ug/kg
Heptachlor epoxide	0.62	J	ug/kg
Isodrin	5	U	ug/kg
Methoxychlor	26	U	ug/kg
Toxaphene	260	U	ug/kg

Sample Number: AF-31
Sample Date: 8/29/96
Laboratory ID: S685150B-8
QC Type: CS
% Moisture: 0
Location: AF-31

	RESULT	QUAL	UNITS
4,4'-DDD	0.95	J	ug/kg
4,4'-DDE	1.1	J	ug/kg
4,4'-DDT	5.2	U	ug/kg
Aldrin	0.93	J	ug/kg
alpha-BHC	2.7	U	ug/kg
Aroclor-1016	52	U	ug/kg
Aroclor-1221	100	U	ug/kg
Aroclor-1232	52	U	ug/kg
Aroclor-1242	52	U	ug/kg
Aroclor-1248	52	U	ug/kg
Aroclor-1254	52	U	ug/kg
Aroclor-1260	52	U	ug/kg
beta-BHC	2.7	U	ug/kg
Chlordane	27	U	ug/kg
Chlorobenzilate	40	J	ug/kg
delta-BHC	2.7	U	ug/kg
Dieldrin	0.82	J	ug/kg
Endosulfan I	1.4	J	ug/kg
Endosulfan II	0.34	J	ug/kg
Endosulfan sulfate	5.2	U	ug/kg
Endrin	5.2	U	ug/kg
Endrin aldehyde	2.3	J	ug/kg
gamma-BHC	0.41	J	ug/kg
Heptachlor	2.7	U	ug/kg
Heptachlor epoxide	0.81	J	ug/kg
Isodrin	5.2	U	ug/kg
Methoxychlor	7.8	J	ug/kg
Toxaphene	270	U	ug/kg

Sample Number: AF-32
Sample Date: 8/29/96
Laboratory ID: S685150B-13
QC Type: CS
% Moisture: 0
Location: AF-32

	RESULT	QUAL	UNI
4,4'-DDD	1.3	J	ug/
4,4'-DDE	1.7	J	ug/
4,4'-DDT	4.1	J	ug/
Aldrin	2	J	ug/
alpha-BHC	2.7	U	ug/
Aroclor-1016	52	U	ug/
Aroclor-1221	100	U	ug/
Aroclor-1232	52	U	ug/
Aroclor-1242	52	U	ug/
Aroclor-1248	52	U	ug/
Aroclor-1254	52	U	ug/
Aroclor-1260	52	U	ug/
beta-BHC	2.7	U	ug/
Chlordane	27	U	ug/
Chlorobenzilate	25	J	ug/
delta-BHC	2.7	U	ug/
Dieldrin	0.97	J	ug/
Endosulfan I	1.7	J	ug/
Endosulfan II	0.26	J	ug/
Endosulfan sulfate	1.2	J	ug/
Endrin	5.2	U	ug/
Endrin aldehyde	1.8	J	ug/
gamma-BHC	0.42	J	ug/
Heptachlor	0.82	J	ug/
Heptachlor epoxide	0.66	J	ug/
Isodrin	0.64	J	ug/
Methoxychlor	4.9	J	ug/
Toxaphene	270	U	ug/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR003

PESTICIDES/PCBs

Sample Number: AF-33
Sample Date: 8/29/96
Laboratory ID: S685150B-7
QC Type: CS
% Moisture: 0
Location: AF-33

	RESULT	QUAL	UNITS
4,4'-DDD	1.1	J	ug/kg
4,4'-DDE	0.64	J	ug/kg
4,4'-DDT	1.5	J	ug/kg
Aldrin	0.6	J	ug/kg
alpha-BHC	1.1	U	ug/kg
Aroclor-1016	22	U	ug/kg
Aroclor-1221	45	U	ug/kg
Aroclor-1232	22	U	ug/kg
Aroclor-1242	22	U	ug/kg
Aroclor-1248	22	U	ug/kg
Aroclor-1254	22	U	ug/kg
Aroclor-1260	22	U	ug/kg
beta-BHC	0.99	J	ug/kg
Chlordane	11	U	ug/kg
Chlorobenzilate	24		ug/kg
delta-BHC	1.1	U	ug/kg
Dieldrin	0.17	J	ug/kg
Endosulfan I	0.67	J	ug/kg
Endosulfan II	0.13	J	ug/kg
Endosulfan sulfate	0.75	J	ug/kg
Endrin	2.2	U	ug/kg
Endrin aldehyde	1	J	ug/kg
gamma-BHC	1.1	U	ug/kg
Heptachlor	0.051	J	ug/kg
Heptachlor epoxide	0.22	J	ug/kg
Isodrin	0.45	J	ug/kg
Methoxychlor	2.1	J	ug/kg
Toxaphene	110	U	ug/kg

Sample Number: AF-34
Sample Date: 8/29/96
Laboratory ID: S685150B-9
QC Type: CS
% Moisture: 0
Location: AF-34

	RESULT	QUAL	UNITS
4,4'-DDD	2.7	J	ug/kg
4,4'-DDE	3.7	U	ug/kg
4,4'-DDT	3.7	U	ug/kg
Aldrin	3	J	ug/kg
alpha-BHC	1.9	U	ug/kg
Aroclor-1016	37	U	ug/kg
Aroclor-1221	74	U	ug/kg
Aroclor-1232	37	U	ug/kg
Aroclor-1242	37	U	ug/kg
Aroclor-1248	37	U	ug/kg
Aroclor-1254	37	U	ug/kg
Aroclor-1260	37	U	ug/kg
beta-BHC	1.9	U	ug/kg
Chlordane	19	U	ug/kg
Chlorobenzilate	19	U	ug/kg
delta-BHC	0.16	J	ug/kg
Dieldrin	3.7	U	ug/kg
Endosulfan I	0.12	J	ug/kg
Endosulfan II	0.47	J	ug/kg
Endosulfan sulfate	3.7	U	ug/kg
Endrin	3.7	U	ug/kg
Endrin aldehyde	2.2	J	ug/kg
gamma-BHC	1.9	U	ug/kg
Heptachlor	2.6		ug/kg
Heptachlor epoxide	0.42	J	ug/kg
Isodrin	1.1	J	ug/kg
Methoxychlor	4.2	J	ug/kg
Toxaphene	190	U	ug/kg

Sample Number: AF-35
Sample Date: 8/29/96
Laboratory ID: S685150B-10
QC Type: CS
% Moisture: 0
Location: AF-35

	RESULT	QUAL	UNIT
4,4'-DDD	0.98	J	ug/k
4,4'-DDE	3.3	U	ug/k
4,4'-DDT	3.3	U	ug/k
Aldrin	2	J	ug/k
alpha-BHC	1.7	U	ug/k
Aroclor-1016	33	U	ug/k
Aroclor-1221	67	U	ug/k
Aroclor-1232	33	U	ug/k
Aroclor-1242	33	U	ug/k
Aroclor-1248	33	U	ug/k
Aroclor-1254	33	U	ug/k
Aroclor-1260	33	U	ug/k
beta-BHC	3	J	ug/k
Chlordane	17	U	ug/k
Chlorobenzilate	17	U	ug/k
delta-BHC	1.7	U	ug/k
Dieldrin	3.3	U	ug/k
Endosulfan I	1.7	U	ug/k
Endosulfan II	0.3	J	ug/k
Endosulfan sulfate	3.3	U	ug/k
Endrin	3.3	U	ug/k
Endrin aldehyde	1.1	J	ug/k
gamma-BHC	1.7	U	ug/k
Heptachlor	1.9		ug/k
Heptachlor epoxide	1.7	U	ug/k
Isodrin	0.59	J	ug/k
Methoxychlor	2.7	J	ug/k
Toxaphene	170	U	ug/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR003

PESTICIDES/PCBs

Sample Number: AF-36
Sample Date: 8/29/96
Laboratory ID: S685150B-12
QC Type: CS
% Moisture: 0
Location: AF-36

	RESULT	QUAL	UNITS
4,4'-DDD	5	U	ug/kg
4,4'-DDE	0.72	J	ug/kg
4,4'-DDT	3.8	J	ug/kg
Aldrin	0.9	J	ug/kg
alpha-BHC	1.3	J	ug/kg
Aroclor-1016	50	U	ug/kg
Aroclor-1221	100	U	ug/kg
Aroclor-1232	50	U	ug/kg
Aroclor-1242	50	U	ug/kg
Aroclor-1248	50	U	ug/kg
Aroclor-1254	50	U	ug/kg
Aroclor-1260	50	U	ug/kg
beta-BHC	2.6	U	ug/kg
Chlordane	26	U	ug/kg
Chlorobenzilate	26	U	ug/kg
delta-BHC	2.6	U	ug/kg
Dieldrin	0.68	J	ug/kg
Endosulfan I	2.6	U	ug/kg
Endosulfan II	5	U	ug/kg
Endosulfan sulfate	1.2	J	ug/kg
Endrin	5	U	ug/kg
Endrin aldehyde	5	U	ug/kg
gamma-BHC	2.6	U	ug/kg
Heptachlor	2	J	ug/kg
Heptachlor epoxide	2.6	U	ug/kg
Isodrin	1.7	J	ug/kg
Methoxychlor	26	U	ug/kg
Toxaphene	260	U	ug/kg

Sample Number: AF-37
Sample Date: 8/29/96
Laboratory ID: S685150B-11
QC Type: CS
% Moisture: 0
Location: AF-37

	RESULT	QUAL	UNITS
4,4'-DDD	0.62	J	ug/kg
4,4'-DDE	0.74	J	ug/kg
4,4'-DDT	1.2	J	ug/kg
Aldrin	3.8	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	4.4		ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.53	J	ug/kg
Dieldrin	0.17	J	ug/kg
Endosulfan I	0.51	J	ug/kg
Endosulfan II	0.51	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	0.68	J	ug/kg
gamma-BHC	1.2	J	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	0.26	J	ug/kg
Isodrin	2.4	J	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: S5F-20
Sample Date: 8/29/96
Laboratory ID: S685150B-1
QC Type: CS
% Moisture: 0
Location: S5F-20

	RESULT	QUAL	UN
4,4'-DDD	0.86	J	ug
4,4'-DDE	1.5	J	ug
4,4'-DDT	6.4	J	ug
Aldrin	1.7	J	ug
alpha-BHC	2	U	ug
Aroclor-1016	40	U	ug
Aroclor-1221	80	U	ug
Aroclor-1232	40	U	ug
Aroclor-1242	40	U	ug
Aroclor-1248	40	U	ug
Aroclor-1254	40	U	ug
Aroclor-1260	40	U	ug
beta-BHC	2.8		ug
Chlordane	20	U	ug
Chlorobenzilate	56		ug
delta-BHC	2	U	ug
Dieldrin	3.2	J	ug
Endosulfan I	1.7	J	ug
Endosulfan II	0.72	J	ug
Endosulfan sulfate	7	J	ug
Endrin	4	U	ug
Endrin aldehyde	7.4	J	ug
gamma-BHC	2.8		ug
Heptachlor	5.9		ug
Heptachlor epoxide	2	U	ug
Isodrin	1.4	J	ug
Methoxychlor	8.1	J	ug
Toxaphene	200	U	ug

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR003

PESTICIDES/PCBs

Sample Number: S5F-21
Sample Date: 8/26/96
Laboratory ID: S685150B-2
QC Type: CS
% Moisture: 0
Location: S5F-21

	RESULT	QUAL	UNITS
4,4'-DDD	24		ug/kg
4,4'-DDE	2.6	J	ug/kg
4,4'-DDT	11	J	ug/kg
Aldrin	5.1	J	ug/kg
alpha-BHC	2.6	U	ug/kg
Aroclor-1016	50	U	ug/kg
Aroclor-1221	100	U	ug/kg
Aroclor-1232	50	U	ug/kg
Aroclor-1242	50	U	ug/kg
Aroclor-1248	50	U	ug/kg
Aroclor-1254	50	U	ug/kg
Aroclor-1260	50	U	ug/kg
beta-BHC	2.6	U	ug/kg
Chlordane	26	U	ug/kg
Chlorobenzilate	330	J	ug/kg
delta-BHC	0.55	J	ug/kg
Dieldrin	2.5	J	ug/kg
Endosulfan I	3.3		ug/kg
Endosulfan II	2.2	J	ug/kg
Endosulfan sulfate	6.7		ug/kg
Endrin	5	U	ug/kg
Endrin aldehyde	12	J	ug/kg
gamma-BHC	1.3	J	ug/kg
Heptachlor	8.1	J	ug/kg
Heptachlor epoxide	0.75	J	ug/kg
Isodrin	0.97	J	ug/kg
Methoxychlor	1.3	J	ug/kg
Toxaphene	260	U	ug/kg

Sample Number: S5F-22
Sample Date: 8/26/96
Laboratory ID: S685150B-3
QC Type: CS
% Moisture: 0
Location: S5F-22

	RESULT	QUAL	UNITS
4,4'-DDD	5		ug/kg
4,4'-DDE	1.2	J	ug/kg
4,4'-DDT	5.3	J	ug/kg
Aldrin	2.6	J	ug/kg
alpha-BHC	2.6	U	ug/kg
Aroclor-1016	50	U	ug/kg
Aroclor-1221	100	U	ug/kg
Aroclor-1232	50	U	ug/kg
Aroclor-1242	50	U	ug/kg
Aroclor-1248	50	U	ug/kg
Aroclor-1254	50	U	ug/kg
Aroclor-1260	50	U	ug/kg
beta-BHC	2.4	J	ug/kg
Chlordane	26	U	ug/kg
Chlorobenzilate	30	J	ug/kg
delta-BHC	2.6	U	ug/kg
Dieldrin	1.7	J	ug/kg
Endosulfan I	0.94	J	ug/kg
Endosulfan II	4	J	ug/kg
Endosulfan sulfate	5.8	J	ug/kg
Endrin	1.4	J	ug/kg
Endrin aldehyde	5.4	J	ug/kg
gamma-BHC	0.64	J	ug/kg
Heptachlor	3		ug/kg
Heptachlor epoxide	2.6	U	ug/kg
Isodrin	5	U	ug/kg
Methoxychlor	1.3	J	ug/kg
Toxaphene	260	U	ug/kg

Sample Number: S5F-23
Sample Date: 8/29/96
Laboratory ID: S685150B-4
QC Type: CS
% Moisture: 0
Location: S5F-23

	RESULT	QUAL	UNI
4,4'-DDD	1.3	J	ug/
4,4'-DDE	1.8	J	ug/
4,4'-DDT	8.5		ug/
Aldrin	1.3	J	ug/
alpha-BHC	2.3	U	ug/
Aroclor-1016	45	U	ug/
Aroclor-1221	91	U	ug/
Aroclor-1232	45	U	ug/
Aroclor-1242	45	U	ug/
Aroclor-1248	45	U	ug/
Aroclor-1254	45	U	ug/
Aroclor-1260	45	U	ug/
beta-BHC	0.69	J	ug/
Chlordane	23	U	ug/
Chlorobenzilate	48		ug/
delta-BHC	2.3	U	ug/
Dieldrin	4.5	U	ug/
Endosulfan I	0.37	J	ug/
Endosulfan II	4.5	U	ug/
Endosulfan sulfate	4.5	U	ug/
Endrin	1.2	J	ug/
Endrin aldehyde	9.2		ug/
gamma-BHC	0.44	J	ug/
Heptachlor	2.3	U	ug/
Heptachlor epoxide	2.3	U	ug/
Isodrin	2	J	ug/
Methoxychlor	0.74	J	ug/
Toxaphene	230	U	ug/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR003

PESTICIDES/PCBs

Sample Number: S5F-24
Sample Date: 8/29/96
Laboratory ID: S685150B-5
QC Type: CS
% Moisture: 0
Location: S5F-24

	RESULT	QUAL	UNITS
4,4'-DDD	2.6	J	ug/kg
4,4'-DDE	1.9	J	ug/kg
4,4'-DDT	21		ug/kg
Aldrin	1.4	J	ug/kg
alpha-BHC	2.6	U	ug/kg
Aroclor-1016	50	U	ug/kg
Aroclor-1221	100	U	ug/kg
Aroclor-1232	50	U	ug/kg
Aroclor-1242	50	U	ug/kg
Aroclor-1248	50	U	ug/kg
Aroclor-1254	50	U	ug/kg
Aroclor-1260	50	U	ug/kg
beta-BHC	4.2		ug/kg
Chlordane	26	U	ug/kg
Chlorobenzilate	39	J	ug/kg
delta-BHC	2.6	U	ug/kg
Dieldrin	4.2	J	ug/kg
Endosulfan I	0.85	J	ug/kg
Endosulfan II	2.2	J	ug/kg
Endosulfan sulfate	22		ug/kg
Endrin	5	U	ug/kg
Endrin aldehyde	5.3	J	ug/kg
gamma-BHC	1.7	J	ug/kg
Heptachlor	2.9	J	ug/kg
Heptachlor epoxide	2.6	U	ug/kg
Isodrin	1.1	J	ug/kg
Methoxychlor	4.4	J	ug/kg
Toxaphene	260	U	ug/kg

Sample Number: S5F-25
Sample Date: 8/29/96
Laboratory ID: S685150B-6
QC Type: CS
% Moisture: 0
Location: S5F-25

	RESULT	QUAL	UNITS
4,4'-DDD	3.4		ug/kg
4,4'-DDE	1.2	J	ug/kg
4,4'-DDT	9.2		ug/kg
Aldrin	1	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	3		ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	47	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	0.28	J	ug/kg
Endosulfan II	0.41	J	ug/kg
Endosulfan sulfate	4.4	J	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	2.2	J	ug/kg
gamma-BHC	0.88	J	ug/kg
Heptachlor	2.2		ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

INORGANIC DATA VALIDATION

Brown & Root Environmental **INTERNAL CORRESPONDENCE**

TO:	**C. BRYAN**	**DATE:**	**JANUARY 23, 1997**
FROM:	**MIGNON J. CLARKE**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA REVIEW – TAL METALS**
CTO 007 –KEY WEST, FLORIDA
SDG – BR004

SAMPLES: 20/Tissue/

AC-27	AF-24	AF-14	AC-30
AF-25	AF-23	AF-12	AC-4
AF-11	AF-13	AC-5	AC-1
AF-18	AF-16	AC-2	AC-6
AF-17	AF-15	AC-9	AC-8

Introduction

A data review was performed on the inorganic analytical data from CTO 007, Key West, SDG-BR004, which consists of twenty (20) environmental tissue samples.

All samples except AC-27 were analyzed for Target Analyte List (TAL) metals. The samples were collected by Brown & Root Environmental on August 29, 1996 and analyzed by Savannah Laboratories under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- Calibration Verifications
- * Laboratory Blank Analyses
- Laboratory Duplicate Results
- Matrix Spike Analysis

* Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analysis

The following contaminants were detected in the laboratory method/preparation/field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration		Action Level	
Aluminum	30.0	ug/L	30.0	mg/kg
Arsenic	3.5	ug/L	3.5	mg/kg
Barium	1.8	ug/L	1.8	mg/kg
Cadmium	2.8	ug/L	2.8	mg/kg
Calcium[1]	13.908	mg/kg	69.54	mg/kg
Cobalt	3.4	ug/L	3.4	mg/kg
Copper	9.1	ug/L	9.1	mg/kg
Iron	29.2	ug/L	29.2	mg/kg
Magnesium	23.76	ug/L	23.76	mg/kg
Mercury[1]	0.019	ug/kg	0.095	mg/kg
Silver	1.9	ug/L	1.9	mg/kg
Sodium	51.3	ug/L	51.3	mg/kg
Zinc	2.6	ug/L	2.6	mg/kg

Samples affected: All

[1] Maximum concentration found in an aqueous preparation blank.

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for aluminum, arsenic, barium, cadmium, copper, iron, and mercury have been qualified as nondetected "U." No action was taken for the remaining analytes since either the results were greater than the action level or were nondetects.

Notes

It was noted that all samples met the contract holding time limit criteria of six (6) months.

It was noted that cadmium exceeded the quality control limit for Contract Required Detection Limit (CRDL) Percent Recoveries (%R). However, no validation actions were taken for CRDL %R.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method blank.

No other problems were encountered in this case.
The data for these analysis were reviewed in accordance with the "National Functional Guidelines for Inorganic Data Validation," as amended for use within USEPA Region I; and the NEESA document entitled "Sampling and Chemical Analysis Quality Assurance requirements for the Navy Installation Restoration Program" (NEESA 20.2-047B; 6/88).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)".

Mignon J. Clarke
for Brown & Root Environmental
Chemist/Data Validator

Joseph A. Samchuck
for Brown & Root Environmental
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

Appendix A - Qualified Analytical Results

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR004

INORGANICS

Sample Number: AC-1
Sample Date: 8/22/96
Laboratory ID: S685150C-18
QC Type: CS
% Moisture: 0
Location: AC-1

	RESULT	QUAL	UNITS
Aluminum	3.6	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	4.3		mg/kg
Barium	0.57	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	7200		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	26.9		mg/kg
Iron	13.3	U	mg/kg
Lead	0.38		mg/kg
Magnesium	831		mg/kg
Manganese	2.8		mg/kg
Mercury	0.04	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2210		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	4560		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	46.1		mg/kg

Sample Number: AC-2
Sample Date: 8/22/96
Laboratory ID: S685150C-14
QC Type: CS
% Moisture: 0
Location: AC-2

	RESULT	QUAL	UNITS
Aluminum	2.6	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	5.2		mg/kg
Barium	2.3		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	16000		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	30.2		mg/kg
Iron	15.5	U	mg/kg
Lead	1.7		mg/kg
Magnesium	1520		mg/kg
Manganese	10.9		mg/kg
Mercury	0.04	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2330		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	4990		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	39.9		mg/kg

Sample Number: AC-30
Sample Date: 8/26/96
Laboratory ID: S685150C-16
QC Type: CS
% Moisture: 0
Location: AC-30

	RESULT	QUAL	UI
Aluminum	5.1	U	m
Antimony	2.4	U	m
Arsenic	3.2	U	m
Barium	0.83	U	m
Beryllium	0.04	U	m
Cadmium	0.53	U	m
Calcium	8060		m
Chromium	0.82	U	m
Cobalt	0.37	U	m
Copper	17.8		m
Iron	17.9	U	m
Lead	0.5		m
Magnesium	924		m
Manganese	2.7		m
Mercury	0.08	U	m
Nickel	0.85	U	m
Potassium	1370		m
Selenium	1	U	m
Silver	0.23	U	m
Sodium	6910		m
Thallium	0.81	U	m
Vanadium	0.45	U	m
Zinc	17.1		m

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR004

INORGANICS

Sample Number: AC-4
Sample Date: 8/22/96
Laboratory ID: S685150C-17
QC Type: CS
% Moisture: 0
Location: AC-4

	RESULT	QUAL	UNITS
Aluminum	3.3	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	3.9		mg/kg
Barium	3		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	46300		mg/kg
Chromium	0.97		mg/kg
Cobalt	0.37	U	mg/kg
Copper	16.6		mg/kg
Iron	14.2	U	mg/kg
Lead	0.89		mg/kg
Magnesium	3140		mg/kg
Manganese	5.6		mg/kg
Mercury	0.05	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2010		mg/kg
Selenium	1	U	mg/kg
Silver	0.31	U	mg/kg
Sodium	5210		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	26.3		mg/kg

Sample Number: AC-5
Sample Date: 8/23/96
Laboratory ID: S685150C-13
QC Type: CS
% Moisture: 0
Location: AC-5

	RESULT	QUAL	UNITS
Aluminum	3.4	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	4.7		mg/kg
Barium	1.4	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	12900		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	21.4		mg/kg
Iron	8.4	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	1260		mg/kg
Manganese	5.4		mg/kg
Mercury	0.05	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2340		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	4970		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	33.9		mg/kg

Sample Number: AC-6
Sample Date: 8/23/96
Laboratory ID: S685150C-19
QC Type: CS
% Moisture: 0
Location: AC-6

	RESULT	QUAL	UNI
Aluminum	2.2	U	mg/
Antimony	2.4	U	mg/
Arsenic	4.2		mg/
Barium	0.58	U	mg/
Beryllium	0.04	U	mg/
Cadmium	0.53	U	mg/
Calcium	7560		mg/
Chromium	0.82	U	mg/
Cobalt	0.37	U	mg/k
Copper	30.2		mg/k
Iron	5.1	U	mg/k
Lead	0.34	U	mg/k
Magnesium	965		mg/k
Manganese	2.4		mg/k
Mercury	0.04	U	mg/k
Nickel	0.85	U	mg/k
Potassium	2150		mg/k
Selenium	1	U	mg/k
Silver	0.24	U	mg/k
Sodium	5600		mg/k
Thallium	0.81	U	mg/k
Vanadium	0.45	U	mg/k
Zinc	32.8		mg/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR004

INORGANICS

Sample Number: AC-8
Sample Date: 8/23/96
Laboratory ID: S685150C-20
QC Type: CS
% Moisture: 0
Location: AC-8

	RESULT	QUAL	UNITS
Aluminum	10.1	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	2.9	U	mg/kg
Barium	4.8		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	90400		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	18.8		mg/kg
Iron	25.7	U	mg/kg
Lead	0.6		mg/kg
Magnesium	10200		mg/kg
Manganese	30.1		mg/kg
Mercury	0.03	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2030		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	4910		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	52.1		mg/kg

Sample Number: AC-9
Sample Date: 8/23/96
Laboratory ID: S685150C-15
QC Type: CS
% Moisture: 0
Location: AC-9

	RESULT	QUAL	UNITS
Aluminum	3.9	U	mg/kg
Antimony	2.4	U	MG/KG
Arsenic	3.3	U	MG/KG
Barium	0.72	U	MG/KG
Beryllium	0.04	U	MG/KG
Cadmium	0.53	U	MG/KG
Calcium	13100		MG/KG
Chromium	0.82	U	MG/KG
Cobalt	0.37	U	MG/KG
Copper	23.9		MG/KG
Iron	4	U	MG/KG
Lead	0.34	U	MG/KG
Magnesium	1120		MG/KG
Manganese	2.1		MG/KG
Mercury	0.03	U	mg/kg
Nickel	0.85	U	MG/KG
Potassium	1730		MG/KG
Selenium	1	U	MG/KG
Silver	0.23	U	MG/KG
Sodium	6690		MG/KG
Thallium	0.81	U	MG/KG
Vanadium	0.45	U	MG/KG
Zinc	22.6		MG/KG

Sample Number: AF-11
Sample Date: 8/24/96
Laboratory ID: S685150C-3
QC Type: CS
% Moisture: 0
Location: AF-11

	RESULT	QUAL	UN
Aluminum	1.7	U	mg
Antimony	2.4	U	mg
Arsenic	1.4	U	mg
Barium	0.65	U	mg
Beryllium	0.04	U	mg
Cadmium	0.53	U	mg
Calcium	14300		mg
Chromium	0.82	U	mg
Cobalt	0.45	U	mg
Copper	0.94	U	mg
Iron	16.6	U	mg
Lead	0.34	U	mg
Magnesium	593		mg
Manganese	4.2		mg
Mercury	0.02	U	mg
Nickel	0.85	U	mg
Potassium	2840		mg
Selenium	1	U	mg
Silver	0.23	U	mg
Sodium	1870		mg
Thallium	0.81	U	mg
Vanadium	0.45	U	mg
Zinc	52.4		mg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR004

INORGANICS

Sample Number: AF-12
Sample Date: 8/24/96
Laboratory ID: S685150C-12
QC Type: CS
% Moisture: 0
Location: AF-12

	RESULT	QUAL	UNITS
Aluminum	1.8	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.2	U	mg/kg
Barium	0.76	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	14200		mg/kg
Chromium	0.88		mg/kg
Cobalt	0.37	U	mg/kg
Copper	2.8	U	mg/kg
Iron	19.9	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	584		mg/kg
Manganese	5.3		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2990		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1710		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	42.1		mg/kg

Sample Number: AF-13
Sample Date: 8/24/96
Laboratory ID: S685150C-8
QC Type: CS
% Moisture: 0
Location: AF-13

	RESULT	QUAL	UNITS
Aluminum	1.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.2	U	mg/kg
Barium	0.82	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.55	U	mg/kg
Calcium	13700		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	1.1	U	mg/kg
Iron	15.4	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	607		mg/kg
Manganese	5.7		mg/kg
Mercury	0.03	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2980		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1800		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	44.4		mg/kg

Sample Number: AF-14
Sample Date: 8/24/96
Laboratory ID: S685150C-11
QC Type: CS
% Moisture: 0
Location: AF-14

	RESULT	QUAL	UNI
Aluminum	3	U	mg/
Antimony	2.4	U	mg/
Arsenic	1	U	mg/
Barium	1.1	U	mg/
Beryllium	0.04	U	mg/
Cadmium	0.53	U	mg/
Calcium	15100		mg/
Chromium	0.82	U	mg/
Cobalt	0.37	U	mg/
Copper	1.1	U	mg/
Iron	13.2	U	mg/
Lead	0.37		mg/
Magnesium	644		mg/
Manganese	6.2		mg/
Mercury	0.03	U	mg/
Nickel	0.85	U	mg/
Potassium	3211		mg/
Selenium	1	U	mg/
Silver	0.23	U	mg/
Sodium	1970		mg/
Thallium	0.81	U	mg/
Vanadium	0.45	U	mg/
Zinc	42.7		mg/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR004

INORGANICS

Sample Number: AF-15
Sample Date: 8/24/96
Laboratory ID: S685150C-10
QC Type: CS
% Moisture: 0
Location: AF-15

	RESULT	QUAL	UNITS
Aluminum	2.2	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.5	U	mg/kg
Barium	2		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	18800		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	1.3	U	mg/kg
Iron	17	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	613		mg/kg
Manganese	7.6		mg/kg
Mercury	0.03	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2910		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1780		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	60.9		mg/kg

Sample Number: AF-16
Sample Date: 8/24/96
Laboratory ID: S685150C-9
QC Type: CS
% Moisture: 0
Location: AF-16

	RESULT	QUAL	UNITS
Aluminum	2.8	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.1	U	mg/kg
Barium	1.3	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	13300		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.45	U	mg/kg
Copper	1	U	mg/kg
Iron	23.1	U	mg/kg
Lead	0.59		mg/kg
Magnesium	654		mg/kg
Manganese	5.4		mg/kg
Mercury	0.03	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	3010		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1770		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	66.1		mg/kg

Sample Number: AF-17
Sample Date: 8/24/96
Laboratory ID: S685150C-5
QC Type: CS
% Moisture: 0
Location: AF-17

	RESULT	QUAL	UNIT
Aluminum	4.6	U	mg/k
Antimony	2.4	U	mg/k
Arsenic	1.5	U	mg/k
Barium	4.1		mg/k
Beryllium	0.04	U	mg/k
Cadmium	0.53	U	mg/k
Calcium	17300		mg/k
Chromium	0.82	U	mg/k
Cobalt	0.37	U	mg/k
Copper	5.2	U	mg/k
Iron	42.4		mg/k
Lead	0.61		mg/k
Magnesium	690		mg/k
Manganese	6.7		mg/k
Mercury	0.02	U	mg/k
Nickel	0.85	U	mg/k
Potassium	2950		mg/k
Selenium	1	U	mg/k
Silver	0.23	U	mg/k
Sodium	2120		mg/k
Thallium	0.81	U	mg/k
Vanadium	0.45	U	mg/k
Zinc	45.2		mg/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR004

INORGANICS

Sample Number: AF-18
Sample Date: 8/24/96
Laboratory ID: S685150C-4
QC Type: CS
% Moisture: 0
Location: AF-18

	RESULT	QUAL	UNITS
Aluminum	7.6	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.6	U	mg/kg
Barium	3.1		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	14600		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	4.4	U	mg/kg
Iron	33.2	U	mg/kg
Lead	0.46		mg/kg
Magnesium	596		mg/kg
Manganese	5.1		mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2580		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1900		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	39.7		mg/kg

Sample Number: AF-23
Sample Date: 8/25/96
Laboratory ID: S685150C-7
QC Type: CS
% Moisture: 0
Location: AF-23

	RESULT	QUAL	UNITS
Aluminum	2.5	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.82	U	mg/kg
Barium	0.75	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	14900		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	0.97	U	mg/kg
Iron	14.3		mg/kg
Lead	0.4		mg/kg
Magnesium	614		mg/kg
Manganese	5.2		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2810		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1720		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	45.7		mg/kg

Sample Number: AF-24
Sample Date: 8/25/96
Laboratory ID: S685150C-6
QC Type: CS
% Moisture: 0
Location: AF-24

	RESULT	QUAL	UN
Aluminum	1.7	U	mg
Antimony	2.4	U	mg
Arsenic	1.1	U	mg
Barium	0.64	U	mg
Beryllium	0.04	U	mg
Cadmium	0.53	U	mg
Calcium	8720		mg
Chromium	0.82	U	mg
Cobalt	0.37	U	mg
Copper	1.4	U	mg
Iron	12.1		mg
Lead	0.34	U	mg
Magnesium	466		mg
Manganese	3.4		mg
Mercury	0.02	U	mg
Nickel	0.85	U	mg
Potassium	2740		mg
Selenium	1	U	mg
Silver	0.23	U	mg
Sodium	1540		mg
Thallium	0.81	U	mg
Vanadium	0.45	U	mg
Zinc	34.2		mg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR004

INORGANICS

Sample Number: AF-25
Sample Date: 8/25/96
Laboratory ID: S685150C-2
QC Type: CS
% Moisture: 0
Location: AF-25

	RESULT	QUAL	UNITS
Aluminum	1.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.3	U	mg/kg
Barium	0.86	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	13300		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	1.2	U	mg/kg
Iron	14.2		mg/kg
Lead	0.35		mg/kg
Magnesium	598		mg/kg
Manganese	5.2		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2390		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1610		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	53.2		mg/kg

ORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**FEBRUARY 3, 1997**
FROM:	**TERESA M. HUDSON**	**COPIES:**	**DV FILE**
SUBJECT:	**ORGANIC DATA REVIEW – PEST/PCB ORGANICS CTO 007 – NAS KEY WEST, KEY WEST, FLORIDA SDG – BR004**		

SAMPLES: 20/TISSUE/

AC-27	AF-24	AF-14	AC-30
AF-25	AF-23	AF-12	AC-4
AF-11	AF-13	AC-5	AC-1
AF-18	AF-16	AC-2	AC-6
AF-17	AF-15	AC-9	AC-8

The sample set for the CTO 007 NAS Key West site, SDG BR004, consists of twenty (20) tissue samples. All samples were analyzed for Target Compound List (TCL) pesticide/PCB organic compounds.

The samples were collected by Brown & Root Environmental on August 29, 1996 and analyzed by Savannah Laboratories & Environmental Services, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Method 8080 analytical and reporting protocols. The data was evaluated according to the following parameters:

- Holding times
- Initial and continuing calibrations
- * Laboratory and field blank analyses
- Surrogate spike recoveries
- * Compound Quantitation

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Pesticide/PCBs

No pesticide compounds were detected in the laboratory method blank:

The laboratory qualifier "P" was removed from all target compound data with a %D above 25% and less than 100% between positive results on columns 1 and 2. The affected target compounds and samples are listed in the table below.

SAMPLE	AFFECTED COMPOUNDS
AC-27	Aldrin
AF-25	Beta-BHC, Dieldrin, Endrin aldehyde
AF-11	Beta-BHC, Heptachlor, Chlorobenzilate
AF-18	Heptachlor epoxide, Endosulfan II
AF-17	Heptachlor, Heptachlor epoxide, 4,4'-DDE, Endrin, 4,4'-DDD, Chlorobenzilate
AF-24	Heptachlor, Dieldrin, Endosulfan II
AF-23	Beta-BHC, Isodrin
AF-15	4,4'-DDT, Isodrin
AF-14	Beta-BHC, Endrin, Chlorobenzilate
AF-12	Alpha-BHC, Beta-BHC, Delta-BHC
AC-5	Alpha-BHC, Endosulfan I, 4,4'-DDE
AC-2	Methoxychlor
AC-9	Aldrin
AC-4	4,4'-DDE, 4,4'-DDD, Endosulfan sulfate
AC-1	Heptachlor, Heptachlor epoxide, 4,4'-DDD, 4,4'-DDT
AC-6	4,4'-DDE, Endrin, 4,4'-DDT
AC-8	4,4'-DDT

The laboratory qualifier "P" was removed from the target compound data for those compounds with a %D between column 1 and 2 greater than 100%. Positive hits were estimated "J." The affected samples and target compounds are listed in the table below.

SAMPLE	AFFECTED COMPOUNDS
AC-27	Heptachlor epoxide, Dieldrin, Endrin, Endosulfan II, 4,4'-DDD, Endosulfan sulfate, 4,4'-DDT, Chlorobenzilate
AF-25	Aldrin, 4,4'-DDD, Endosulfan sulfate, 4,4'-DDT
AF-11	Endosulfan I, 4,4'-DDE, Endrin, 4,4'-DDD, Endosulfan sulfate, 4,4'-DDT, Methoxychlor, Endrin aldehyde, Isodrin
AF-18	Beta-BHC, Endosulfan I, Endosulfan sulfate, 4,4'-DDT, Methoxychlor, Endrin aldehyde, Isodrin
AF-17	Endosulfan I, Dieldrin, Endosulfan sulfate, 4,4'-DDT, Methoxychlor, Endrin aldehyde, Isodrin
AF-24	Beta-BHC, Aldrin, 4,4'-DDE, 4,4'-DDD, 4,4'-DDT, Endrin aldehyde
AF-23	Aldrin, 4,4'-DDE, Endrin aldehyde
AF-13	Gamma-BHC (lindane), Aldrin, Dieldrin, 4,4'-DDE, Endrin aldehyde
AF-16	Beta-BHC, Endosulfan I, Endrin aldehyde
AF-15	Beta-BHC, Gamma-BHC (lindane), Endosulfan I, 4,4'-DDE, 4,4'-DDD, Endrin aldehyde
AF-14	Gamma-BHC (lindane), Aldrin, Endosulfan I, Endrin aldehyde, Isodrin
AF-12	Endosulfan I, Endrin aldehyde

SAMPLE	AFFECTED COMPOUNDS
AC-5	Beta-BHC, Heptachlor epoxide, Dieldrin, Endrin, Endosulfan sulfate, 4,4'-DDT, Endrin aldehyde
AC-2	Heptachlor, Endosulfan I, 4,4'-DDE, Endosulfan sulfate, Endrin aldehyde
AC-9	Heptachlor epoxide, Endosulfan I, Dieldrin, 4,4'-DDE, Endosulfan sulfate, 4,4'-DDT, Endrin aldehyde
AC-30	Beta-BHC, Endosulfan I, 4,4'-DDE, Endosulfan sulfate, Endrin aldehyde
AC-4	Beta-BHC, Heptachlor, Aldrin, Endosulfan I, 4,4'-DDT, Methoxychlor, Endrin aldehyde
AC-1	Aldrin, Endosulfan I, 4,4'-DDE, Endosulfan II, Endrin aldehyde
AC-6	Aldrin, Endosulfan I
AC-8	Heptachlor, Endosulfan I, Endrin aldehyde

Due to coelution matrix interference on one of the GC columns, confirmation of Endosulfan sulfate in sample AC-1 was not feasible. Thus, the Endosulfan sulfate concentration reported for this sample is based on a single column. The laboratory qualifier "X" was removed and the estimated "J" was left to indicate estimated concentrations.

Due to coeluting matrix interference on one of the GC columns, confirmation of Chlorobenzilate in samples AC-5, AC-2, AC-9, AC-1, and AC-6 was not feasible. Thus, the Chlorobenzilate concentrations reported for these samples are based on a single column. The laboratory qualifier "X" was removed and the estimated "J" was left to indicate an estimated concentration.

Due to coeluting matrix interference on one of the GC columns, confirmation of Heptachlor in AF-23 and AF-14 was not feasible. Thus, the Heptachlor concentrations reported for these samples are based on a single column. The laboratory qualifier "X" was removed and it was estimated "J" to indicate an estimated concentration.

Continuing Calibration Verifications (CCV) %D exceeded 25% for Chlorobenzilate, ,4,4'-DDT, Endrin aldehyde, Methoxychlor, Endosulfan sulfate, Gamma-BHC (lindane), Heptachlor, Aldrin, Heptachlor epoxide, Endosulfan I, Dieldrin, and Endosulfan II. However, no actions were taken for CCV %D.

High %Ds were reported for Endrin in some samples, however no action was taken to qualify since this data was previously qualified for laboratory control blank contamination.

No other problems were noted.

Executive Summary

Laboratory Performance: Some pesticide/PCB compounds reported %Ds between positive results in columns 1 and 2 above the quality control limit of 25%, but not over 100%. Some pesticide/PCB compounds reported %Ds above 100%. Due to coeluting matrix interference on one of the GC columns, confirmation of multiple compounds was not feasible for some samples. Thus, the concentrations reported for these samples are based on a single column.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program" (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Teresa M Hudson

Brown and Root Environmental
Teresa M. Hudson
Environmental Scientist/Data Validator

E. A. Lindsay for

Brown and Root Environmental
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

NAS KEY WEST
SDG BR004
TABLE 1 - RECOMMENDATION SUMMARY

Sample Number	PEST/PCB
AC-27	J[1, 2, 3, 4, 5, 6, 7, 8, 9,39]
AF-25	J[6, 7, 8, 10, 11, 12, 13,39]
AF-11	J[4, 6, 7, 8, 10, 14, 15, 16, 17, 18, 19, 20,39]
AF-18	J[7, 8, 15, 17, 18, 20, 21, 22, 23,39]
AF-17	J[3, 7, 8, 14, 15, 17, 18, 19, 20, 22, 24, 25, 26,39]
AF-24	J[6, 8, 11, 12, 14, 16, 18, 21, 23,39]
AF-23	J[10, 11, 16, 18, 27, 28,39]
AF-13	J[4, 11, 16, 18, 29,39]
AF-16	J[15, 18, 21,39]
AF-15	J[6, 15, 16, 18, 21, 28, 29, 30,39]
AF-14	J[10, 11, 15, 18, 19, 20, 25, 27, 29,39]
AF-12	J[10, 15, 18, 31, 32,39]
AC-5	J[2, 3, 4, 7, 8, 18, 21, 24, 31, 33, 34,39]
AC-2	J[7, 15, 16, 18, 34, 35, 36,39]
AC-9	J[1, 2, 3, 7, 8, 15, 16, 18, 34,39]
AC-30	J[7, 15, 16, 18, 21,39]
AC-4	J[8, 11, 15, 17, 18, 21, 24, 26, 35, 37,39]
AC-1	J[4, 5, 11, 14, 15, 16, 18, 22, 26, 30, 34, 38,39]
AC-6	J[11, 15, 24, 25, 30, 34,39]
AC-8	J[15, 18, 30, 35,39]

If the field is left blank, the qualifier is A - Accept all data.

J^1 Removed the laboratory qualifier (P) for aldrin, used to indicate a high %D. No further action was taken.

J^2 Removed the laboratory qualifier (P) for heptachlor epoxide and estimated (J), as result of %D above 100.

J^3 Removed the laboratory qualifier (P) for dieldrin and estimated (J), as result of %D above 100.

J^4 Removed laboratory qualifier (P) for endrin and estimated (J), as result of %D above 100.

J^5 Removed laboratory qualifier (P) for endosulfan II and estimated (J), as result of %D above 100.

J^6 Removed the laboratory qualifier (P) for 4,4'-DDD and estimated (J), as result of %D above 100.

J^7 Removed laboratory qualifier (P) for endosulfan sulfate and estimated (J), as result of %D above 100.

J^8 Removed the laboratory qualifier (P) for 4,4'-DDT and estimated (J), as result of %D above 100.

J^9 Removed laboratory qualifier (P) for chlorobenzilate and estimated (J), as result of %D above 100%.

J^{10} Removed the laboratory qualifier (P) for beta-BHC, used to indicate a high %D. No further action was taken.

J^{11} Removed laboratory qualifier (P) for aldrin and estimated (J), as result of %D above 100%.

J^{12} Removed the laboratory qualifier (P) for dieldrin, used to indicate a high %D. No further action was taken.
J^{13} Removed the laboratory qualifier (P) for endrin aldehyde, used to indicate a high %D. No further action was taken.

J^{14} Removed the laboratory qualifier (P) for heptachlor, used to indicate a high %D. No further action was taken.

J^{15} Removed the laboratory qualifier (P) for endosulfan I and estimated (J), as result of %D above 100%.

J^{16} Removed the laboratory qualifier (P) for 4,4'-DDE and estimated (J), as result of %D above 100%.

J^{17} Removed the laboratory qualifier (P) for methoxychlor and estimated (J), as result of %D above 100%.

J^{18} Removed the laboratory qualifier (P) for endrin aldehyde and estimated (J), as result of %D above 100%.

J^{19} Removed the laboratory qualifier (P) for chlorobenzilate, used to indicate a high %D. No further action was taken.

J^{20} Removed the laboratory qualifier (P) for isodrin and estimated (J), as result of %D above 100%.

J^{21} Removed the laboratory qualifier (P) for beta-BHC and estimated (J), as result of %D above 100%.

J^{22} Removed the laboratory qualifier (P) for heptachlor epoxide , used to indicate a high %D. No further action was taken.

J^{23} Removed the laboratory qualifier (P) for endosulfan II , used to indicate a high %D. No further action was taken.

J^{24} Removed the laboratory qualifier (P) for 4,4'-DDE, used to indicate a high %D. No further action was taken.

J^{25} Removed the laboratory qualifier (P) for endrin , used to indicate a high %D. No further action was taken.

J^{26} Removed the laboratory qualifier (P) for 4,4'-DDD , used to indicate a high %D. No further action was taken.

J^{27} Removed the laboratory qualifier (X) which indicates that the results for heptachlor are based on one column. Qualified as estimate (J).

J^{28} Removed the laboratory qualifier (P) for isodrin, used to indicate a high %D. No further action was taken.

J^{29} Removed the laboratory qualifier (P) for gamma-BHC (lindane) and estimated (J), as result of %D above 100%.

J^{30} Removed the laboratory qualifier (P) for 4,4'-DDT, used to indicate a high %D. No further action was taken.

J^{31} Removed the laboratory qualifier (P) for alpha-BHC, used to indicate a high %D. No further action was taken.

J^{32} Removed the laboratory qualifier (P) for delta-BHC, used to indicate a high %D. No further action was taken.

J^{33} Removed the laboratory qualifier (P) for endosulfan I, used to indicate a high %D. No further action was taken.

J^{34} Removed the laboratory qualifier (X) which indicates that the results for chlorobenzilate are based on one column. Qualified as estimate (J).

J^{35} Removed the laboratory qualifier (P) for heptachlor and estimated (J), as result of %D above 100%.

J^{36} Removed the laboratory qualifier (P) for methoxychlor, used to indicate a high %D. No further action was taken.

J^{37} Removed the laboratory qualifier (P) for endosulfan sulfate, used to indicate a high %D. No further action was taken.

J^{38} Removed the laboratory qualifier (X) which indicates that the results for endosulfan sulfate are based on one column. Qualified as estimate (J).

J^{39} Positive results below the CRQL were estimated (J).

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR004

PESTICIDES/PCBs

Sample Number: AC-1
Sample Date: 8/22/96
Laboratory ID: S685150C-18
QC Type: CS
% Moisture: 0
Location: AC-1

	RESULT	QUAL	UNITS
4,4'-DDD	2.7	J	ug/kg
4,4'-DDE	1.3	J	ug/kg
4,4'-DDT	2.8	J	ug/kg
Aldrin	0.22	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	92	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.8	J	ug/kg
Endosulfan II	0.9	J	ug/kg
Endosulfan sulfate	3	J	ug/kg
Endrin	2.7	J	ug/kg
Endrin aldehyde	4.6	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.29	J	ug/kg
Heptachlor epoxide	5.4		ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: AC-2
Sample Date: 8/22/96
Laboratory ID: S685150C-14
QC Type: CS
% Moisture: 0
Location: AC-2

	RESULT	QUAL	UNITS
4,4'-DDD	6.6	U	ug/kg
4,4'-DDE	1.7	J	ug/kg
4,4'-DDT	4.9	J	ug/kg
Aldrin	3.4	U	ug/kg
alpha-BHC	3.4	U	ug/kg
Aroclor-1016	66	U	ug/kg
Aroclor-1221	130	U	ug/kg
Aroclor-1232	66	U	ug/kg
Aroclor-1242	66	U	ug/kg
Aroclor-1248	66	U	ug/kg
Aroclor-1254	66	U	ug/kg
Aroclor-1260	66	U	ug/kg
beta-BHC	3.4	U	ug/kg
Chlordane	34	U	ug/kg
Chlorobenzilate	140	J	ug/kg
delta-BHC	3.4	U	ug/kg
Dieldrin	6.6	U	ug/kg
Endosulfan I	1.8	J	ug/kg
Endosulfan II	6.6	U	ug/kg
Endosulfan sulfate	1	J	ug/kg
Endrin	6.6	U	ug/kg
Endrin aldehyde	5.7	J	ug/kg
gamma-BHC	3.4	U	ug/kg
Heptachlor	0.57	J	ug/kg
Heptachlor epoxide	4.5		ug/kg
Isodrin	6.6	U	ug/kg
Methoxychlor	5.8	J	ug/kg
Toxaphene	340	U	ug/kg

Sample Number: AC-27
Sample Date: 8/25/96
Laboratory ID: S685150C-1
QC Type: CS
% Moisture: 0
Location: AC-27

	RESULT	QUAL	UN
4,4'-DDD	0.36	J	ug
4,4'-DDE	4.3	U	ug/
4,4'-DDT	0.52	J	ug/
Aldrin	0.19	J	ug/
alpha-BHC	2.2	U	ug/
Aroclor-1016	43	U	ug/
Aroclor-1221	87	U	ug/
Aroclor-1232	43	U	ug/
Aroclor-1242	43	U	ug/
Aroclor-1248	43	U	ug/
Aroclor-1254	43	U	ug/
Aroclor-1260	43	U	ug/
beta-BHC	2.2	U	ug/
Chlordane	22	U	ug/
Chlorobenzilate	6.6	J	ug/
delta-BHC	2.2	U	ug/
Dieldrin	0.77	J	ug/
Endosulfan I	2.2	U	ug/
Endosulfan II	0.3	J	ug/
Endosulfan sulfate	2.2	J	ug/
Endrin	0.29	J	ug/
Endrin aldehyde	4.3	U	ug/
gamma-BHC	2.2	U	ug/
Heptachlor	2.2	U	ug/
Heptachlor epoxide	0.51	J	ug/
Isodrin	4.3	U	ug/
Methoxychlor	22	U	ug/
Toxaphene	220	U	ug/

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PESTICIDES/PCBs

Sample Number: AC-30
Sample Date: 8/26/96
Laboratory ID: S685150C-16
QC Type: CS
% Moisture: 0
Location: AC-30

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	0.69	J	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	0.51	J	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	0.38	J	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	0.55	J	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	4.9	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: AC-4
Sample Date: 8/22/96
Laboratory ID: S685150C-17
QC Type: CS
% Moisture: 0
Location: AC-4

	RESULT	QUAL	UNITS
4,4'-DDD	1.1	J	ug/kg
4,4'-DDE	1.4	J	ug/kg
4,4'-DDT	1.3	J	ug/kg
Aldrin	0.27	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	0.47	J	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	0.81	J	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	1.4	J	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.36	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	2.3	J	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: AC-5
Sample Date: 8/23/96
Laboratory ID: S685150C-13
QC Type: CS
% Moisture: 0
Location: AC-5

	RESULT	QUAL	UNIT
4,4'-DDD	3.3	U	ug/k
4,4'-DDE	3.7		ug/k
4,4'-DDT	1.7	J	ug/k
Aldrin	1.7	U	ug/k
alpha-BHC	0.75	J	ug/k
Aroclor-1016	33	U	ug/k
Aroclor-1221	67	U	ug/k
Aroclor-1232	33	U	ug/k
Aroclor-1242	33	U	ug/k
Aroclor-1248	33	U	ug/k
Aroclor-1254	33	U	ug/k
Aroclor-1260	33	U	ug/k
beta-BHC	0.56	J	ug/k
Chlordane	17	U	ug/k
Chlorobenzilate	48	J	ug/k
delta-BHC	1.7	U	ug/k
Dieldrin	4.6	J	ug/k
Endosulfan I	1.3	J	ug/k
Endosulfan II	3.3	U	ug/k
Endosulfan sulfate	1.9	J	ug/k
Endrin	0.43	J	ug/k
Endrin aldehyde	2.2	J	ug/k
gamma-BHC	1.7	U	ug/k
Heptachlor	1.7	U	ug/k
Heptachlor epoxide	2.3	J	ug/k
Isodrin	3.3	U	ug/k
Methoxychlor	17	U	ug/k
Toxaphene	170	U	ug/k

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Sample Number: AC-6
Sample Date: 8/23/96
Laboratory ID: S685150C-19
QC Type: CS
% Moisture: 0
Location: AC-6

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	1.4	J	ug/kg
4,4'-DDT	0.74	J	ug/kg
Aldrin	0.24	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	24	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	0.71	J	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.71	J	ug/kg
Endrin aldehyde	4.5		ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: AC-8
Sample Date: 8/23/96
Laboratory ID: S685150C-20
QC Type: CS
% Moisture: 0
Location: AC-8

	RESULT	QUAL	UNITS
4,4'-DDD	5.2	U	ug/kg
4,4'-DDE	4.6	J	ug/kg
4,4'-DDT	1.7	J	ug/kg
Aldrin	2.7	U	ug/kg
alpha-BHC	2.7	U	ug/kg
Aroclor-1016	52	U	ug/kg
Aroclor-1221	100	U	ug/kg
Aroclor-1232	52	U	ug/kg
Aroclor-1242	52	U	ug/kg
Aroclor-1248	52	U	ug/kg
Aroclor-1254	52	U	ug/kg
Aroclor-1260	52	U	ug/kg
beta-BHC	2.7	U	ug/kg
Chlordane	27	U	ug/kg
Chlorobenzilate	27	U	ug/kg
delta-BHC	2.7	U	ug/kg
Dieldrin	5.2	U	ug/kg
Endosulfan I	0.5	J	ug/kg
Endosulfan II	5.2	U	ug/kg
Endosulfan sulfate	5.2	U	ug/kg
Endrin	5.2	U	ug/kg
Endrin aldehyde	3.1	J	ug/kg
gamma-BHC	2.7	U	ug/kg
Heptachlor	0.68	J	ug/kg
Heptachlor epoxide	2.7	U	ug/kg
Isodrin	5.2	U	ug/kg
Methoxychlor	10	J	ug/kg
Toxaphene	270	U	ug/kg

Sample Number: AC-9
Sample Date: 8/23/96
Laboratory ID: S685150C-15
QC Type: CS
% Moisture: 0
Location: AC-9

	RESULT	QUAL	UNI
4,4'-DDD	3.3	U	ug/
4,4'-DDE	1.4	J	ug/
4,4'-DDT	1.2	J	ug/
Aldrin	0.22	J	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	33	U	ug/
beta-BHC	1.7	U	ug/
Chlordane	17	U	ug/
Chlorobenzilate	24	J	ug/
delta-BHC	1.7	U	ug/
Dieldrin	2.9	J	ug/
Endosulfan I	0.8	J	ug/
Endosulfan II	3.3	U	ug/
Endosulfan sulfate	1.3	J	ug/
Endrin	3.3	U	ug/
Endrin aldehyde	2.6	J	ug/
gamma-BHC	1.7	U	ug/
Heptachlor	1.7	U	ug/
Heptachlor epoxide	2.3	J	ug/
Isodrin	3.3	U	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/

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Sample Number: AF-11
Sample Date: 8/24/96
Laboratory ID: S685150C-3
QC Type: CS
% Moisture: 0
Location: AF-11

	RESULT	QUAL	UNITS
4,4'-DDD	0.99	J	ug/kg
4,4'-DDE	0.71	J	ug/kg
4,4'-DDT	0.99	J	ug/kg
Aldrin	2.8	U	ug/kg
alpha-BHC	2.8	U	ug/kg
Aroclor-1016	55	U	ug/kg
Aroclor-1221	110	U	ug/kg
Aroclor-1232	55	U	ug/kg
Aroclor-1242	55	U	ug/kg
Aroclor-1248	55	U	ug/kg
Aroclor-1254	55	U	ug/kg
Aroclor-1260	55	U	ug/kg
beta-BHC	3.1		ug/kg
Chlordane	28	U	ug/kg
Chlorobenzilate	53		ug/kg
delta-BHC	2.8	U	ug/kg
Dieldrin	3.8	J	ug/kg
Endosulfan I	0.3	J	ug/kg
Endosulfan II	0.67	J	ug/kg
Endosulfan sulfate	1.1	J	ug/kg
Endrin	0.95	J	ug/kg
Endrin aldehyde	1.3	J	ug/kg
gamma-BHC	2.8	U	ug/kg
Heptachlor	1.5	J	ug/kg
Heptachlor epoxide	2.8	U	ug/kg
Isodrin	0.55	J	ug/kg
Methoxychlor	1.4	J	ug/kg
Toxaphene	280	U	ug/kg

Sample Number: AF-12
Sample Date: 8/24/96
Laboratory ID: S685150C-12
QC Type: CS
% Moisture: 0
Location: AF-12

	RESULT	QUAL	UNITS
4,4'-DDD	4.7	U	ug/kg
4,4'-DDE	4.7	U	ug/kg
4,4'-DDT	4.7	U	ug/kg
Aldrin	2.4	U	ug/kg
alpha-BHC	0.87	J	ug/kg
Aroclor-1016	47	U	ug/kg
Aroclor-1221	96	U	ug/kg
Aroclor-1232	47	U	ug/kg
Aroclor-1242	47	U	ug/kg
Aroclor-1248	47	U	ug/kg
Aroclor-1254	47	U	ug/kg
Aroclor-1260	47	U	ug/kg
beta-BHC	2.9		ug/kg
Chlordane	24	U	ug/kg
Chlorobenzilate	36		ug/kg
delta-BHC	0.84	J	ug/kg
Dieldrin	4.7	U	ug/kg
Endosulfan I	0.41	J	ug/kg
Endosulfan II	4.7	U	ug/kg
Endosulfan sulfate	4.7	U	ug/kg
Endrin	4.7	U	ug/kg
Endrin aldehyde	2	J	ug/kg
gamma-BHC	2.4	U	ug/kg
Heptachlor	2.4	U	ug/kg
Heptachlor epoxide	2.4	U	ug/kg
Isodrin	1.4	J	ug/kg
Methoxychlor	24	U	ug/kg
Toxaphene	240	U	ug/kg

Sample Number: AF-13
Sample Date: 8/24/96
Laboratory ID: S685150C-8
QC Type: CS
% Moisture: 0
Location: AF-13

	RESULT	QUAL	UNI
4,4'-DDD	3.8	U	ug/
4,4'-DDE	1	J	ug/
4,4'-DDT	3.8	U	ug/
Aldrin	0.77	J	ug/
alpha-BHC	0.8	J	ug/
Aroclor-1016	38	U	ug/
Aroclor-1221	77	U	ug/
Aroclor-1232	38	U	ug/
Aroclor-1242	38	U	ug/
Aroclor-1248	38	U	ug/
Aroclor-1254	38	U	ug/
Aroclor-1260	38	U	ug/
beta-BHC	2	U	ug/
Chlordane	20	U	ug/
Chlorobenzilate	20	U	ug/
delta-BHC	2	U	ug/
Dieldrin	0.38	J	ug/
Endosulfan I	2	U	ug/
Endosulfan II	3.8	U	ug/
Endosulfan sulfate	3.8	U	ug/
Endrin	3.8	U	ug/
Endrin aldehyde	1.3	J	ug/
gamma-BHC	0.21	J	ug/
Heptachlor	2	U	ug/
Heptachlor epoxide	2	U	ug/
Isodrin	3.8	U	ug/
Methoxychlor	20	U	ug/
Toxaphene	200	U	ug/

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Sample Number: AF-14
Sample Date: 8/24/96
Laboratory ID: S685150C-11
QC Type: CS
% Moisture: 0
Location: AF-14

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	0.69	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	2.2		ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	27		ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	0.15	J	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.27	J	ug/kg
Endrin aldehyde	1.1	J	ug/kg
gamma-BHC	0.47	J	ug/kg
Heptachlor	1.2	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	0.67	J	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: AF-15
Sample Date: 8/24/96
Laboratory ID: S685150C-10
QC Type: CS
% Moisture: 0
Location: AF-15

	RESULT	QUAL	UNITS
4,4'-DDD	0.26	J	ug/kg
4,4'-DDE	0.69	J	ug/kg
4,4'-DDT	1.4	J	ug/kg
Aldrin	2.6	U	ug/kg
alpha-BHC	2.6	U	ug/kg
Aroclor-1016	50	U	ug/kg
Aroclor-1221	100	U	ug/kg
Aroclor-1232	50	U	ug/kg
Aroclor-1242	50	U	ug/kg
Aroclor-1248	50	U	ug/kg
Aroclor-1254	50	U	ug/kg
Aroclor-1260	50	U	ug/kg
beta-BHC	1.8	J	ug/kg
Chlordane	26	U	ug/kg
Chlorobenzilate	26	U	ug/kg
delta-BHC	2.6	U	ug/kg
Dieldrin	5	U	ug/kg
Endosulfan I	0.17	J	ug/kg
Endosulfan II	5	U	ug/kg
Endosulfan sulfate	5	U	ug/kg
Endrin	5	U	ug/kg
Endrin aldehyde	1.5	J	ug/kg
gamma-BHC	0.5	J	ug/kg
Heptachlor	2.6	U	ug/kg
Heptachlor epoxide	2.6	U	ug/kg
Isodrin	0.95	J	ug/kg
Methoxychlor	26	U	ug/kg
Toxaphene	260	U	ug/kg

Sample Number: AF-16
Sample Date: 8/24/96
Laboratory ID: S685150C-9
QC Type: CS
% Moisture: 0
Location: AF-16

	RESULT	QUAL	UNI
4,4'-DDD	4.7	U	ug/
4,4'-DDE	4.7	U	ug/
4,4'-DDT	4.7	U	ug/
Aldrin	2.4	U	ug/
alpha-BHC	2.4	U	ug/
Aroclor-1016	47	U	ug/
Aroclor-1221	96	U	ug/
Aroclor-1232	47	U	ug/
Aroclor-1242	47	U	ug/
Aroclor-1248	47	U	ug/
Aroclor-1254	47	U	ug/
Aroclor-1260	47	U	ug/
beta-BHC	1.1	J	ug/
Chlordane	24	U	ug/
Chlorobenzilate	15	J	ug/
delta-BHC	2.4	U	ug/
Dieldrin	4.7	U	ug/
Endosulfan I	0.22	J	ug/
Endosulfan II	4.7	U	ug/
Endosulfan sulfate	4.7	U	ug/
Endrin	4.7	U	ug/
Endrin aldehyde	2.3	J	ug/
gamma-BHC	2.4	U	ug/
Heptachlor	2.4	U	ug/
Heptachlor epoxide	2.4	U	ug/
Isodrin	0.77	J	ug/
Methoxychlor	24	U	ug/
Toxaphene	240	U	ug/

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Sample Number: AF-17
Sample Date: 8/24/96
Laboratory ID: S685150C-5
QC Type: CS
% Moisture: 0
Location: AF-17

	RESULT	QUAL	UNITS
4,4'-DDD	1.9	J	ug/kg
4,4'-DDE	2.1	J	ug/kg
4,4'-DDT	3.2	J	ug/kg
Aldrin	2.2	U	ug/kg
alpha-BHC	2.2	U	ug/kg
Aroclor-1016	43	U	ug/kg
Aroclor-1221	87	U	ug/kg
Aroclor-1232	43	U	ug/kg
Aroclor-1242	43	U	ug/kg
Aroclor-1248	43	U	ug/kg
Aroclor-1254	43	U	ug/kg
Aroclor-1260	43	U	ug/kg
beta-BHC	1.8	J	ug/kg
Chlordane	22	U	ug/kg
Chlorobenzilate	39		ug/kg
delta-BHC	2.2	U	ug/kg
Dieldrin	1.6	J	ug/kg
Endosulfan I	0.74	J	ug/kg
Endosulfan II	4.3	U	ug/kg
Endosulfan sulfate	2.4	J	ug/kg
Endrin	1.7	J	ug/kg
Endrin aldehyde	18	J	ug/kg
gamma-BHC	2.2	U	ug/kg
Heptachlor	0.95	J	ug/kg
Heptachlor epoxide	2.2	J	ug/kg
Isodrin	0.48	J	ug/kg
Methoxychlor	3.1	J	ug/kg
Toxaphene	220	U	ug/kg

Sample Number: AF-18
Sample Date: 8/24/96
Laboratory ID: S685150C-4
QC Type: CS
% Moisture: 0
Location: AF-18

	RESULT	QUAL	UNITS
4,4'-DDD	4	J	ug/kg
4,4'-DDE	2.1	J	ug/kg
4,4'-DDT	1.8	J	ug/kg
Aldrin	2.3	U	ug/kg
alpha-BHC	2.3	U	ug/kg
Aroclor-1016	45	U	ug/kg
Aroclor-1221	91	U	ug/kg
Aroclor-1232	45	U	ug/kg
Aroclor-1242	45	U	ug/kg
Aroclor-1248	45	U	ug/kg
Aroclor-1254	45	U	ug/kg
Aroclor-1260	45	U	ug/kg
beta-BHC	1.8	J	ug/kg
Chlordane	23	U	ug/kg
Chlorobenzilate	44		ug/kg
delta-BHC	2.3	U	ug/kg
Dieldrin	4.5	U	ug/kg
Endosulfan I	0.75	J	ug/kg
Endosulfan II	0.59	J	ug/kg
Endosulfan sulfate	1.9	J	ug/kg
Endrin	1.3	J	ug/kg
Endrin aldehyde	3.9	J	ug/kg
gamma-BHC	2.3	U	ug/kg
Heptachlor	2.3	U	ug/kg
Heptachlor epoxide	3.4		ug/kg
Isodrin	1.4	J	ug/kg
Methoxychlor	1.3	J	ug/kg
Toxaphene	230	U	ug/kg

Sample Number: AF-23
Sample Date: 8/25/96
Laboratory ID: S685150C-7
QC Type: CS
% Moisture: 0
Location: AF-23

	RESULT	QUAL	UNIT
4,4'-DDD	4.1	U	ug/k
4,4'-DDE	0.46	J	ug/k
4,4'-DDT	4.1	U	ug/k
Aldrin	0.59	J	ug/k
alpha-BHC	0.7	J	ug/k
Aroclor-1016	41	U	ug/k
Aroclor-1221	84	U	ug/k
Aroclor-1232	41	U	ug/k
Aroclor-1242	41	U	ug/kg
Aroclor-1248	41	U	ug/kg
Aroclor-1254	41	U	ug/kg
Aroclor-1260	41	U	ug/k
beta-BHC	2.1	J	ug/k
Chlordane	21	U	ug/kg
Chlorobenzilate	21	U	ug/kg
delta-BHC	2.1	U	ug/kg
Dieldrin	1.9	J	ug/kg
Endosulfan I	2.1	U	ug/kg
Endosulfan II	4.1	U	ug/kg
Endosulfan sulfate	4.1	U	ug/kg
Endrin	4.1	U	ug/kg
Endrin aldehyde	1.3	J	ug/kg
gamma-BHC	0.46	J	ug/kg
Heptachlor	2.4	J	ug/kg
Heptachlor epoxide	2.1	U	ug/kg
Isodrin	1	J	ug/kg
Methoxychlor	21	U	ug/kg
Toxaphene	210	U	ug/kg

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CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR004

PESTICIDES/PCBs

Sample Number: AF-24
Sample Date: 8/25/96
Laboratory ID: S685150C-6
QC Type: CS
% Moisture: 0
Location: AF-24

	RESULT	QUAL	UNITS
4,4'-DDD	0.49	J	ug/kg
4,4'-DDE	1.3	J	ug/kg
4,4'-DDT	6.5	J	ug/kg
Aldrin	0.22	J	ug/kg
alpha-BHC	2.6	U	ug/kg
Aroclor-1016	50	U	ug/kg
Aroclor-1221	100	U	ug/kg
Aroclor-1232	50	U	ug/kg
Aroclor-1242	50	U	ug/kg
Aroclor-1248	50	U	ug/kg
Aroclor-1254	50	U	ug/kg
Aroclor-1260	50	U	ug/kg
beta-BHC	2.1	J	ug/kg
Chlordane	26	U	ug/kg
Chlorobenzilate	26	U	ug/kg
delta-BHC	2.6	U	ug/kg
Dieldrin	2.3	J	ug/kg
Endosulfan I	2.6	U	ug/kg
Endosulfan II	0.36	J	ug/kg
Endosulfan sulfate	5	U	ug/kg
Endrin	5	U	ug/kg
Endrin aldehyde	9.3	J	ug/kg
gamma-BHC	2.6	U	ug/kg
Heptachlor	1.7	J	ug/kg
Heptachlor epoxide	2.6	U	ug/kg
Isodrin	1.4	J	ug/kg
Methoxychlor	26	U	ug/kg
Toxaphene	260	U	ug/kg

Sample Number: AF-25
Sample Date: 8/25/96
Laboratory ID: S685150C-2
QC Type: CS
% Moisture: 0
Location: AF-25

	RESULT	QUAL	UNITS
4,4'-DDD	0.84	J	ug/kg
4,4'-DDE	0.94	J	ug/kg
4,4'-DDT	1.3	J	ug/kg
Aldrin	0.37	J	ug/kg
alpha-BHC	2.6	U	ug/kg
Aroclor-1016	50	U	ug/kg
Aroclor-1221	100	U	ug/kg
Aroclor-1232	50	U	ug/kg
Aroclor-1242	50	U	ug/kg
Aroclor-1248	50	U	ug/kg
Aroclor-1254	50	U	ug/kg
Aroclor-1260	50	U	ug/kg
beta-BHC	3.2		ug/kg
Chlordane	26	U	ug/kg
Chlorobenzilate	65		ug/kg
delta-BHC	2.6	U	ug/kg
Dieldrin	3	J	ug/kg
Endosulfan I	2.6	U	ug/kg
Endosulfan II	0.7	J	ug/kg
Endosulfan sulfate	1.4	J	ug/kg
Endrin	5	U	ug/kg
Endrin aldehyde	1.4	J	ug/kg
gamma-BHC	2.6	U	ug/kg
Heptachlor	2.6	U	ug/kg
Heptachlor epoxide	2.6	U	ug/kg
Isodrin	1.3	J	ug/kg
Methoxychlor	26	U	ug/kg
Toxaphene	260	U	ug/kg

INORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 7, 1997**
FROM:	**TERESA M. HUDSON**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA REVIEW – TAL METALS**
CTO 007 – KEY WEST, FLORIDA
SDG – BR005

SAMPLES: 20/TISSUE/

150D01	150D06	150D11	150D16
150D02	150D07	150D12	150D17
150D03	150D08	150D13	150D18
150D04	150D09	150D14	150D19
150D05	150D10	150D15	150D20

Introduction

A data review was performed on the inorganic analytical data from CTO 007, NAS Key West, SDG No.BR005. Twenty (20) tissue samples were included for TAL metals. No field duplicates were included within this SDG.

All samples were analyzed for Target Analyte List (TAL) metals. The samples were collected by Brown & Root Environmental on August 29, 1996 and analyzed by Savannah Laboratories and Environmental Services, Inc. under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- Calibration Verifications
- * Laboratory Blank Analyses
- Matrix Spike Results

* Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/ preparation/ field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level (soil)
aluminum	22.1 ug/L	22.1 MG/KG
arsenic	3.5 ug/L	3.5 MG/KG
barium	1.6 ug/L	1.6 MG/KG
calcium[1]	2.765 MG/KG	13.825 MG/KG
cobalt	2.9 ug/L	2.9 MG/KG
copper	7.6 ug/L	7.6 MG/KG
iron	26.2 ug/L	26.2 MG/KG
magnesium	23.6 ug/L	23.6 MG/KG
mercury[1]	0.019 MG/KG	0.095 MG/KG
nickel	4.5 ug/L	4.5 MG/KG
silver	1.2 ug/L	1.2 MG/KG
sodium	51.3 ug/L	51.3 MG/KG
zinc	2.4 ug/L	2.4 MG/KG

Samples affected: All, except 150D10 and 150D20

[1] Maximum concentration found in a soil preparation blank.

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for aluminum, barium, cobalt, copper, iron, mercury, nickel, and silver have been qualified as nondetected "U". No action was taken for the remaining analytes since the results were greater than the action level.

Notes

It was noted that 150D11 was not on the Chain of Custody.

It was noted that all samples met the contract holding time limit criteria of six (6) months.

It was noted that selenium percent recovery (%R) exceeded the quality control limit for AA CRDL standards. However, no validation actions were taken.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method blank.

Other Factors Affecting Data Quality: None.

No other problems were encountered in this case.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review," February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Teresa M Hudson

Brown & Root Environmental
Teresa M. Hudson
Environmental Scientist/Data Validator

Julia F Bradley for

Brown & Root Environmental
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

KEY WEST
SDG – BR005

TABLE 1 – RECOMMENDATION SUMMARY

Aluminum	A[1]	Magnesium	
Antimony		Manganese	
Arsenic		Mercury	A[1]
Barium	A[1]	Nickel	A[1]
Beryllium		Potassium	
Cadmium		Selenium	
Calcium		Silver	A[1]
Chromium		Sodium	
Cobalt	A[1]	Thallium	
Copper	A[1]	Vanadium	
Iron	A[1]	Zinc	
Lead			

If the field is left blank, the qualifier is A - Accept all data.

A[1] Accept data but qualify positive results < Action Level as nondetected, "U", as a result of laboratory blank contamination.

APPENDIX A
Qualified Analytical Results

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR005

INORGANICS

Sample Number: AC-3
Sample Date: 8/29/96
Laboratory ID: S685150D-3
QC Type: CS
% Moisture: 0
Location: AC-3

	RESULT	QUAL	UNITS
Aluminum	3.9	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	3.6		mg/kg
Barium	1.6		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	22400		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	19.5		mg/kg
Iron	6.7	U	mg/kg
Lead	1.7		mg/kg
Magnesium	1600		mg/kg
Manganese	4.9		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2080		mg/kg
Selenium	1	U	mg/kg
Silver	0.26	U	mg/kg
Sodium	5740		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	38.7		mg/kg

Sample Number: AF-29
Sample Date: 8/29/96
Laboratory ID: S685150D-1
QC Type: CS
% Moisture: 0
Location: AF-29

	RESULT	QUAL	UNITS
Aluminum	6.6	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	5.8		mg/kg
Barium	0.47	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	35100		mg/kg
Chromium	1.2	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	1.5	U	mg/kg
Iron	13.8	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	838		mg/kg
Manganese	4.9		mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	3110		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	1870		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	30		mg/kg

Sample Number: AF-7
Sample Date: 8/23/96
Laboratory ID: S685150D-2
QC Type: CS
% Moisture: 0
Location: AF-7

	RESULT	QUAL	UNI
Aluminum	4.7	U	mg/
Antimony	2.4	U	mg/
Arsenic	6.5		mg/
Barium	0.2	U	mg/
Beryllium	0.04	U	mg/
Cadmium	0.53	U	mg/
Calcium	16600		mg/
Chromium	0.82	U	mg/
Cobalt	0.37	U	mg/
Copper	1.3	U	mg/
Iron	10.1	U	mg/
Lead	0.34	U	mg/
Magnesium	558		mg/
Manganese	1.9		mg/
Mercury	0.05	U	mg/
Nickel	0.85	U	mg/
Potassium	3400		mg/
Selenium	1	U	mg/
Silver	0.23	U	mg/
Sodium	1110		mg/
Thallium	0.81	U	mg/
Vanadium	0.45	U	mg/
Zinc	17.5		mg/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR005

INORGANICS

Sample Number: B4C-1
Sample Date: 8/29/96
Laboratory ID: S685150D-5
QC Type: CS
% Moisture: 0
Location: B4C-1

	RESULT	QUAL	UNITS
Aluminum	2	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	18		mg/kg
Barium	1.2	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	36500		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	16.5		mg/kg
Iron	23.5	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	3850		mg/kg
Manganese	1.5		mg/kg
Mercury	0.15		mg/kg
Nickel	0.85	U	mg/kg
Potassium	2060		mg/kg
Selenium	1	U	mg/kg
Silver	0.55	U	mg/kg
Sodium	5690		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.61		mg/kg
Zinc	47		mg/kg

Sample Number: B4C-2
Sample Date: 8/29/96
Laboratory ID: S685150D-4
QC Type: CS
% Moisture: 0
Location: B4C-2

	RESULT	QUAL	UNITS
Aluminum	2.2	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	28.2		mg/kg
Barium	0.24	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	5330		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	26.3		mg/kg
Iron	22.8	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	1040		mg/kg
Manganese	0.51		mg/kg
Mercury	0.17		mg/kg
Nickel	0.85	U	mg/kg
Potassium	2070		mg/kg
Selenium	1	U	mg/kg
Silver	0.6	U	mg/kg
Sodium	6040		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	58		mg/kg

Sample Number: B4C-3
Sample Date: 8/29/96
Laboratory ID: S685150D-14
QC Type: CS
% Moisture: 0
Location: B4C-3

	RESULT	QUAL	UNIT
Aluminum	3.9	U	mg/l
Antimony	2.4	U	mg/k
Arsenic	27.9		mg/k
Barium	0.7	U	mg/k
Beryllium	0.04	U	mg/k
Cadmium	0.53	U	mg/k
Calcium	20900		mg/k
Chromium	0.82	U	mg/k
Cobalt	0.37	U	mg/k
Copper	31.8		mg/k
Iron	20.8	U	mg/k
Lead	0.34	U	mg/k
Magnesium	2320		mg/k
Manganese	0.66		mg/k
Mercury	0.09		mg/k
Nickel	0.85	U	mg/k
Potassium	2150		mg/k
Selenium	1	U	mg/k
Silver	0.67	U	mg/k
Sodium	6410		mg/k
Thallium	0.81	U	mg/k
Vanadium	0.45	U	mg/k
Zinc	51.3		mg/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR005

INORGANICS

Sample Number: I7L-1
Sample Date: 8/29/96
Laboratory ID: S685150D-6
QC Type: CS
% Moisture: 0
Location: I7L-1

	RESULT	QUAL	UNITS
Aluminum	4.2	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	23		mg/kg
Barium	0.22	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	5490		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	27.4		mg/kg
Iron	5.9	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	982		mg/kg
Manganese	0.31		mg/kg
Mercury	0.07	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2610		mg/kg
Selenium	1	U	mg/kg
Silver	0.37	U	mg/kg
Sodium	4430		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	18.8		mg/kg

Sample Number: I7L-2
Sample Date: 8/29/96
Laboratory ID: S685150D-9
QC Type: CS
% Moisture: 0
Location: I7L-2

	RESULT	QUAL	UNITS
Aluminum	4	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	16.7		mg/kg
Barium	0.45	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.58		mg/kg
Calcium	10100		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	27.9		mg/kg
Iron	10.8	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	1470		mg/kg
Manganese	0.53		mg/kg
Mercury	0.08	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2710		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	4090		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	20.7		mg/kg

Sample Number: I8C-2
Sample Date: 8/29/96
Laboratory ID: S685150D-11
QC Type: CS
% Moisture: 0
Location: I8C-2

	RESULT	QUAL	UN
Aluminum	5.3	U	mg
Antimony	2.4	U	mg
Arsenic	4.1		mg
Barium	1.9	U	mg
Beryllium	0.04	U	mg
Cadmium	0.54		mg
Calcium	42300		mg
Chromium	5.1		mg
Cobalt	0.37	U	mg
Copper	7.1	U	mg
Iron	66.1		mg
Lead	0.53		mg
Magnesium	5360		mg
Manganese	1.6		mg
Mercury	0.01	U	mg
Nickel	0.85	U	mg
Potassium	1340		mg
Selenium	1	U	mg
Silver	0.23	U	mg
Sodium	8380		mg
Thallium	0.81	U	mg
Vanadium	0.93		mg
Zinc	10.5		mg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR005

INORGANICS

Sample Number: I8CH-11
Sample Date: 8/29/96
Laboratory ID: S685150D-17
QC Type: CS
% Moisture: 0
Location: I8CH-11

	RESULT	QUAL	UNITS
Aluminum	9.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	4.5		mg/kg
Barium	0.95	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	16300		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	72.1		mg/kg
Iron	109		mg/kg
Lead	1.5		mg/kg
Magnesium	1970		mg/kg
Manganese	25.2		mg/kg
Mercury	0.24		mg/kg
Nickel	3	U	mg/kg
Potassium	3400		mg/kg
Selenium	1	U	mg/kg
Silver	0.94	U	mg/kg
Sodium	4670		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	14.7		mg/kg
Zinc	21.8		mg/kg

Sample Number: I8CH-21
Sample Date: 8/29/96
Laboratory ID: S685150D-15
QC Type: CS
% Moisture: 0
Location: I8CH-21

	RESULT	QUAL	UNITS
Aluminum	9	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	9.3		mg/kg
Barium	1.3	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53		mg/kg
Calcium	6270		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.41	U	mg/kg
Copper	117		mg/kg
Iron	280		mg/kg
Lead	6.3		mg/kg
Magnesium	2750		mg/kg
Manganese	129		mg/kg
Mercury	0.14		mg/kg
Nickel	8.1		mg/kg
Potassium	3360		mg/kg
Selenium	1.2		mg/kg
Silver	2.7		mg/kg
Sodium	3420		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	61.4		mg/kg
Zinc	668		mg/kg

Sample Number: I8CH-7
Sample Date: 8/29/96
Laboratory ID: S685150D-13
QC Type: CS
% Moisture: 0
Location: I8CH-7

	RESULT	QUAL	UN
Aluminum	33.5		mg
Antimony	2.4	U	mg
Arsenic	4.5		mg
Barium	0.8	U	mg
Beryllium	0.04	U	mg
Cadmium	0.53	U	mg
Calcium	19300		mg
Chromium	0.82	U	mg
Cobalt	0.37	U	mg
Copper	47.7		mg
Iron	1420		mg
Lead	17		mg
Magnesium	2220		mg
Manganese	19.3		mg
Mercury	0.21		mg
Nickel	1.5	U	mg
Potassium	3360		mg
Selenium	1	U	mg
Silver	0.52	U	mg
Sodium	4320		mg
Thallium	0.81	U	mg
Vanadium	3		mg
Zinc	34.7		mg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR005

INORGANICS

Sample Number: I8CH-8
Sample Date: 8/29/96
Laboratory ID: S685150D-16
QC Type: CS
% Moisture: 0
Location: I8CH-8

	RESULT	QUAL	UNITS
Aluminum	152		mg/kg
Antimony	2.4	U	mg/kg
Arsenic	6.1		mg/kg
Barium	3.8		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	20100		mg/kg
Chromium	2		mg/kg
Cobalt	0.52	U	mg/kg
Copper	57.5		mg/kg
Iron	2820		mg/kg
Lead	31.2		mg/kg
Magnesium	3100		mg/kg
Manganese	41		mg/kg
Mercury	0.14		mg/kg
Nickel	3.6	U	mg/kg
Potassium	2820		mg/kg
Selenium	1	U	mg/kg
Silver	0.43	U	mg/kg
Sodium	5350		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	7.9		mg/kg
Zinc	86.2		mg/kg

Sample Number: I8CH-9
Sample Date: 8/29/96
Laboratory ID: S685150D-18
QC Type: CS
% Moisture: 0
Location: I8CH-9

	RESULT	QUAL	UNITS
Aluminum	102		mg/kg
Antimony	2.4	U	mg/kg
Arsenic	6.4		mg/kg
Barium	1.5	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	21000		mg/kg
Chromium	0.99		mg/kg
Cobalt	0.38	U	mg/kg
Copper	120		mg/kg
Iron	804		mg/kg
Lead	4.9		mg/kg
Magnesium	2890		mg/kg
Manganese	57.7		mg/kg
Mercury	0.16		mg/kg
Nickel	5.9		mg/kg
Potassium	3080		mg/kg
Selenium	1	U	mg/kg
Silver	1.8		mg/kg
Sodium	3800		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	20.7		mg/kg
Zinc	38.3		mg/kg

Sample Number: I8L-16
Sample Date: 8/29/96
Laboratory ID: S685150D-7
QC Type: CS
% Moisture: 0
Location: I8L-16

	RESULT	QUAL	UNIT
Aluminum	2.2	U	mg/l
Antimony	2.4	U	mg/l
Arsenic	16.8		mg/l
Barium	0.57	U	mg/l
Beryllium	0.04	U	mg/k
Cadmium	0.53	U	mg/k
Calcium	14800		mg/k
Chromium	0.82	U	mg/k
Cobalt	0.37	U	mg/k
Copper	34.4		mg/k
Iron	9.7	U	mg/k
Lead	0.34	U	mg/k
Magnesium	2020		mg/k
Manganese	0.78		mg/k
Mercury	0.08	U	mg/k
Nickel	0.85	U	mg/k
Potassium	2890		mg/k
Selenium	1	U	mg/k
Silver	0.26	U	mg/k
Sodium	3570		mg/k
Thallium	0.81	U	mg/k
Vanadium	0.45	U	mg/k
Zinc	21.8		mg/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR005

INORGANICS

Sample Number: I8L-17
Sample Date: 8/29/96
Laboratory ID: S685150D-8
QC Type: CS
% Moisture: 0
Location: I8L-17

	RESULT	QUAL	UNITS
Aluminum	7.4	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	13.6		mg/kg
Barium	0.78	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	24800		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	25		mg/kg
Iron	8.9		mg/kg
Lead	0.42		mg/kg
Magnesium	2790		mg/kg
Manganese	0.33		mg/kg
Mercury	0.04	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2130		mg/kg
Selenium	1	U	mg/kg
Silver	0.27	U	mg/kg
Sodium	4960		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	20.5		mg/kg

Sample Number: I8T-19
Sample Date: 8/29/96
Laboratory ID: S685150D-12
QC Type: CS
% Moisture: 0
Location: I8T-19

	RESULT	QUAL	UNITS
Aluminum	2.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	27.3		mg/kg
Barium	0.09	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.84		mg/kg
Calcium	664		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	111		mg/kg
Iron	115		mg/kg
Lead	4.8		mg/kg
Magnesium	2320		mg/kg
Manganese	1.4		mg/kg
Mercury	0.09		mg/kg
Nickel	0.85	U	mg/kg
Potassium	2560		mg/kg
Selenium	1	U	mg/kg
Silver	0.88	U	mg/kg
Sodium	3860		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	68.6		mg/kg

Sample Number: I8T-20
Sample Date: 8/29/96
Laboratory ID: S685150D-10
QC Type: CS
% Moisture: 0
Location: I8T-20

	RESULT	QUAL	UNI
Aluminum	1.7	U	mg
Antimony	2.4	U	mg/
Arsenic	119		mg/
Barium	0.09	U	mg/
Beryllium	0.04	U	mg/
Cadmium	0.53	U	mg/
Calcium	747		mg/
Chromium	0.82	U	mg/
Cobalt	0.37	U	mg/
Copper	22.2		mg/
Iron	26.9		mg/
Lead	0.77		mg/
Magnesium	1840		mg/
Manganese	1.4		mg/
Mercury	0.2		mg/
Nickel	0.85	U	mg/
Potassium	2930		mg/
Selenium	1	U	mg/
Silver	0.23	U	mg/
Sodium	3910		mg/
Thallium	0.81	U	mg/
Vanadium	0.45	U	mg/
Zinc	19.3		mg/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR005

INORGANICS

Sample Number: I8T-5
Sample Date: 8/29/96
Laboratory ID: S685150D-19
QC Type: CS
% Moisture: 0
Location: I8T-5

	RESULT	QUAL	UNITS
Aluminum	2.1	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	25.6		mg/kg
Barium	0.09	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	566		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	18.1		mg/kg
Iron	22.1	U	mg/kg
Lead	0.42		mg/kg
Magnesium	1230		mg/kg
Manganese	1.4		mg/kg
Mercury	0.06	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2470		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	4030		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	15.3		mg/kg

Sample Number: I8T-6
Sample Date: 8/29/96
Laboratory ID: S685150D-20
QC Type: CS
% Moisture: 0
Location: I8T-6

	RESULT	QUAL	UNITS
Aluminum	1.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	41.6		mg/kg
Barium	0.09	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	1.3		mg/kg
Calcium	480		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	97.2		mg/kg
Iron	55.7		mg/kg
Lead	0.34	U	mg/kg
Magnesium	1330		mg/kg
Manganese	1.1		mg/kg
Mercury	0.12		mg/kg
Nickel	0.85	U	mg/kg
Potassium	2570		mg/kg
Selenium	1	U	mg/kg
Silver	0.31	U	mg/kg
Sodium	4410		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	31.6		mg/kg

ORGANIC DATA VALIDATION

INTERNAL CORRESPONDENCE

TO:	CHUCK BRYAN	DATE:	JANUARY 22, 1997
FROM:	EDWARD A. INABINETT	COPIES:	DV FILE

SUBJECT: ORGANIC DATA REVIEW - PEST/PCB
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG BR005

SAMPLES: 20/Tissue:

AF-29	I7L-1	I8C-2	I8CH-8
AF-7	I8L-16	I8T-19	I8CH-11
AC-3	I8L-17	I8CH-7	I8CH-9
B4C-2	I7L-2	B4C-3	I8T-5
B4C-1	I8T-20	I8CH-21	I8T-6

The sample set for the CTO 007 NAS Key West site, SDG BR005, consists of twenty (20) tissue environmental samples. All samples were analyzed for Target Compound List (TCL) pesticide/PCB organic compounds. The field crew designated sample AF-7 for Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis.

The samples were collected by Brown and Root Environmental on August 29th, 1996 and analyzed by Savannah Laboratories & Environmental Services, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. Analyses were conducted using EPA SW-846 Method 8080 analytical and reporting protocols. The data were evaluated according to the following parameters:

- Holding times
- Surrogate recoveries
- * Initial and continuing calibrations
- Laboratory and field blank analyses
- * Compound quantitation

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Pesticide/PCBs

The continuing calibration %Ds for acroclor 1260, endrin aldehyde, and chlorobenzilate were greater than 25%. Failure to meet this quality control criteria indicates that the laboratory's instruments could not achieve satisfactory sensitivity for these compounds, and therefore, the associated positive and nondetected results for these compounds could be compromised. No qualifying action was taken in this review.

The case narrative states that confirmation of certain compounds was not feasible due to coeluting matrix interference on one of the GC columns. Thus, the concentrations reported were based on quantitation from a single column. As a result, the concentrations for these compounds were qualified as estimated "J". This affected samples AF-29, AC-3, B4C-2, B4C-1, I7L-1, I8L-16, I8C-2, I8T-19, B4C-3, I8CH-8, I8CH-11, I8CH-9, I8T-5, and I8T-6.

All samples had %Ds greater than 100% between positive results on columns 1 and 2 for several pesticide compounds. Positive results for these compounds were qualified as estimated "J" in the aforementioned samples.

The laboratory qualifier "P" was removed from all target compound data with a %D above 25% and less than 100% between positive results on columns 1 and 2.

No other problems were noted.

Additional Comments

A Chain of Custody entry for sample I8C-2 could not be found, therefore, the holding time for this sample could not be verified. After discussions with the individuals that collected the samples, it is assumed that this sample was collected on August 29th, 1996 and the holding time was not exceeded.

Executive Summary

Laboratory Performance: Continuing calibration %Ds were greater than 25% for several pesticide compounds.

Other Factors Affecting Data Quality: Several pesticide/PCB compounds had high %Ds between positive results on columns 1 and 2.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Brown and Root Environmental

Edward A. Inabinett
Engineer/Data Validator

for
Brown and Root Environmental

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

NAS KEY WEST

SDG BR005

TABLE 1 - RECOMMENDATION SUMMARY

Sample No.	PEST/PCB		
AF-29		$J^{2,3,4,5,6,7,19,20}$	
AF-7		$J^{5,6,7,11,21,22,23,24}$	
AC-3		$J^{5,8,9,11,19,22,24,25,26,27,28}$	
B4C-2		$J^{1,2,11,12,13,14,28,29,30}$	
B4C-1		$J^{7,8,13,15,31,32}$	
I7L-1		$J^{2,5,7,8,9,12,14,32}$	
I8L-16		$J^{5,7,8,12,32,33}$	
I8L-17		$J^{6,7,16}$	
I7L-2		$J^{4,7,9,10,11,14,33,34}$	
I8T-20		$J^{6,8,9,10,11}$	
I8C-2		$J^{2,7,8,11,15,17,18,26,32,35,39}$	
I8T-19		$J^{5,7,22,32}$	
I8CH-7		$J^{2,3,4,5,8,9,13,14,22}$	
B4C-3		$J^{7,22,26,27,30,32}$	
I8CH-21		$J^{2,3,4,6,7,8,9,13,14,22,37,38}$	
I8CH-8		$J^{4,5,6,7,12,13,15,36}$	
I8CH-11		$J^{4,8,9,13,14,31,32,36,40,41}$	
I8CH-9		$J^{3,4,7,8,9,10,13,15,16,18,31,32,39}$	
I8T-5		$J^{7,32}$	
I8T-6		$J^{7,32,39}$	

If the field is left blank, the qualifier is A - Accept all data.

J^1 - Accept data, but qualify positive results for endosulfan I as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^2 - Accept data, but qualify positive results for 4,4'-DDT as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^3 - Accept data, but qualify positive results for gamma-BHC as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^4 - Accept data, but qualify positive results for heptachlor epoxide as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^5 - Accept data, but qualify positive results for endosulfan II as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^6 - Accept data, but qualify positive results for endrin as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^7 - Accept data, but qualify positive results for endrin aldehyde as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^8 - Accept data, but qualify positive results for chlorobenzilate as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^9 - Accept data, but qualify positive results for 4,4'-DDE as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{10} - Accept data, but qualify positive results for beta-BHC as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{11} - Accept data, but qualify positive results for dieldrin as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{12} - Accept data, but qualify positive results for 4,4'-DDD as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{13} - Accept data, but qualify positive results for aldrin as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{14} - Accept data, but qualify positive results for endosulfan sulfate as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{15} - Accept data, but qualify positive results for methoxychlor as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{16} - Accept data, but qualify positive results for heptachlor as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{17} - Accept data, but qualify positive results for delta-BHC as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{18} - Accept data, but qualify positive results for isodrin as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{19} - Accept data, but qualify positive results for endosulfan sulfate as estimated "J" as a result of concentrations reported based on quantitation from a single column.

J^{20} - Accept data, but remove the laboratory qualifier "P" for endosulfan I as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{21} - Accept data, but remove the laboratory qualifier "P" for chlorobenzilate as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{22} - Accept data, but remove the laboratory qualifier "P" for beta-BHC as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{23} - Accept data, but remove the laboratory qualifier "P" for 4,4'-DDE as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{24} - Accept data, but remove the laboratory qualifier "P" for 4,4'-DDT as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{25} - Accept data, but qualify positive results for heptachlor as estimated "J" as a result of concentrations reported based on quantitation from a single column.

J^{26} - Accept data, but remove the laboratory qualifier "P" for aldrin as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{27} - Accept data, but remove the laboratory qualifier "P" for 4,4'-DDD as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{28} - Accept data, but remove the laboratory qualifier "P" for endrin aldehyde as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{29} - Accept data, but remove the laboratory qualifier "P" for endosulfan sulfate as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{30} - Accept data, but qualify positive results for chlorobenzilate as estimated "J" as a result of concentrations reported based on quantitation from a single column.

J^{31} - Accept data, but qualify positive results for 4,4'-DDD as estimated "J" as a result of concentrations reported based on quantitation from a single column.

J^{32} - Accept data, but qualify positive results for endrin as estimated "J" as a result of concentrations reported based on quantitation from a single column.

J^{33} - Accept data, but remove the laboratory qualifier "P" for heptachlor as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{34} - Accept data, but remove the laboratory qualifier "P" for endosulfan II as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{35} - Accept data, but remove the laboratory qualifier "P" for heptachlor epoxide as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{36} - Accept data, but qualify positive results for endosulfan I as estimated "J" as a result of concentrations reported based on quantitation from a single column.

J^{37} - Accept data, but remove the laboratory qualifier "P" for delta-BHC as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{38} - Accept data, but remove the laboratory qualifier "P" for dieldrin as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{39} - Accept data, but qualify positive results for endosulfan II as estimated "J" as a result of concentrations reported based on quantitation from a single column.

J^{40} - Accept data, but remove the laboratory qualifier "P" for gamma-BHC as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{41} - Accept data, but remove the laboratory qualifier "P" for methoxychlor as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR005

PESTICIDES/PCBs

Sample Number: AC-3
Sample Date: 8/29/96
Laboratory ID: S685150D-3
QC Type: CS
% Moisture: 0
Location: AC-3

	RESULT	QUAL	UNITS
4,4'-DDD	2.6	J	ug/kg
4,4'-DDE	1.3	J	ug/kg
4,4'-DDT	1.6	J	ug/kg
Aldrin	0.26	J	ug/kg
alpha-BHC	3.4	U	ug/kg
Aroclor-1016	66	U	ug/kg
Aroclor-1221	130	U	ug/kg
Aroclor-1232	66	U	ug/kg
Aroclor-1242	66	U	ug/kg
Aroclor-1248	66	U	ug/kg
Aroclor-1254	66	U	ug/kg
Aroclor-1260	66	U	ug/kg
beta-BHC	1.2	J	ug/kg
Chlordane	34	U	ug/kg
Chlorobenzilate	110	J	ug/kg
delta-BHC	3.4	U	ug/kg
Dieldrin	2.9	J	ug/kg
Endosulfan I	1.8	J	ug/kg
Endosulfan II	0.64	J	ug/kg
Endosulfan sulfate	1.8	J	ug/kg
Endrin	6.6	U	ug/kg
Endrin aldehyde	5.4	J	ug/kg
gamma-BHC	3.4	U	ug/kg
Heptachlor	0.52	J	ug/kg
Heptachlor epoxide	3.4	U	ug/kg
Isodrin	6.6	U	ug/kg
Methoxychlor	34	U	ug/kg
Toxaphene	340	U	ug/kg

Sample Number: AF-29
Sample Date: 8/29/96
Laboratory ID: S685150D-1
QC Type: CS
% Moisture: 0
Location: AF-29

	RESULT	QUAL	UNITS
4,4'-DDD	2.2	J	ug/kg
4,4'-DDE	4.7		ug/kg
4,4'-DDT	1.7	J	ug/kg
Aldrin	0.98	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	25		ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	0.87	J	ug/kg
Endosulfan II	0.53	J	ug/kg
Endosulfan sulfate	4.8	J	ug/kg
Endrin	0.72	J	ug/kg
Endrin aldehyde	1.4	J	ug/kg
gamma-BHC	0.31	J	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	0.59	J	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: AF-7
Sample Date: 8/23/96
Laboratory ID: S685150D-2
QC Type: CS
% Moisture: 0
Location: AF-7

	RESULT	QUAL	UNIT
4,4'-DDD	3.1	J	ug/k
4,4'-DDE	9.5		ug/k
4,4'-DDT	4		ug/k
Aldrin	1.4	J	ug/k
alpha-BHC	1.7	U	ug/k
Aroclor-1016	33	U	ug/k
Aroclor-1221	67	U	ug/k
Aroclor-1232	33	U	ug/k
Aroclor-1242	33	U	ug/k
Aroclor-1248	33	U	ug/k
Aroclor-1254	33	U	ug/k
Aroclor-1260	33	U	ug/k
beta-BHC	0.52	J	ug/k
Chlordane	17	U	ug/k
Chlorobenzilate	74		ug/k
delta-BHC	1.7	U	ug/k
Dieldrin	0.93	J	ug/k
Endosulfan I	2.2		ug/k
Endosulfan II	0.7	J	ug/k
Endosulfan sulfate	3.3	U	ug/k
Endrin	0.62	J	ug/k
Endrin aldehyde	3.9	J	ug/k
gamma-BHC	1.7	U	ug/k
Heptachlor	1.7	U	ug/k
Heptachlor epoxide	3		ug/k
Isodrin	3.3	U	ug/k
Methoxychlor	17	U	ug/k
Toxaphene	170	U	ug/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR005

PESTICIDES/PCBs

Sample Number: B4C-1
Sample Date: 8/29/96
Laboratory ID: S685150D-5
QC Type: CS
% Moisture: 0
Location: B4C-1

	RESULT	QUAL	UNITS
4,4'-DDD	0.59	J	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	0.28	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	31	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.92	J	ug/kg
Endrin aldehyde	2.3	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	5	J	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B4C-2
Sample Date: 8/29/96
Laboratory ID: S685150D-4
QC Type: CS
% Moisture: 0
Location: B4C-2

	RESULT	QUAL	UNITS
4,4'-DDD	1.6	J	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	0.48	J	ug/kg
Aldrin	0.24	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	32	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	0.38	J	ug/kg
Endosulfan I	0.4	J	ug/kg
Endosulfan II	2.6	J	ug/kg
Endosulfan sulfate	1.1	J	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	2	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	0.57	J	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B4C-3
Sample Date: 8/29/96
Laboratory ID: S685150D-14
QC Type: CS
% Moisture: 0
Location: B4C-3

	RESULT	QUAL	UNI
4,4'-DDD	0.41	J	ug/
4,4'-DDE	3.3	U	ug/
4,4'-DDT	3.3	U	ug/
Aldrin	0.2	J	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	33	U	ug/
beta-BHC	0.56	J	ug/
Chlordane	17	U	ug/
Chlorobenzilate	17	J	ug/
delta-BHC	1.7	U	ug/
Dieldrin	3.3	U	ug/
Endosulfan I	1.7	U	ug/
Endosulfan II	0.46	J	ug/
Endosulfan sulfate	3.3	U	ug/
Endrin	0.31	J	ug/
Endrin aldehyde	0.34	J	ug/
gamma-BHC	1.7	U	ug/
Heptachlor	1.7	U	ug/
Heptachlor epoxide	1.7	U	ug/
Isodrin	3.3	U	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/

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Sample Number: I7L-1
Sample Date: 8/29/96
Laboratory ID: S685150D-6
QC Type: CS
% Moisture: 0
Location: I7L-1

	RESULT	QUAL	UNITS
4,4'-DDD	0.77	J	ug/kg
4,4'-DDE	0.58	J	ug/kg
4,4'-DDT	0.21	J	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	0.72	J	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	15	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	0.2	J	ug/kg
Endosulfan sulfate	0.8	J	ug/kg
Endrin	0.21	J	ug/kg
Endrin aldehyde	2.2	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I7L-2
Sample Date: 8/29/96
Laboratory ID: S685150D-9
QC Type: CS
% Moisture: 0
Location: I7L-2

	RESULT	QUAL	UNITS
4,4'-DDD	1.2	J	ug/kg
4,4'-DDE	0.67	J	ug/kg
4,4'-DDT	2	J	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	0.42	J	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	0.34	J	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	0.25	J	ug/kg
Endosulfan sulfate	3.9	J	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	1.9	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.37	J	ug/kg
Heptachlor epoxide	0.44	J	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I8C-2
Sample Date: 8/29/96
Laboratory ID: S685150D-11
QC Type: CS
% Moisture: 0
Location: I8C-2

	RESULT	QUAL	UNI
4,4'-DDD	3.3	U	ug/
4,4'-DDE	3.3	U	ug/k
4,4'-DDT	3.3	J	ug/k
Aldrin	2.2		ug/k
alpha-BHC	1.6	J	ug/k
Aroclor-1016	33	U	ug/k
Aroclor-1221	67	U	ug/k
Aroclor-1232	33	U	ug/k
Aroclor-1242	33	U	ug/k
Aroclor-1248	33	U	ug/k
Aroclor-1254	33	U	ug/k
Aroclor-1260	33	U	ug/k
beta-BHC	1.7	U	ug/k
Chlordane	17	U	ug/k
Chlorobenzilate	55	J	ug/k
delta-BHC	0.47	J	ug/k
Dieldrin	1.2	J	ug/k
Endosulfan I	1.7	U	ug/k
Endosulfan II	13	J	ug/k
Endosulfan sulfate	3.3	U	ug/k
Endrin	0.77	J	ug/k
Endrin aldehyde	6.4	J	ug/k
gamma-BHC	1.7	U	ug/k
Heptachlor	1.7	U	ug/k
Heptachlor epoxide	12		ug/k
Isodrin	0.6	J	ug/k
Methoxychlor	14	J	ug/k
Toxaphene	170	U	ug/k

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Sample Number: I8CH-11
Sample Date: 8/29/96
Laboratory ID: S685150D-17
QC Type: CS
% Moisture: 0
Location: I8CH-11

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	J	ug/kg
4,4'-DDE	0.72	J	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.2	J	ug/kg
alpha-BHC	0.67	J	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.4	J	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	120	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	2.2	J	ug/kg
Endosulfan sulfate	6.4	J	ug/kg
Endrin	4	J	ug/kg
Endrin aldehyde	27		ug/kg
gamma-BHC	1.2	J	ug/kg
Heptachlor	2.4		ug/kg
Heptachlor epoxide	2.6	J	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	43		ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I8CH-21
Sample Date: 8/29/96
Laboratory ID: S685150D-15
QC Type: CS
% Moisture: 0
Location: I8CH-21

	RESULT	QUAL	UNITS
4,4'-DDD	6.6	U	ug/kg
4,4'-DDE	0.99	J	ug/kg
4,4'-DDT	2.8	J	ug/kg
Aldrin	0.91	J	ug/kg
alpha-BHC	3.4	U	ug/kg
Aroclor-1016	66	U	ug/kg
Aroclor-1221	130	U	ug/kg
Aroclor-1232	66	U	ug/kg
Aroclor-1242	66	U	ug/kg
Aroclor-1248	66	U	ug/kg
Aroclor-1254	66	U	ug/kg
Aroclor-1260	66	U	ug/kg
beta-BHC	4.7		ug/kg
Chlordane	34	U	ug/kg
Chlorobenzilate	180	J	ug/kg
delta-BHC	0.82	J	ug/kg
Dieldrin	3.6	J	ug/kg
Endosulfan I	3.4	U	ug/kg
Endosulfan II	6.6	U	ug/kg
Endosulfan sulfate	7.8	J	ug/kg
Endrin	5.2	J	ug/kg
Endrin aldehyde	3.7	J	ug/kg
gamma-BHC	1	J	ug/kg
Heptachlor	3.4	U	ug/kg
Heptachlor epoxide	3.5	J	ug/kg
Isodrin	6.6	U	ug/kg
Methoxychlor	49		ug/kg
Toxaphene	340	U	ug/kg

Sample Number: I8CH-7
Sample Date: 8/29/96
Laboratory ID: S685150D-13
QC Type: CS
% Moisture: 0
Location: I8CH-7

	RESULT	QUAL	UI
4,4'-DDD	0.92	J	u
4,4'-DDE	3.2	J	u
4,4'-DDT	0.18	J	u
Aldrin	1.3	J	u
alpha-BHC	1.7	U	u
Aroclor-1016	33	U	ug
Aroclor-1221	67	U	ug
Aroclor-1232	33	U	ug
Aroclor-1242	33	U	ug
Aroclor-1248	33	U	ug
Aroclor-1254	33	U	ug
Aroclor-1260	33	U	ug
beta-BHC	3.8	J	ug
Chlordane	17	U	ug
Chlorobenzilate	31	J	ug
delta-BHC	1.7	U	ug
Dieldrin	3.3	U	ug
Endosulfan I	1.7	U	ug
Endosulfan II	1.2	J	ug
Endosulfan sulfate	5.2	J	ug
Endrin	0.9	J	ug
Endrin aldehyde	3.3	U	ug
gamma-BHC	0.38	J	ug
Heptachlor	0.55	J	ug
Heptachlor epoxide	3.3	J	ug
Isodrin	3.3	U	ug
Methoxychlor	17	U	ug
Toxaphene	170	U	ug

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Sample Number: I8CH-8
Sample Date: 8/29/96
Laboratory ID: S685150D-16
QC Type: CS
% Moisture: 0
Location: I8CH-8

	RESULT	QUAL	UNITS
4,4'-DDD	0.77	J	ug/kg
4,4'-DDE	3.6		ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.3	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.6	J	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	93		ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	0.56	J	ug/kg
Endosulfan II	0.64	J	ug/kg
Endosulfan sulfate	6.7		ug/kg
Endrin	1.7	J	ug/kg
Endrin aldehyde	1.4	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	4	J	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	5.3	J	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I8CH-9
Sample Date: 8/29/96
Laboratory ID: S685150D-18
QC Type: CS
% Moisture: 0
Location: I8CH-9

	RESULT	QUAL	UNITS
4,4'-DDD	2.7	J	ug/kg
4,4'-DDE	2.4	J	ug/kg
4,4'-DDT	6.6	U	ug/kg
Aldrin	0.24	J	ug/kg
alpha-BHC	3.4	U	ug/kg
Aroclor-1016	66	U	ug/kg
Aroclor-1221	130	U	ug/kg
Aroclor-1232	66	U	ug/kg
Aroclor-1242	66	U	ug/kg
Aroclor-1248	66	U	ug/kg
Aroclor-1254	66	U	ug/kg
Aroclor-1260	66	U	ug/kg
beta-BHC	2	J	ug/kg
Chlordane	34	U	ug/kg
Chlorobenzilate	720	J	ug/kg
delta-BHC	3.4	U	ug/kg
Dieldrin	6.6	U	ug/kg
Endosulfan I	3.4	U	ug/kg
Endosulfan II	7.5	J	ug/kg
Endosulfan sulfate	6.6	U	ug/kg
Endrin	9.5	J	ug/kg
Endrin aldehyde	37	J	ug/kg
gamma-BHC	0.37	J	ug/kg
Heptachlor	0.37	J	ug/kg
Heptachlor epoxide	2.5	J	ug/kg
Isodrin	1.2	J	ug/kg
Methoxychlor	4.4	J	ug/kg
Toxaphene	340	U	ug/kg

Sample Number: I8L-16
Sample Date: 8/29/96
Laboratory ID: S685150D-7
QC Type: CS
% Moisture: 0
Location: I8L-16

	RESULT	QUAL	UN
4,4'-DDD	0.61	J	ug
4,4'-DDE	3.3	U	ug
4,4'-DDT	3.3	U	ug
Aldrin	1.7	U	ug
alpha-BHC	1.7	U	ug
Aroclor-1016	33	U	ug
Aroclor-1221	67	U	ug
Aroclor-1232	33	U	ug
Aroclor-1242	33	U	ug
Aroclor-1248	33	U	ug
Aroclor-1254	33	U	ug
Aroclor-1260	33	U	ug
beta-BHC	1.7	U	ug
Chlordane	17	U	ug
Chlorobenzilate	23	J	ug
delta-BHC	1.7	U	ug
Dieldrin	3.3	U	ug
Endosulfan I	1.7	U	ug
Endosulfan II	0.84	J	ug
Endosulfan sulfate	3.3	U	ug
Endrin	0.23	J	ug
Endrin aldehyde	2.9	J	ug
gamma-BHC	1.7	U	ug
Heptachlor	0.26	J	ug
Heptachlor epoxide	1.7	U	ug
Isodrin	3.3	U	ug
Methoxychlor	17	U	ug
Toxaphene	170	U	ug

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Sample Number: I8L-17
Sample Date: 8/29/96
Laboratory ID: S685150D-8
QC Type: CS
% Moisture: 0
Location: I8L-17

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.21	J	ug/kg
Endrin aldehyde	0.59	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.13	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I8T-19
Sample Date: 8/29/96
Laboratory ID: S685150D-12
QC Type: CS
% Moisture: 0
Location: I8T-19

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	0.87	J	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	0.34	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	1.7	J	ug/kg
Endrin aldehyde	3	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I8T-20
Sample Date: 8/29/96
Laboratory ID: S685150D-10
QC Type: CS
% Moisture: 0
Location: I8T-20

	RESULT	QUAL	UNIT
4,4'-DDD	3.3	U	ug/k
4,4'-DDE	0.62	J	ug/k
4,4'-DDT	0.49	J	ug/k
Aldrin	1.7	U	ug/k
alpha-BHC	1.7	U	ug/k
Aroclor-1016	33	U	ug/k
Aroclor-1221	67	U	ug/k
Aroclor-1232	33	U	ug/k
Aroclor-1242	33	U	ug/k
Aroclor-1248	33	U	ug/k
Aroclor-1254	33	U	ug/k
Aroclor-1260	33	U	ug/k
beta-BHC	0.25	J	ug/k
Chlordane	17	U	ug/k
Chlorobenzilate	3.4	J	ug/k
delta-BHC	1.7	U	ug/k
Dieldrin	0.14	J	ug/k
Endosulfan I	1.7	U	ug/k
Endosulfan II	3.3	U	ug/k
Endosulfan sulfate	3.3	U	ug/k
Endrin	0.39	J	ug/k
Endrin aldehyde	1.8	J	ug/k
gamma-BHC	1.7	U	ug/k
Heptachlor	1.7	U	ug/k
Heptachlor epoxide	1.7	U	ug/k
Isodrin	3.3	U	ug/k
Methoxychlor	17	U	ug/k
Toxaphene	170	U	ug/k

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Sample Number: I8T-5
Sample Date: 8/29/96
Laboratory ID: S685150D-19
QC Type: CS
% Moisture: 0
Location: I8T-5

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.45	J	ug/kg
Endrin aldehyde	0.89	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I8T-6
Sample Date: 8/29/96
Laboratory ID: S685150D-20
QC Type: CS
% Moisture: 0
Location: I8T-6

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	2.3		ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	0.58	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	1.6	J	ug/kg
Endrin aldehyde	1.7	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

INORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 11, 1997**
FROM:	**JULEA F. BRADLEY**	**COPIES:**	**DV FILE**
SUBJECT:	**INORGANIC DATA REVIEW – TAL METALS CTO 007 – KEY WEST, FLORIDA SDG – BR006 (S685150E)**		

SAMPLES: 20/Tissue:

B4C-4	B4C-5	B4C-6	I7L-3
I8C-1	I8C-22	I8C-3	I8C-4
I8CH-10	I8CH-12	I8CH-13	I8CH-14
I8CH-15	I8CH-23	I8CH-24	I8CH-25
I8CH-26	I8CH-27	I8CH-28	I8L-18

Overview

The sample set for CTO 007, Key West, BR006 (S685150E) consists of twenty (20) tissue environmental samples. No field duplicates are included within this SDG.

All samples were analyzed for Target Analyte List (TAL) metals. The samples were collected by Brown & Root Environmental on September 14, 1996 and analyzed by Savannah Laboratories under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- Calibration Verifications
- * Laboratory Blank Analyses
- Matrix Spike Results

*Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/ preparation/ field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level (tissue)
aluminum	22.1 ug/L	22.1 mg/kg
arsenic	3.5 ug/L	3.5 mg/kg
barium	1.6 ug/L	1.6 mg/kg
calcium*	2.765 mg/kg	13.83 mg/kg
cobalt	2.9 ug/L	2.9 mg/kg
copper	7.6 ug/L	7.6 mg/kg
iron	26.2 ug/L	26.2 mg/kg
magnesium	23.6 mg/kg	23.6 mg/kg
mercury*	0.019 ug/L	0.095 mg/kg
nickel	4.5 ug/L	4.5 mg/kg
silver	1.2 ug/L	1.2 mg/kg
sodium	63.2 ug/L	63.2 mg/kg
zinc	2.4 ug/L	2.4 mg/kg

* maximum concentration found in the preparation blank.

Samples affected: All

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for aluminum, barium, cobalt, iron, mercury, nickel, and silver have been qualified as nondetected, "U." No action was taken for the remaining analytes since either the results were greater than the action level or were nondetects.

Notes

The AA Contract Required Control Limit (CRDL) Standard Percent Recoveries (%Rs) for selenium exceeded the control limits. However, no validation actions were taken for CRDL Standard %Rs.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method/preparation blanks.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed in accordance with the "National Functional Guidelines for Inorganic Review," February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality. "I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

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Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

KEY WEST
SDG BR006

TABLE 1 - RECOMMENDATION SUMMARY

Aluminum	A[1]	Magnesium	
Antimony		Manganese	
Arsenic		Mercury	A[1]
Barium	A[1]	Nickel	A[1]
Beryllium		Potassium	
Cadmium		Selenium	
Calcium		Silver	A[1]
Chromium		Sodium	
Cobalt	A[1]	Thallium	
Copper		Vanadium	
Iron	A[1]	Zinc	
Lead	A[1]		

If the field is left blank, the qualifier is A - Accept all data.

A[1] - Accept data but qualify as nondetected, "U," as a result of laboratory blank contamination.

APPENDIX A
Qualified Analytical Results

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR006

INORGANICS

Sample Number: B4C-4
Sample Date: 8/29/96
Laboratory ID: S685150E-20
QC Type: CS
% Moisture: 0
Location: B4C-4

	RESULT	QUAL	UNITS
Aluminum	3.5	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	14.3		mg/kg
Barium	0.31	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	6790		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	24.9		mg/kg
Iron	9.9	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	1270		mg/kg
Manganese	1.2		mg/kg
Mercury	0.06	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	1670		mg/kg
Selenium	1	U	mg/kg
Silver	0.26	U	mg/kg
Sodium	8250		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	42.9		mg/kg

Sample Number: B4C-5
Sample Date: 8/29/96
Laboratory ID: S685150E-19
QC Type: CS
% Moisture: 0
Location: B4C-5

	RESULT	QUAL	UNITS
Aluminum	1.9	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	19.8		mg/kg
Barium	0.18	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	3880		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	26.8		mg/kg
Iron	22.7	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	924		mg/kg
Manganese	0.36		mg/kg
Mercury	0.09	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	1680		mg/kg
Selenium	1	U	mg/kg
Silver	0.34	U	mg/kg
Sodium	7960		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	32.8		mg/kg

Sample Number: B4C-6
Sample Date: 8/29/96
Laboratory ID: S685150E-18
QC Type: CS
% Moisture: 0
Location: B4C-6

	RESULT	QUAL	UNI
Aluminum	1.8	U	mg/
Antimony	2.4	U	mg/
Arsenic	17.6		mg/
Barium	0.18	U	mg/
Beryllium	0.04	U	mg/
Cadmium	0.53	U	mg/
Calcium	5760		mg/
Chromium	0.82	U	mg/
Cobalt	0.37	U	mg/
Copper	29.9		mg/
Iron	15	U	mg/
Lead	0.37		mg/
Magnesium	1170		mg/
Manganese	0.74		mg/
Mercury	0.06	U	mg/
Nickel	0.85	U	mg/
Potassium	2400		mg/
Selenium	1	U	mg/
Silver	0.4	U	mg/
Sodium	6940		mg/
Thallium	0.81	U	mg/
Vanadium	0.45	U	mg/
Zinc	57.3		mg/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

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INORGANICS

Sample Number: I7L-3
Sample Date: 8/29/96
Laboratory ID: S685150E-17
QC Type: CS
% Moisture: 0
Location: I7L-3

	RESULT	QUAL	UNITS
Aluminum	3.1	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	14		mg/kg
Barium	0.46	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	11400		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	18.9		mg/kg
Iron	6	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	1490		mg/kg
Manganese	0.18		mg/kg
Mercury	0.03	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2010		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	6320		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	17.3		mg/kg

Sample Number: I8C-1
Sample Date: 8/29/96
Laboratory ID: S685150E-7
QC Type: CS
% Moisture: 0
Location: I8C-1

	RESULT	QUAL	UNITS
Aluminum	8	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	19.3		mg/kg
Barium	1	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	28400		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	69.8		mg/kg
Iron	122		mg/kg
Lead	1.7		mg/kg
Magnesium	3040		mg/kg
Manganese	2.8		mg/kg
Mercury	0.11		mg/kg
Nickel	0.85	U	mg/kg
Potassium	2380		mg/kg
Selenium	1	U	mg/kg
Silver	0.81	U	mg/kg
Sodium	6410		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.68		mg/kg
Zinc	93.8		mg/kg

Sample Number: I8C-22
Sample Date: 8/29/96
Laboratory ID: S685150E-11
QC Type: CS
% Moisture: 0
Location: I8C-22

	RESULT	QUAL	UN
Aluminum	13.6	U	mg
Antimony	2.4	U	mg
Arsenic	7.6		mg
Barium	0.87	U	mg
Beryllium	0.04	U	mg
Cadmium	0.67		mg
Calcium	12800		mg
Chromium	0.82	U	mg
Cobalt	0.37	U	mg
Copper	12.3		mg
Iron	290		mg
Lead	1.2		mg
Magnesium	2630		mg
Manganese	2.1		mg
Mercury	0.04	U	mg
Nickel	1.5	U	mg
Potassium	1520		mg
Selenium	1	U	mg
Silver	0.23	U	mg
Sodium	7000		mg
Thallium	0.81	U	mg
Vanadium	1.1		mg
Zinc	15.6		mg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

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INORGANICS

Sample Number: I8C-3
Sample Date: 8/29/96
Laboratory ID: S685150E-4
QC Type: CS
% Moisture: 0
Location: I8C-3

	RESULT	QUAL	UNITS
Aluminum	5.6	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	4.5		mg/kg
Barium	1.7		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	1.6		mg/kg
Calcium	50200		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	8.6		mg/kg
Iron	32.6		mg/kg
Lead	0.34	U	mg/kg
Magnesium	7460		mg/kg
Manganese	3.5		mg/kg
Mercury	0.03	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	1410		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	7590		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	12.5		mg/kg

Sample Number: I8C-4
Sample Date: 8/29/96
Laboratory ID: S685150E-8
QC Type: CS
% Moisture: 0
Location: I8C-4

	RESULT	QUAL	UNITS
Aluminum	15.2	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	8.8		mg/kg
Barium	1.7		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.8		mg/kg
Calcium	39100		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	18.3		mg/kg
Iron	80		mg/kg
Lead	0.67		mg/kg
Magnesium	4900		mg/kg
Manganese	3.4		mg/kg
Mercury	0.08	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	1910		mg/kg
Selenium	1	U	mg/kg
Silver	0.24	U	mg/kg
Sodium	6800		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	1.1		mg/kg
Zinc	21.5		mg/kg

Sample Number: I8CH-10
Sample Date: 8/29/96
Laboratory ID: S685150E-3
QC Type: CS
% Moisture: 0
Location: I8CH-10

	RESULT	QUAL	UNI
Aluminum	6.2	U	mg/
Antimony	2.4	U	mg/
Arsenic	4.9		mg/
Barium	0.57	U	mg/
Beryllium	0.04	U	mg/
Cadmium	0.53	U	mg/
Calcium	13900		mg/
Chromium	0.82	U	mg/
Cobalt	0.37	U	mg/
Copper	61.3		mg/
Iron	62.8		mg/
Lead	1.2		mg/
Magnesium	2800		mg/
Manganese	24.9		mg/
Mercury	0.1		mg/
Nickel	3	U	mg/
Potassium	3280		mg/
Selenium	1	U	mg/
Silver	1.3		mg/
Sodium	4530		mg/
Thallium	0.81	U	mg/
Vanadium	16.7		mg/
Zinc	19.4		mg/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

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INORGANICS

Sample Number: I8CH-12
Sample Date: 8/29/96
Laboratory ID: S685150E-1
QC Type: CS
% Moisture: 0
Location: I8CH-12

	RESULT	QUAL	UNITS
Aluminum	4.5	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	5.2		mg/kg
Barium	0.3	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	11400		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	18.1		mg/kg
Iron	31.5		mg/kg
Lead	0.59		mg/kg
Magnesium	1660		mg/kg
Manganese	44.6		mg/kg
Mercury	0.07	U	mg/kg
Nickel	3.2	U	mg/kg
Potassium	2870		mg/kg
Selenium	1	U	mg/kg
Silver	0.26	U	mg/kg
Sodium	3660		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	4.2		mg/kg
Zinc	18.3		mg/kg

Sample Number: I8CH-13
Sample Date: 8/29/96
Laboratory ID: S685150E-2
QC Type: CS
% Moisture: 0
Location: I8CH-13

	RESULT	QUAL	UNITS
Aluminum	3.3	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	4.1		mg/kg
Barium	0.38	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	52900		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	9.2		mg/kg
Iron	27.4		mg/kg
Lead	0.37		mg/kg
Magnesium	1650		mg/kg
Manganese	14		mg/kg
Mercury	0.2		mg/kg
Nickel	1.2	U	mg/kg
Potassium	2890		mg/kg
Selenium	1	U	mg/kg
Silver	0.43	U	mg/kg
Sodium	4440		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	4.3		mg/kg
Zinc	41.9		mg/kg

Sample Number: I8CH-14
Sample Date: 8/29/96
Laboratory ID: S685150E-5
QC Type: CS
% Moisture: 0
Location: I8CH-14

	RESULT	QUAL	UN
Aluminum	6.1	U	mg
Antimony	2.4	U	mg
Arsenic	4.6		mg
Barium	0.55	U	mg
Beryllium	0.04	U	mg
Cadmium	0.53	U	mg
Calcium	3820		mg
Chromium	0.82	U	mg
Cobalt	0.37	U	mg
Copper	36.1		mg
Iron	49.7		mg
Lead	1.5		mg/
Magnesium	1950		mg/
Manganese	31.1		mg/
Mercury	0.08	U	mg/
Nickel	2.7	U	mg/
Potassium	3430		mg/
Selenium	1	U	mg/
Silver	0.31	U	mg/
Sodium	4570		mg/
Thallium	0.81	U	mg/
Vanadium	9.8		mg/
Zinc	50.5		mg/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

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INORGANICS

Sample Number: I8CH-15
Sample Date: 8/29/96
Laboratory ID: S685150E-6
QC Type: CS
% Moisture: 0
Location: I8CH-15

	RESULT	QUAL	UNITS
Aluminum	9.4	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	5.6		mg/kg
Barium	0.65	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	5320		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	44.6		mg/kg
Iron	124		mg/kg
Lead	1.6		mg/kg
Magnesium	3670		mg/kg
Manganese	30.3		mg/kg
Mercury	0.14		mg/kg
Nickel	2.2	U	mg/kg
Potassium	3760		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	5240		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	8.4		mg/kg
Zinc	150		mg/kg

Sample Number: I8CH-23
Sample Date: 8/29/96
Laboratory ID: S685150E-10
QC Type: CS
% Moisture: 0
Location: I8CH-23

	RESULT	QUAL	UNITS
Aluminum	17.6	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	9		mg/kg
Barium	1.7		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	6710		mg/kg
Chromium	1.2		mg/kg
Cobalt	0.49	U	mg/kg
Copper	305		mg/kg
Iron	2560		mg/kg
Lead	4.6		mg/kg
Magnesium	2210		mg/kg
Manganese	85.5		mg/kg
Mercury	0.09	U	mg/kg
Nickel	6.9		mg/kg
Potassium	3360		mg/kg
Selenium	1	U	mg/kg
Silver	1.2	U	mg/kg
Sodium	4800		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	29.2		mg/kg
Zinc	42.9		mg/kg

Sample Number: I8CH-24
Sample Date: 8/29/96
Laboratory ID: S685150E-13
QC Type: CS
% Moisture: 0
Location: I8CH-24

	RESULT	QUAL	UN
Aluminum	8.4	U	mg
Antimony	2.4	U	mg
Arsenic	5.1		mg
Barium	0.48	U	mg
Beryllium	0.04	U	mg
Cadmium	0.53	U	mg
Calcium	4540		mg
Chromium	0.82	U	mg
Cobalt	0.37	U	mg
Copper	30.5		mg
Iron	124		mg
Lead	1.2		mg/
Magnesium	2320		mg
Manganese	41.7		mg/
Mercury	0.22		mg/
Nickel	2.8	U	mg/
Potassium	2950		mg/
Selenium	1	U	mg/
Silver	0.26	U	mg/
Sodium	3550		mg/
Thallium	0.81	U	mg/
Vanadium	9		mg/
Zinc	149		mg/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

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INORGANICS

Sample Number: I8CH-25
Sample Date: 8/29/96
Laboratory ID: S685150E-14
QC Type: CS
% Moisture: 0
Location: I8CH-25

	RESULT	QUAL	UNITS
Aluminum	47.1		mg/kg
Antimony	2.4	U	mg/kg
Arsenic	6.8		mg/kg
Barium	1.3	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	9320		mg/kg
Chromium	1.6		mg/kg
Cobalt	0.37	U	mg/kg
Copper	36.4		mg/kg
Iron	1110		mg/kg
Lead	6		mg/kg
Magnesium	2750		mg/kg
Manganese	49.8		mg/kg
Mercury	0.22		mg/kg
Nickel	4.4	U	mg/kg
Potassium	3420		mg/kg
Selenium	1	U	mg/kg
Silver	0.57	U	mg/kg
Sodium	4560		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	14.2		mg/kg
Zinc	116		mg/kg

Sample Number: I8CH-26
Sample Date: 8/29/96
Laboratory ID: S685150E-15
QC Type: CS
% Moisture: 0
Location: I8CH-26

	RESULT	QUAL	UNITS
Aluminum	29.7		mg/kg
Antimony	2.4	U	mg/kg
Arsenic	5.2		mg/kg
Barium	3.8		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	65700		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	41.5		mg/kg
Iron	296		mg/kg
Lead	2		mg/kg
Magnesium	2420		mg/kg
Manganese	31.6		mg/kg
Mercury	0.11		mg/kg
Nickel	2.8	U	mg/kg
Potassium	2580		mg/kg
Selenium	1	U	mg/kg
Silver	0.26	U	mg/kg
Sodium	5360		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	11.6		mg/kg
Zinc	32.5		mg/kg

Sample Number: I8CH-27
Sample Date: 8/29/96
Laboratory ID: S685150E-16
QC Type: CS
% Moisture: 0
Location: I8CH-27

	RESULT	QUAL	UNI
Aluminum	14.2	U	mg/
Antimony	2.4	U	mg/
Arsenic	5.5		mg/
Barium	0.57	U	mg/
Beryllium	0.04	U	mg/
Cadmium	0.53	U	mg/
Calcium	3920		mg/
Chromium	0.82	U	mg/
Cobalt	0.37	U	mg/
Copper	62.9		mg/
Iron	453		mg/
Lead	2.9		mg/
Magnesium	2770		mg/
Manganese	76.9		mg/
Mercury	0.07	U	mg/
Nickel	4.6		mg/
Potassium	3280		mg/
Selenium	1	U	mg/
Silver	0.27	U	mg/
Sodium	3590		mg/
Thallium	0.81	U	mg/
Vanadium	16.4		mg/
Zinc	209		mg/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

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INORGANICS

Sample Number: I8CH-28
Sample Date: 8/29/96
Laboratory ID: S685150E-12
QC Type: CS
% Moisture: 0
Location: I8CH-28

	RESULT	QUAL	UNITS
Aluminum	12.2	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	7.7		mg/kg
Barium	1.1	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	6190		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	48.7		mg/kg
Iron	438		mg/kg
Lead	3.5		mg/kg
Magnesium	2490		mg/kg
Manganese	72		mg/kg
Mercury	0.15		mg/kg
Nickel	6		mg/kg
Potassium	2870		mg/kg
Selenium	1	U	mg/kg
Silver	0.32	U	mg/kg
Sodium	5060		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	25.6		mg/kg
Zinc	100		mg/kg

Sample Number: I8L-18
Sample Date: 8/29/96
Laboratory ID: S685150E-9
QC Type: CS
% Moisture: 0
Location: I8L-18

	RESULT	QUAL	UNITS
Aluminum	9.3	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	16.9		mg/kg
Barium	1.3	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	30600		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	56.4		mg/kg
Iron	19.8	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	3620		mg/kg
Manganese	1.8		mg/kg
Mercury	0.05	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2900		mg/kg
Selenium	1	U	mg/kg
Silver	0.61	U	mg/kg
Sodium	4120		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	24.4		mg/kg

ORGANIC DATA VALIDATION

INTERNAL CORRESPONDENCE

TO:	CHUCK BRYAN	DATE:	JANUARY 22, 1997
FROM:	EDWARD A. INABINETT	COPIES:	DV FILE

SUBJECT: ORGANIC DATA REVIEW - PEST/PCB
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG BR006

SAMPLES: 20/Tissue:

I8CH-12	I8CH-15	I8C-22	I8CH-27
I8CH-13	I8C-1	I8CH-28	I7L-3
I8CH-10	I8C-4	I8CH-24	B4C-6
I8CH-3	I8L-18	I8CH-25	B4C-5
I8CH-14	I8CH-23	I8CH-26	B4C-4

The sample set for the CTO 007 NAS Key West site, SDG BR006, consists of twenty (20) tissue environmental samples. All samples were analyzed for Target Compound List (TCL) pesticide/PCB organic compounds. The field crew designated sample I8C-22 for Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis.

The samples were collected by Brown and Root Environmental on August 29th, 1996 and analyzed by Savannah Laboratories & Environmental Services, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. Analyses were conducted using EPA SW-846 Method 8080 analytical and reporting protocols. The data were evaluated according to the following parameters:

- Holding times
- * Surrogate recoveries
- * Initial and continuing calibrations
- Laboratory and field blank analyses
- * Compound quantitation

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Pesticide/PCBs

Zero percent surrogate recovery for decachlorobiphenyl was reported in column 2 for sample I8CH-27. Column 1 for decachlorobiphenyl was reported as greater than five times the QC limit. Positive results for pesticide compounds in sample I8CH-27 estimated, "J". Nondetected results were considered unreliable and were rejected, "UR".

The continuing calibration %Ds for acroclor 1260 and chlorobenzilate were greater than 25%. Failure to meet this quality control criteria indicates that the laboratory's instruments could not achieve satisfactory sensitivity for these compounds, and therefore, the associated positive and nondetected results for these compounds could be compromised. No qualifying action was taken in this review.

The laboratory qualifier "P" was removed from all target compound data with a %D above 25% and less than 100% between positive results on columns 1 and 2.

All samples except I7L-3 and B4C-5 had high %Ds (greater than 100%) between positive results on columns 1 and 2 for several pesticide compounds. Positive results for these compounds were qualified as estimated "J" in these aforementioned samples.

The case narrative states that confirmation of certain compounds was not feasible due to coeluting matrix interference on one of the GC columns. Thus, the concentrations reported were based on quantitation from a single column. As a result, the concentrations for these compounds were qualified as estimated "J". This affected samples I8CH-12, I8CH-13, I8CH-10, I8CH-14, I8C-22, I8CH-28, I8CH-24, I8CH-25, I8CH-26, I8CH-27, B4C-6, and B4C-4.

No other problems were noted.

Additional Comments

None.

Executive Summary

Laboratory Performance: Zero percent surrogate recovery was reported for sample I8CH-27. The continuing calibration %Ds for acroclor 1260 and chlorobenzilate were greater than 25%.

Other Factors Affecting Data Quality: Several pesticide/PCB compounds had high %Ds between positive results on columns 1 and 2.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Brown and Root Environmental

Edward A. Inabinett
Engineer/Data Validator

for
Brown and Root Environmental

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

NAS KEY WEST

SDG BR006

TABLE 1 - RECOMMENDATION SUMMARY

Sample No.	PEST/PCB		
I8CH-12		$J^{3,4,8,14,18,31,32,39}$	
I8CH-13		$J^{4,8,16,19,31,32,37,39,40}$	
I8CH-10		$J^{3,4,8,9,18,19,25,28,31,32,39}$	
I8C-3		$J^{4,5,7,8,11,14,17,18,26}$	
I8CH-14		$J^{4,7,8,18,31,32,39}$	
I8CH-15		$J^{3,8,10,22,27,33,35,38}$	
I8C-1		$J^{6,7,8,9,15,20,24,26,34}$	
I8C-4		$J^{7,35}$	
I8L-18		$J^{7,11,21,22}$	
I8CH-23		$J^{2,4,7,13,18,27,34}$	
I8C-22		$J^{4,5,8,11,12,14,15,19,26,32}$	
I8CH-28		$J^{5,9,12,18,30,32,41}$	
I8CH-24		$J^{4,5,8,11,12,13,14,18,19,24,32}$	
I8CH-25		$J^{4,5,8,12,14,15,19,32}$	
I8CH-26		$J^{4,7,14,15,18,23,30,31,32,39}$	
I8CH-27		$J^{1,9,15,18,19,25,30,32,36,39}$	R^{1}
I7L-3			
B4C-6		$J^{4,29}$	
B4C-5		$J^{27,28,30}$	
B4C-4		$J^{4,6,7,8,11,12,15,18,40}$	

If the field is left blank, the qualifier is A - Accept all data.

J^{1} - Accept data, but qualify positive results for 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, chlorobenzilate, endosulfan II, endosulfan sulfate, endrin, endrin aldehyde, gamma-BHC, isodrin, and methoxychlor as estimated "J" as a result of a zero percent surrogate recovery for decachlorobiphenyl.

J^{2} - Accept data, but qualify positive results for 4,4'-DDT as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{3} - Accept data, but qualify positive results for gamma-BHC as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^4 - Accept data, but qualify positive results for heptachlor epoxide as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^5 - Accept data, but qualify positive results for endosulfan II as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^6 - Accept data, but qualify positive results for endrin as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^7 - Accept data, but qualify positive results for endrin aldehyde as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^8 - Accept data, but qualify positive results for chlorobenzilate as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^9 - Accept data, but qualify positive results for 4,4'-DDE as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{10} - Accept data, but qualify positive results for alpha-BHC as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{11} - Accept data, but qualify positive results for dieldrin as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{12} - Accept data, but qualify positive results for 4,4'-DDD as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{13} - Accept data, but qualify positive results for aldrin as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{14} - Accept data, but qualify positive results for endosulfan sulfate as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{15} - Accept data, but qualify positive results for methoxychlor as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{16} - Accept data, but qualify positive results for 4,4'-DDE as estimated "J" as a result of concentrations reported based on quantitation from a single column.

J^{17} - Accept data, but qualify positive results for delta-BHC as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{18} - Accept data, but qualify positive results for isodrin as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{19} - Accept data, but qualify positive results for endrin aldehyde as estimated "J" as a result of concentrations reported based on quantitation from a single column.

J^{20} - Accept data, but remove the laboratory qualifier "P" for endosulfan I as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{21} - Accept data, but remove the laboratory qualifier "P" for chlorobenzilate as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{22} - Accept data, but remove the laboratory qualifier "P" for endrin as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{23} - Accept data, but remove the laboratory qualifier "P" for 4,4'-DDE as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{24} - Accept data, but remove the laboratory qualifier "P" for 4,4'-DDT as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{25} - Accept data, but qualify positive results for 4,4'-DDT as estimated "J" as a result of concentrations reported based on quantitation from a single column.

J^{26} - Accept data, but remove the laboratory qualifier "P" for aldrin as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{27} - Accept data, but remove the laboratory qualifier "P" for 4,4'-DDD as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{28} - Accept data, but remove the laboratory qualifier "P" for endrin aldehyde as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{29} - Accept data, but remove the laboratory qualifier "P" for aroclor 1260 as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{30} - Accept data, but qualify positive results for chlorobenzilate as estimated "J" as a result of concentrations reported based on quantitation from a single column.

J^{31} - Accept data, but qualify positive results for 4,4'-DDD as estimated "J" as a result of concentrations reported based on quantitation from a single column.

J^{32} - Accept data, but qualify positive results for endrin as estimated "J" as a result of concentrations reported based on quantitation from a single column.

J^{33} - Accept data, but remove the laboratory qualifier "P" for isodrin as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{34} - Accept data, but remove the laboratory qualifier "P" for endosulfan II as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{35} - Accept data, but remove the laboratory qualifier "P" for heptachlor epoxide as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{36} - Accept data, but qualify positive results for gamma-BHC as estimated "J" as a result of concentrations reported based on quantitation from a single column.

J^{37} - Accept data, but qualify positive results for dieldrin as estimated "J" as a result of concentrations reported based on quantitation from a single column.

J^{38} - Accept data, but remove the laboratory qualifier "P" for dieldrin as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{39} - Accept data, but qualify positive results for endosulfan II as estimated "J" as a result of concentrations reported based on quantitation from a single column.

J^{40} - Accept data, but remove the laboratory qualifier "P" for gamma-BHC as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{41} - Accept data, but remove the laboratory qualifier "P" for methoxychlor as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

R^{1} - Reject, "UR" nondetected results for all pesticide compounds as a result of a zero percent surrogate recovery for decachlorobiphenyl.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR006

PESTICIDES/PCBs

Sample Number: B4C-4
Sample Date: 8/29/96
Laboratory ID: S685150E-20
QC Type: CS
% Moisture: 0
Location: B4C-4

	RESULT	QUAL	UNITS
4,4'-DDD	1.3	J	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	3.4		ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	55	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	2.3	J	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	1	J	ug/kg
Endrin aldehyde	1.4	J	ug/kg
gamma-BHC	4.3		ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	8.2	J	ug/kg
Isodrin	0.51	J	ug/kg
Methoxychlor	11	J	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B4C-5
Sample Date: 8/29/96
Laboratory ID: S685150E-19
QC Type: CS
% Moisture: 0
Location: B4C-5

	RESULT	QUAL	UNITS
4,4'-DDD	0.52	J	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	140	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	1.6	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B4C-6
Sample Date: 8/29/96
Laboratory ID: S685150E-18
QC Type: CS
% Moisture: 0
Location: B4C-6

	RESULT	QUAL	UNI
4,4'-DDD	3.3	U	ug/
4,4'-DDE	3.3	U	ug/
4,4'-DDT	3.3	U	ug/k
Aldrin	1.7	U	ug/k
alpha-BHC	1.7	U	ug/k
Aroclor-1016	33	U	ug/k
Aroclor-1221	67	U	ug/k
Aroclor-1232	33	U	ug/k
Aroclor-1242	33	U	ug/k
Aroclor-1248	33	U	ug/k
Aroclor-1254	33	U	ug/k
Aroclor-1260	280		ug/k
beta-BHC	1.7	U	ug/k
Chlordane	17	U	ug/k
Chlorobenzilate	17	U	ug/k
delta-BHC	1.7	U	ug/k
Dieldrin	3.3	U	ug/k
Endosulfan I	1.7	U	ug/k
Endosulfan II	3.3	U	ug/k
Endosulfan sulfate	3.3	U	ug/k
Endrin	3.3	U	ug/k
Endrin aldehyde	3.3	U	ug/k
gamma-BHC	1.7	U	ug/k
Heptachlor	1.7	U	ug/k
Heptachlor epoxide	0.37	J	ug/k
Isodrin	3.3	U	ug/k
Methoxychlor	17	U	ug/k
Toxaphene	170	U	ug/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR006

PESTICIDES/PCBs

Sample Number: I7L-3
Sample Date: 8/29/96
Laboratory ID: S685150E-17
QC Type: CS
% Moisture: 0
Location: I7L-3

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I8C-1
Sample Date: 8/29/96
Laboratory ID: S685150E-7
QC Type: CS
% Moisture: 0
Location: I8C-1

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	1.1	J	ug/kg
4,4'-DDT	3.2	J	ug/kg
Aldrin	0.41	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	86		ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	0.85	J	ug/kg
Endosulfan II	0.65	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.41	J	ug/kg
Endrin aldehyde	2.5	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	4.2	J	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I8C-22
Sample Date: 8/29/96
Laboratory ID: S685150E-11
QC Type: CS
% Moisture: 0
Location: I8C-22

	RESULT	QUAL	UNI
4,4'-DDD	1.3	J	ug/
4,4'-DDE	3.3	U	ug/
4,4'-DDT	3.3	U	ug/
Aldrin	0.72	J	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	33	U	ug/
beta-BHC	1.7	U	ug/
Chlordane	17	U	ug/
Chlorobenzilate	78	J	ug/
delta-BHC	1.7	U	ug/
Dieldrin	0.66	J	ug/
Endosulfan I	1.7	U	ug/
Endosulfan II	7.7	J	ug/
Endosulfan sulfate	1	J	ug/
Endrin	0.96	J	ug/
Endrin aldehyde	5.6	J	ug/
gamma-BHC	0.84	J	ug/
Heptachlor	1.7	U	ug/
Heptachlor epoxide	4.3	J	ug/
Isodrin	3.3	U	ug/
Methoxychlor	0.86	J	ug/
Toxaphene	170	U	ug/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR006

PESTICIDES/PCBs

Sample Number: I8C-3
Sample Date: 8/29/96
Laboratory ID: S685150E-4
QC Type: CS
% Moisture: 0
Location: I8C-3

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	0.52	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	54	J	ug/kg
delta-BHC	1.1	J	ug/kg
Dieldrin	0.5	J	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	4.7	J	ug/kg
Endosulfan sulfate	1.4	J	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	1.1	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	3.7	J	ug/kg
Isodrin	0.32	J	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I8C-4
Sample Date: 8/29/96
Laboratory ID: S685150E-8
QC Type: CS
% Moisture: 0
Location: I8C-4

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	1.7	J	ug/kg
4,4'-DDT	1.4	J	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	1	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	0.49	J	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I8CH-10
Sample Date: 8/29/96
Laboratory ID: S685150E-3
QC Type: CS
% Moisture: 0
Location: I8CH-10

	RESULT	QUAL	UNI
4,4'-DDD	3.2	J	ug/
4,4'-DDE	0.56	J	ug/
4,4'-DDT	0.57	J	ug/
Aldrin	1.7	U	ug/
alpha-BHC	0.72	J	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	33	U	ug/
beta-BHC	1.7	U	ug/
Chlordane	17	U	ug/
Chlorobenzilate	54	J	ug/
delta-BHC	1.7	U	ug/
Dieldrin	3.3	U	ug/
Endosulfan I	1.7	U	ug/
Endosulfan II	1.6	J	ug/
Endosulfan sulfate	0.6	J	ug/
Endrin	1.7	J	ug/
Endrin aldehyde	9.6		ug/
gamma-BHC	0.56	J	ug/
Heptachlor	1.7	U	ug/
Heptachlor epoxide	2.5	J	ug/
Isodrin	1.2	J	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/

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Sample Number: I8CH-12
Sample Date: 8/29/96
Laboratory ID: S685150E-1
QC Type: CS
% Moisture: 0
Location: I8CH-12

	RESULT	QUAL	UNITS
4,4'-DDD	3.2	J	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	47	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3	J	ug/kg
Endosulfan sulfate	0.88	J	ug/kg
Endrin	6.1	J	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1	J	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	0.69	J	ug/kg
Isodrin	0.49	J	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I8CH-13
Sample Date: 8/29/96
Laboratory ID: S685150E-2
QC Type: CS
% Moisture: 0
Location: I8CH-13

	RESULT	QUAL	UNITS
4,4'-DDD	2.4	J	ug/kg
4,4'-DDE	1.4	J	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	44		ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	1	J	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	1.8	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	2.4	J	ug/kg
Endrin aldehyde	6.1	J	ug/kg
gamma-BHC	0.86	J	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.5	J	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I8CH-14
Sample Date: 8/29/96
Laboratory ID: S685150E-5
QC Type: CS
% Moisture: 0
Location: I8CH-14

	RESULT	QUAL	UNIT
4,4'-DDD	1.9	J	ug/k
4,4'-DDE	16	U	ug/k
4,4'-DDT	16	U	ug/k
Aldrin	8.5	U	ug/k
alpha-BHC	8.5	U	ug/k
Aroclor-1016	160	U	ug/k
Aroclor-1221	340	U	ug/k
Aroclor-1232	160	U	ug/k
Aroclor-1242	160	U	ug/k
Aroclor-1248	160	U	ug/kg
Aroclor-1254	160	U	ug/kg
Aroclor-1260	160	U	ug/kg
beta-BHC	8.5	U	ug/kg
Chlordane	85	U	ug/kg
Chlorobenzilate	820	J	ug/kg
delta-BHC	8.5	U	ug/kg
Dieldrin	16	U	ug/kg
Endosulfan I	8.5	U	ug/kg
Endosulfan II	7	J	ug/kg
Endosulfan sulfate	16	U	ug/kg
Endrin	9	J	ug/kg
Endrin aldehyde	37	J	ug/kg
gamma-BHC	8.5	U	ug/kg
Heptachlor	4.5	J	ug/kg
Heptachlor epoxide	2.8	J	ug/kg
Isodrin	2.1	J	ug/kg
Methoxychlor	71	J	ug/kg
Toxaphene	850	U	ug/kg

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Sample Number: I8CH-15
Sample Date: 8/29/96
Laboratory ID: S685150E-6
QC Type: CS
% Moisture: 0
Location: I8CH-15

	RESULT	QUAL	UNITS
4,4'-DDD	2.6	J	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	0.58	J	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7		ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	24	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	4.9		ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	4.6		ug/kg
Endrin aldehyde	5.1		ug/kg
gamma-BHC	0.62	J	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.4	J	ug/kg
Isodrin	1.4	J	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I8CH-23
Sample Date: 8/29/96
Laboratory ID: S685150E-10
QC Type: CS
% Moisture: 0
Location: I8CH-23

	RESULT	QUAL	UNITS
4,4'-DDD	2.5	J	ug/kg
4,4'-DDE	3.6		ug/kg
4,4'-DDT	0.48	J	ug/kg
Aldrin	0.93	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	J	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	96		ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	2	J	ug/kg
Endosulfan sulfate	1.4	J	ug/kg
Endrin	1.5	J	ug/kg
Endrin aldehyde	1.3	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.9	J	ug/kg
Isodrin	1.1	J	ug/kg
Methoxychlor	3	J	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I8CH-24
Sample Date: 8/29/96
Laboratory ID: S685150E-13
QC Type: CS
% Moisture: 0
Location: I8CH-24

	RESULT	QUAL	UN
4,4'-DDD	12	J	ug
4,4'-DDE	3.3	U	ug
4,4'-DDT	2.1	J	ug
Aldrin	0.58	J	ug
alpha-BHC	1.7	U	ug
Aroclor-1016	33	U	ug
Aroclor-1221	67	U	ug
Aroclor-1232	33	U	ug
Aroclor-1242	33	U	ug
Aroclor-1248	33	U	ug
Aroclor-1254	33	U	ug
Aroclor-1260	33	U	ug
beta-BHC	2.5		ug
Chlordane	17	U	ug
Chlorobenzilate	330	J	ug
delta-BHC	1.7	U	ug
Dieldrin	2.4	J	ug
Endosulfan I	1.7	U	ug
Endosulfan II	5.4	J	ug
Endosulfan sulfate	2.2	J	ug
Endrin	7.3	J	ug
Endrin aldehyde	13	J	ug
gamma-BHC	1.7	U	ug
Heptachlor	1.7	U	ug
Heptachlor epoxide	3.2	J	ug
Isodrin	1.6	J	ug
Methoxychlor	17	U	ug
Toxaphene	170	U	ug

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Sample Number: I8CH-25
Sample Date: 8/29/96
Laboratory ID: S685150E-14
QC Type: CS
% Moisture: 0
Location: I8CH-25

	RESULT	QUAL	UNITS
4,4'-DDD	2.5	J	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	81	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	2.2	J	ug/kg
Endosulfan sulfate	1.3	J	ug/kg
Endrin	2.3	J	ug/kg
Endrin aldehyde	26	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	3.3	J	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	13	J	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I8CH-26
Sample Date: 8/29/96
Laboratory ID: S685150E-15
QC Type: CS
% Moisture: 0
Location: I8CH-26

	RESULT	QUAL	UNITS
4,4'-DDD	2.2	J	ug/kg
4,4'-DDE	1.5	J	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	55	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	1.8	J	ug/kg
Endosulfan sulfate	1.2	J	ug/kg
Endrin	2.4	J	ug/kg
Endrin aldehyde	5	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.8	J	ug/kg
Isodrin	1.5	J	ug/kg
Methoxychlor	11	J	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I8CH-27
Sample Date: 8/29/96
Laboratory ID: S685150E-16
QC Type: CS
% Moisture: 0
Location: I8CH-27

	RESULT	QUAL	UN
4,4'-DDD	2.9	J	ug
4,4'-DDE	2.7	J	ug
4,4'-DDT	1.3	J	ug/
Aldrin	1.7	UR	ug/
alpha-BHC	1.7	UR	ug/
Aroclor-1016	33	UR	ug/
Aroclor-1221	67	UR	ug/
Aroclor-1232	33	UR	ug/
Aroclor-1242	33	UR	ug/
Aroclor-1248	33	UR	ug/
Aroclor-1254	33	UR	ug/
Aroclor-1260	33	UR	ug/
beta-BHC	1.7	UR	ug/
Chlordane	17	UR	ug/
Chlorobenzilate	450	J	ug/
delta-BHC	1.7	UR	ug/
Dieldrin	3.3	UR	ug/
Endosulfan I	1.7	UR	ug/
Endosulfan II	1.6	J	ug/
Endosulfan sulfate	1.4	J	ug/
Endrin	3.9	J	ug/
Endrin aldehyde	33	J	ug/
gamma-BHC	2.1	J	ug/
Heptachlor	1.7	UR	ug/
Heptachlor epoxide	1.7	UR	ug/
Isodrin	2.4	J	ug/
Methoxychlor	23	J	ug/
Toxaphene	170	UR	ug/

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Sample Number: I8CH-28
Sample Date: 8/29/96
Laboratory ID: S685150E-12
QC Type: CS
% Moisture: 0
Location: I8CH-28

	RESULT	QUAL	UNITS
4,4'-DDD	2.7	J	ug/kg
4,4'-DDE	0.86	J	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	89	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	1.9	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	2.8	J	ug/kg
Endrin aldehyde	3.5	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	1.1	J	ug/kg
Methoxychlor	4.6	J	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I8L-18
Sample Date: 8/29/96
Laboratory ID: S685150E-9
QC Type: CS
% Moisture: 0
Location: I8L-18

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	15	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	0.57	J	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.37	J	ug/kg
Endrin aldehyde	1.3	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

ORGANIC DATA VALIDATION

TO:	**CHUCK BRYAN**	**DATE:**	**FEBRUARY 6, 1997**
FROM:	**R. MARTY RAY**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA REVIEW - SVOA ORGANICS**
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG BR007

SAMPLES: 16/Tissue:

S5F-9	S5F-10	S5F-11	S5F-12	S5F-13	S5F-14
S5F-15	S5F-16	S5F-17	S5F-18	S4F-6	S4F-9
S4F-10	S4F-11	S4F-12	S4F-13		

The sample set for the CTO 007 NAS Key West site, SDG BR007, consists of sixteen (16) tissue environmental samples. All samples were analyzed for Appendix IX semivolatile compounds.

The samples were collected by Brown and Root Environmental August 24th and 25th, 1996 and analyzed by General Engineering Laboratories, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Methods 8270 analytical and reporting protocols. The data were evaluated according to the following parameters:

- Holding times
- * Initial and continuing calibrations
- * Laboratory and field blank analyses
- * Surrogate spike recoveries
- Instrument Performance

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Semivolatiles

Surrogate percent recovery %R was reported below 10% in samples S5F-7, S5F-9, S5F-10, S5F-12, S5F-15, S5F-16, S5F-17, and S4F-13 for base/neutral compounds. Positive results for target compounds in these samples were qualified as estimated (J). Nondetected target compounds for the affected samples were qualified as unusable (UR).

The following semivolatile compounds were detected in the laboratory method blank at the maximum concentrations indicated below:

Compound	Maximum Concentration	Action Level
Diethylphthalate	170 µg/Kg	1700 µg/Kg
Di-n-Butylphthalate	57 µg/Kg	570 µg/Kg
bis(2-ethylhexyl)phthalate	320 µg/Kg	3200 µg/Kg

Samples Affected: S5F-9, S5F-12, S5F-13, S5F-14, and S4F-11

Positive results in the affected samples for these compounds reported at concentrations below the detection limit were replaced with revised detection limits and qualified nondetected (U). The positive results reported above the detection limit but below the action level were qualified as nondetected (U).

Benzoic Acid, 1,4-Phenylenediamine, Dinoseb, 4-Nitroquinoline-1-oxide, 3,3'-Dimethylbenzidine, 4-Chloroaniline, 3-Nitroaniline, 2,4-Dinitrophenol, Pentachlorophenol, Benzidine, and Benzo (K) Fluoroanthene report %D's in the initial calibration above 20%. This is not a major non-compliance and no action was taken.

2-Methylphenol, bis(2-Chloroisoprypol)ether, 4-Chloroaniline, Hexachlorocyclopentadiene, 3-Nitroaniline, Benzidine, 3,3'-Dichlorobenzidine, Phenacetin, n-Nitrosomethylethylamine, 1,3,5-Trinitrobenzene, 4-Nitroquinoline-1-oxide, Di-n-octylphthalate, and Pyridine report %D's in the continuing calibration above 25%. This is not a major non-compliance and no action was taken.

It was noted that the laboratory case narrative list sixteen samples in this SDG, however data for eighteen was reported. The data for all eighteen samples was reviewed in this package. The laboratory forwarded a revised case narrative to Brown & Root Environmental on February 7, 1997 which addressed the additional two samples.

It was noted that the laboratory case narrative identified eight samples with poor surrogate recoveries. The Form II included in this SDG also identified eight samples with poor surrogate recoveries. However the samples identified on the case narrative were not consistent with the Form II. The samples with the data reported on the Form II were qualified for poor surrogate recoveries. The laboratory forwarded a revised case narrative to Brown & Root Environmental on February 7, 1997 which identified the correct samples.

No other problems were noted.

Executive Summary

Laboratory Performance: Poor surrogate recoveries were reported for eight samples. Five samples were affected by blank contamination. Multiple compounds reported high %RSD's in the initial calibration. Multiple compounds reported high %D's in the continuing calibration. Inconsistencies were noted between the laboratory case narrative and the actual reported data.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Brown and Root Environmental

R. Marty Ray
Environmental Scientist/Data Validator

for
Brown & Root Environmental

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

NAS KEY WEST

SDG BR007

TABLE 1 - RECOMMENDATION SUMMARY

Sample No.	SVOA
S5F-7	R^1
S5F-8	
S5F-9	A^1R^1
S5F-10	R^1
S5F-11	
S5F-12	A^1R^1
S5F-13	A^2
S5F-14	A^1
S5F-15	R^1
S5F-16	R^1
S5F-17	R^1
S5F-18	
S4F-6	
S4F-9	
S4F-10	
S4F-11	A^1
S4F-12	
S4F-13	R^1

If the field is left blank, the qualifier is A - Accept all data.

A^1 - Accept data, but change positive results for bis(2-ethylhexyl)phthalate to a revised detection limit and qualify as nondetected (U), as result of laboratory method blank contamination.

A^2 - Accept data, but change positive results for Di-n-butylphthalate to a revised detection limit and qualify as nondetected (U), as result of laboratory method blank contamination

R^1 - Reject results reported for base/neutral compounds as unusable (UR), as result of poor surrogate recovery.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR007

SEMIVOLATILES

Sample Number: S4F-10
Sample Date: 8/24/96
Laboratory ID: S685150F-15
QC Type: CS
% Moisture: 0
Location: S4F-10

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	1400	U	ug/kg
1,2,4-Trichlorobenzene	1400	U	ug/kg
1,3,5-Trinitrobenzene	1400	U	ug/kg
1,4-Dioxane	1400	U	ug/kg
1,4-Naphthoquinone	1400	U	ug/kg
1-Naphthylamine	1400	U	ug/kg
2,3,4,6-Tetrachlorophenol	7300	U	ug/kg
2,4,5-Trichlorophenol	1400	U	ug/kg
2,4,6-Trichlorophenol	1400	U	ug/kg
2,4-Dichlorophenol	1400	U	ug/kg
2,4-Dimethylphenol	1400	U	ug/kg
2,4-Dinitrophenol	7300	U	ug/kg
2,4-Dinitrotoluene	1400	U	ug/kg
2,6-Dichlorophenol	1400	U	ug/kg
2,6-Dinitrotoluene	1400	U	ug/kg
2-Acetylaminofluorene	1400	U	ug/kg
2-Chloronaphthalene	1400	U	ug/kg
2-Chlorophenol	1400	U	ug/kg
2-Methylnaphthalene	1400	U	ug/kg
2-Naphthylamine	1400	U	ug/kg
2-Picoline	1400	U	ug/kg
3,3'-Dichlorobenzidine	2800	U	ug/kg
3,3'-Dimethylbenzidine	7300	U	ug/kg
3-Methylcholanthrene	1400	U	ug/kg
4,6-Dinitro-o-cresol	7300	U	ug/kg
4-Aminobiphenyl	1400	U	ug/kg
4-Bromophenyl phenyl ether	1400	U	ug/kg
4-Chlorophenylphenyl ether	1400	U	ug/kg
4-Nitroquinoline 1-oxide	14000	U	ug/kg
5-Nitro-o-toluidine	1400	U	ug/kg
7,12-dimethylbenz(a)anthracene	1400	U	ug/kg
a-a-Dimethylphenethylamine	7300	U	ug/kg
Acenaphthene	1400	U	ug/kg
Acenaphthylene	1400	U	ug/kg
Acetophenone	1400	U	ug/kg
Aniline	1400	U	ug/kg
Anthracene	1400	U	ug/kg
Aramite	1400	U	ug/kg
Benzo(a)anthracene	1400	U	ug/kg
Benzo(a)pyrene	1400	U	ug/kg
Benzo(b)fluoranthene	1400	U	ug/kg
Benzo(g,h,i)perylene	1400	U	ug/kg
Benzo(k)fluoranthene	1400	U	ug/kg
Benzyl alcohol	1400	U	ug/kg
Bis(2-chloroethoxy)methane	1400	U	ug/kg
Bis(2-chloroethyl)ether	1400	U	ug/kg
Bis(2-chloroisopropyl)ether	1400	U	ug/kg
Bis(2-ethylhexyl)phthalate	1400	U	ug/kg
Butylbenzylphthalate	1400	U	ug/kg
Chrysene	1400	U	ug/kg
Cresol	1400	U	ug/kg
Cresol, m & p	1400	U	ug/kg
Di-n-butylphthalate	1400	U	ug/kg
Di-n-octylphthalate	1400	U	ug/kg
Diallate	1400	U	ug/kg
Dibenzo(a,h)anthracene	1400	U	ug/kg
Dibenzofuran	1400	U	ug/kg
Diethylphthalate	1400	U	ug/kg
Dimethylphthalate	1400	U	ug/kg
Dinoseb	1400	U	ug/kg
Ethyl methanesulfonate	1400	U	ug/kg
Fluoranthene	1400	U	ug/kg
Fluorene	1400	U	ug/kg
Hexachlorobenzene	1400	U	ug/kg
Hexachlorobutadiene	1400	U	ug/kg
Hexachlorocyclopentadiene	1400	U	ug/kg
Hexachloroethane	1400	U	ug/kg
Hexachloropropene	1400	U	ug/kg
Indeno(1,2,3-cd)pyrene	1400	U	ug/kg
Isophorone	1400	U	ug/kg
Isosafrole	1400	U	ug/kg
Kepone	1400	U	ug/kg
m-Dichlorobenzene	1400	U	ug/kg
m-Dinitrobenzene	1400	U	ug/kg
m-Nitroaniline	7300	U	u
Methapyrilene	14000	U	u
Methyl methanesulfonate	1400	U	u
N-Nitrosodi-n-butylamine	1400	U	u
n-Nitrosodi-n-propylamine	1400	U	u
N-Nitrosodiethylamine	1400	U	u
N-Nitrosodimethylamine	1400	U	u
N-Nitrosodiphenylamine/Diphenylamine	1400	U	u
N-Nitrosomethylethylamine	1400	U	u
N-Nitrosomorpholine	1400	U	u
N-Nitrosopiperidine	1400	U	u
N-Nitrosopyrrolidine	1400	U	u
Naphthalene	1400	U	u
Nitrobenzene	1400	U	u
o,o,o-Triethyl phosphorothioate	1400	U	u
o-Dichlorobenzene	1400	U	u
o-Nitroaniline	7300	U	u
o-Nitrophenol	1400	U	u
o-Toluidine	1400	U	u
p-Chloro-m-cresol	1400	U	u
p-Chloroaniline	2800	U	u
p-Dichlorobenzene	1400	U	u
p-dimethylaminoazobenzene	1400	U	u
p-Nitroaniline	7300	U	u
p-Nitrophenol	7300	U	u
p-Phenylenediamine	7300	U	u
Pentachlorobenzene	1400	U	u
Pentachloronitrobenzene	1400	U	u
Pentachlorophenol	7300	U	u
Phenacetin	1400	U	u
Phenanthrene	1400	U	u
Phenol	1400	U	u
Pronamide	1400	U	u
Pyrene	1400	U	u
Pyridine	1400	U	u
Safrole	1400	U	u

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR007

SEMIVOLATILES

Sample Number: S4F-11
Sample Date: 8/24/96
Laboratory ID: S685150F-16
QC Type: CS
% Moisture: 0
Location: S4F-11

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	990	U	ug/kg
1,2,4-Trichlorobenzene	990	U	ug/kg
1,3,5-Trinitrobenzene	990	U	ug/kg
1,4-Dioxane	990	U	ug/kg
1,4-Naphthoquinone	990	U	ug/kg
1-Naphthylamine	990	U	ug/kg
2,3,4,6-Tetrachlorophenol	5100	U	ug/kg
2,4,5-Trichlorophenol	990	U	ug/kg
2,4,6-Trichlorophenol	990	U	ug/kg
2,4-Dichlorophenol	990	U	ug/kg
2,4-Dimethylphenol	990	U	ug/kg
2,4-Dinitrophenol	5100	U	ug/kg
2,4-Dinitrotoluene	990	U	ug/kg
2,6-Dichlorophenol	990	U	ug/kg
2,6-Dinitrotoluene	990	U	ug/kg
2-Acetylaminofluorene	990	U	ug/kg
2-Chloronaphthalene	990	U	ug/kg
2-Chlorophenol	990	U	ug/kg
2-Methylnaphthalene	990	U	ug/kg
2-Naphthylamine	990	U	ug/kg
2-Picoline	990	U	ug/kg
3,3'-Dichlorobenzidine	2000	U	ug/kg
3,3'-Dimethylbenzidine	5100	U	ug/kg
3-Methylcholanthrene	990	U	ug/kg
4,6-Dinitro-o-cresol	5100	U	ug/kg
4-Aminobiphenyl	990	U	ug/kg
4-Bromophenyl phenyl ether	990	U	ug/kg
4-Chlorophenylphenyl ether	990	U	ug/kg
4-Nitroquinoline 1-oxide	9900	U	ug/kg
5-Nitro-o-toluidine	990	U	ug/kg
7,12-dimethylbenz(a)anthracene	990	U	ug/kg
a-a-Dimethylphenethylamine	5100	U	ug/kg
Acenaphthene	990	U	ug/kg
Acenaphthylene	990	U	ug/kg
Acetophenone	990	U	ug/kg
Aniline	990	U	ug/kg
Anthracene	990	U	ug/kg
Aramite	990	U	ug/kg
Benzo(a)anthracene	990	U	ug/kg
Benzo(a)pyrene	990	U	ug/kg
Benzo(b)fluoranthene	990	U	ug/kg
Benzo(g,h,i)perylene	990	U	ug/kg
Benzo(k)fluoranthene	990	U	ug/kg
Benzyl alcohol	990	U	ug/kg
Bis(2-chloroethoxy)methane	990	U	ug/kg
Bis(2-chloroethyl)ether	990	U	ug/kg
Bis(2-chloroisopropyl)ether	990	U	ug/kg
Bis(2-ethylhexyl)phthalate	990	U	ug/kg
Butylbenzylphthalate	990	U	ug/kg
Chrysene	990	U	ug/kg
Cresol	990	U	ug/kg
Cresol, m & p	990	U	ug/kg
Di-n-butylphthalate	990	U	ug/kg
Di-n-octylphthalate	990	U	ug/kg
Diallate	990	U	ug/kg
Dibenzo(a,h)anthracene	990	U	ug/kg
Dibenzofuran	990	U	ug/kg
Diethylphthalate	990	U	ug/kg
Dimethylphthalate	990	U	ug/kg
Dinoseb	990	U	ug/kg
Ethyl methanesulfonate	990	U	ug/kg
Fluoranthene	990	U	ug/kg
Fluorene	990	U	ug/kg
Hexachlorobenzene	990	U	ug/kg
Hexachlorobutadiene	990	U	ug/kg
Hexachlorocyclopentadiene	990	U	ug/kg
Hexachloroethane	990	U	ug/kg
Hexachloropropene	990	U	ug/kg
Indeno(1,2,3-cd)pyrene	990	U	ug/kg
Isophorone	990	U	ug/kg
Isosafrole	990	U	ug/kg
Kepone	990	U	ug/kg
m-Dichlorobenzene	990	U	ug/kg
m-Dinitrobenzene	990	U	ug/kg
m-Nitroaniline	5100	U	ug/
Methapyrilene	9900	U	ug/
Methyl methanesulfonate	990	U	ug/
N-Nitrosodi-n-butylamine	990	U	ug/
n-Nitrosodi-n-propylamine	990	U	ug/
N-Nitrosodiethylamine	990	U	ug/
N-Nitrosodimethylamine	990	U	ug/
N-Nitrosodiphenylamine/Diphenylamine	990	U	ug/
N-Nitrosomethylethylamine	990	U	ug/
N-Nitrosomorpholine	990	U	ug/
N-Nitrosopiperidine	990	U	ug/
N-Nitrosopyrrolidine	990	U	ug/
Naphthalene	990	U	ug/
Nitrobenzene	990	U	ug/
o,o,o-Triethyl phosphorothioate	990	U	ug/
o-Dichlorobenzene	990	U	ug/k
o-Nitroaniline	5100	U	ug/k
o-Nitrophenol	990	U	ug/k
o-Toluidine	990	U	ug/k
p-Chloro-m-cresol	990	U	ug/k
p-Chloroaniline	2000	U	ug/k
p-Dichlorobenzene	990	U	ug/k
p-dimethylaminoazobenzene	990	U	ug/k
p-Nitroaniline	5100	U	ug/k
p-Nitrophenol	5100	U	ug/k
p-Phenylenediamine	5100	U	ug/k
Pentachlorobenzene	990	U	ug/k
Pentachloronitrobenzene	990	U	ug/k
Pentachlorophenol	5100	U	ug/k
Phenacetin	990	U	ug/k
Phenanthrene	990	U	ug/k
Phenol	990	U	ug/k
Pronamide	990	U	ug/k
Pyrene	990	U	ug/k
Pyridine	990	U	ug/k
Safrole	990	U	ug/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR007

SEMIVOLATILES

Sample Number: S4F-12
Sample Date: 8/25/96
Laboratory ID: S685150F-17
QC Type: CS
% Moisture: 0
Location: S4F-12

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	2500	U	ug/kg
1,2,4-Trichlorobenzene	2500	U	ug/kg
1,3,5-Trinitrobenzene	2500	U	ug/kg
1,4-Dioxane	2500	U	ug/kg
1,4-Naphthoquinone	2500	U	ug/kg
1-Naphthylamine	2500	U	ug/kg
2,3,4,6-Tetrachlorophenol	13000	U	ug/kg
2,4,5-Trichlorophenol	2500	U	ug/kg
2,4,6-Trichlorophenol	2500	U	ug/kg
2,4-Dichlorophenol	2500	U	ug/kg
2,4-Dimethylphenol	2500	U	ug/kg
2,4-Dinitrophenol	13000	U	ug/kg
2,4-Dinitrotoluene	2500	U	ug/kg
2,6-Dichlorophenol	2500	U	ug/kg
2,6-Dinitrotoluene	2500	U	ug/kg
2-Acetylaminofluorene	2500	U	ug/kg
2-Chloronaphthalene	2500	U	ug/kg
2-Chlorophenol	2500	U	ug/kg
2-Methylnaphthalene	2500	U	ug/kg
2-Naphthylamine	2500	U	ug/kg
2-Picoline	2500	U	ug/kg
3,3'-Dichlorobenzidine	5000	U	ug/kg
3,3'-Dimethylbenzidine	13000	U	ug/kg
3-Methylcholanthrene	2500	U	ug/kg
4,6-Dinitro-o-cresol	13000	U	ug/kg
4-Aminobiphenyl	2500	U	ug/kg
4-Bromophenyl phenyl ether	2500	U	ug/kg
4-Chlorophenylphenyl ether	2500	U	ug/kg
4-Nitroquinoline 1-oxide	25000	U	ug/kg
5-Nitro-o-toluidine	2500	U	ug/kg
7,12-dimethylbenz(a)anthracene	2500	U	ug/kg
a-a-Dimethylphenethylamine	13000	U	ug/kg
Acenaphthene	2500	U	ug/kg
Acenaphthylene	2500	U	ug/kg
Acetophenone	2500	U	ug/kg
Aniline	2500	U	ug/kg
Anthracene	2500	U	ug/kg
Aramite	2500	U	ug/kg
Benzo(a)anthracene	2500	U	ug/kg
Benzo(a)pyrene	2500	U	ug/kg
Benzo(b)fluoranthene	2500	U	ug/kg
Benzo(g,h,i)perylene	2500	U	ug/kg
Benzo(k)fluoranthene	2500	U	ug/kg
Benzyl alcohol	2500	U	ug/kg
Bis(2-chloroethoxy)methane	2500	U	ug/kg
Bis(2-chloroethyl)ether	2500	U	ug/kg
Bis(2-chloroisopropyl)ether	2500	U	ug/kg
Bis(2-ethylhexyl)phthalate	2500	U	ug/kg
Butylbenzylphthalate	2500	U	ug/kg
Chrysene	2500	U	ug/kg
Cresol	2500	U	ug/kg
Cresol, m & p	2500	U	ug/kg
Di-n-butylphthalate	2500	U	ug/kg
Di-n-octylphthalate	2500	U	ug/kg
Diallate	2500	U	ug/kg
Dibenzo(a,h)anthracene	2500	U	ug/kg
Dibenzofuran	2500	U	ug/kg
Diethylphthalate	2500	U	ug/kg
Dimethylphthalate	2500	U	ug/kg
Dinoseb	2500	U	ug/kg
Ethyl methanesulfonate	2500	U	ug/kg
Fluoranthene	2500	U	ug/kg
Fluorene	2500	U	ug/kg
Hexachlorobenzene	2500	U	ug/kg
Hexachlorobutadiene	2500	U	ug/kg
Hexachlorocyclopentadiene	2500	U	ug/kg
Hexachloroethane	2500	U	ug/kg
Hexachloropropene	2500	U	ug/kg
Indeno(1,2,3-cd)pyrene	2500	U	ug/kg
Isophorone	2500	U	ug/kg
Isosafrole	2500	U	ug/kg
Kepone	2500	U	ug/kg
m-Dichlorobenzene	2500	U	ug/kg
m-Dinitrobenzene	2500	U	ug/kg
m-Nitroaniline	13000	U	ug/k
Methapyrilene	25000	U	ug/k
Methyl methanesulfonate	2500	U	ug/k
N-Nitrosodi-n-butylamine	2500	U	ug/k
n-Nitrosodi-n-propylamine	2500	U	ug/k
N-Nitrosodiethylamine	2500	U	ug/k
N-Nitrosodimethylamine	2500	U	ug/k
N-Nitrosodiphenylamine/Diphenylamine	2500	U	ug/k
N-Nitrosomethylethylamine	2500	U	ug/k
N-Nitrosomorpholine	2500	U	ug/k
N-Nitrosopiperidine	2500	U	ug/k
N-Nitrosopyrrolidine	2500	U	ug/k
Naphthalene	2500	U	ug/k
Nitrobenzene	2500	U	ug/k
o,o,o-Triethyl phosphorothioate	2500	U	ug/k
o-Dichlorobenzene	2500	U	ug/k
o-Nitroaniline	13000	U	ug/k
o-Nitrophenol	2500	U	ug/k
o-Toluidine	2500	U	ug/k
p-Chloro-m-cresol	2500	U	ug/k
p-Chloroaniline	5000	U	ug/k
p-Dichlorobenzene	2500	U	ug/k
p-dimethylaminoazobenzene	2500	U	ug/k
p-Nitroaniline	13000	U	ug/k
p-Nitrophenol	13000	U	ug/k
p-Phenylenediamine	13000	U	ug/k
Pentachlorobenzene	2500	U	ug/k
Pentachloronitrobenzene	2500	U	ug/k
Pentachlorophenol	13000	U	ug/k
Phenacetin	2500	U	ug/k
Phenanthrene	2500	U	ug/k
Phenol	2500	U	ug/k
Pronamide	2500	U	ug/k
Pyrene	2500	U	ug/k
Pyridine	2500	U	ug/k
Safrole	2500	U	ug/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR007

SEMIVOLATILES

Sample Number: S4F-13
Sample Date: 8/25/96
Laboratory ID: S685150F-18
QC Type: CS
% Moisture: 0
Location: S4F-13

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	1200	UR	ug/kg
1,2,4-Trichlorobenzene	1200	UR	ug/kg
1,3,5-Trinitrobenzene	1200	UR	ug/kg
1,4-Dioxane	1200	UR	ug/kg
1,4-Naphthoquinone	1200	UR	ug/kg
1-Naphthylamine	1200	UR	ug/kg
2,3,4,6-Tetrachlorophenol	6400	U	ug/kg
2,4,5-Trichlorophenol	1200	U	ug/kg
2,4,6-Trichlorophenol	1200	U	ug/kg
2,4-Dichlorophenol	1200	U	ug/kg
2,4-Dimethylphenol	1200	U	ug/kg
2,4-Dinitrophenol	6400	U	ug/kg
2,4-Dinitrotoluene	1200	UR	ug/kg
2,6-Dichlorophenol	1200	U	ug/kg
2,6-Dinitrotoluene	1200	UR	ug/kg
2-Acetylaminofluorene	1200	UR	ug/kg
2-Chloronaphthalene	1200	UR	ug/kg
2-Chlorophenol	1200	U	ug/kg
2-Methylnaphthalene	1200	UR	ug/kg
2-Naphthylamine	1200	UR	ug/kg
2-Picoline	1200	UR	ug/kg
3,3'-Dichlorobenzidine	2500	UR	ug/kg
3,3'-Dimethylbenzidine	6400	UR	ug/kg
3-Methylcholanthrene	1200	UR	ug/kg
4,6-Dinitro-o-cresol	6400	UR	ug/kg
4-Aminobiphenyl	1200	UR	ug/kg
4-Bromophenyl phenyl ether	1200	UR	ug/kg
4-Chlorophenylphenyl ether	1200	UR	ug/kg
4-Nitroquinoline 1-oxide	12000	UR	ug/kg
5-Nitro-o-toluidine	1200	UR	ug/kg
7,12-dimethylbenz(a)anthracene	1200	UR	ug/kg
a-a-Dimethylphenethylamine	6400	UR	ug/kg
Acenaphthene	1200	UR	ug/kg
Acenaphthylene	1200	UR	ug/kg
Acetophenone	1200	UR	ug/kg
Aniline	1200	UR	ug/kg
Anthracene	1200	UR	ug/kg
Aramite	1200	UR	ug/kg
Benzo(a)anthracene	1200	UR	ug/kg
Benzo(a)pyrene	1200	UR	ug/kg
Benzo(b)fluoranthene	1200	UR	ug/kg
Benzo(g,h,i)perylene	1200	UR	ug/kg
Benzo(k)fluoranthene	1200	UR	ug/kg
Benzyl alcohol	1200	UR	ug/kg
Bis(2-chloroethoxy)methane	1200	UR	ug/kg
Bis(2-chloroethyl)ether	1200	UR	ug/kg
Bis(2-chloroisopropyl)ether	1200	UR	ug/kg
Bis(2-ethylhexyl)phthalate	1200	UR	ug/kg
Butylbenzylphthalate	1200	UR	ug/kg
Chrysene	1200	UR	ug/kg
Cresol	1200	UR	ug/kg
Cresol, m & p	1200	UR	ug/kg
Di-n-butylphthalate	1200	UR	ug/kg
Di-n-octylphthalate	1200	UR	ug/kg
Diallate	1200	UR	ug/kg
Dibenzo(a,h)anthracene	1200	UR	ug/kg
Dibenzofuran	1200	UR	ug/kg
Diethylphthalate	1200	UR	ug/kg
Dimethylphthalate	1200	UR	ug/kg
Dinoseb	1200	UR	ug/kg
Ethyl methanesulfonate	1200	UR	ug/kg
Fluoranthene	1200	UR	ug/kg
Fluorene	1200	UR	ug/kg
Hexachlorobenzene	1200	UR	ug/kg
Hexachlorobutadiene	1200	UR	ug/kg
Hexachlorocyclopentadiene	1200	UR	ug/kg
Hexachloroethane	1200	UR	ug/kg
Hexachloropropene	1200	UR	ug/kg
Indeno(1,2,3-cd)pyrene	1200	UR	ug/kg
Isophorone	1200	UR	ug/kg
Isosafrole	1200	UR	ug/kg
Kepone	1200	UR	ug/kg
m-Dichlorobenzene	1200	UR	ug/kg
m-Dinitrobenzene	1200	UR	ug/kg
m-Nitroaniline	6400	UR	ug/k
Methapyrilene	12000	UR	ug/k
Methyl methanesulfonate	1200	UR	ug/k
N-Nitrosodi-n-butylamine	1200	UR	ug/k
n-Nitrosodi-n-propylamine	1200	UR	ug/k
N-Nitrosodiethylamine	1200	UR	ug/k
N-Nitrosodimethylamine	1200	UR	ug/k
N-Nitrosodiphenylamine/Diphenylamine	1200	UR	ug/k
N-Nitrosomethylethylamine	1200	UR	ug/k
N-Nitrosomorpholine	1200	UR	ug/k
N-Nitrosopiperidine	1200	UR	ug/k
N-Nitrosopyrrolidine	1200	UR	ug/k
Naphthalene	1200	UR	ug/k
Nitrobenzene	1200	UR	ug/k
o,o,o-Triethyl phosphorothioate	1200	UR	ug/k
o-Dichlorobenzene	1200	UR	ug/k
o-Nitroaniline	6400	UR	ug/k
o-Nitrophenol	1200	U	ug/k
o-Toluidine	1200	UR	ug/k
p-Chloro-m-cresol	1200	UR	ug/k
p-Chloroaniline	2500	UR	ug/k
p-Dichlorobenzene	1200	UR	ug/k
p-dimethylaminoazobenzene	1200	UR	ug/k
p-Nitroaniline	6400	UR	ug/k
p-Nitrophenol	6400	U	ug/k
p-Phenylenediamine	6400	UR	ug/k
Pentachlorobenzene	1200	UR	ug/k
Pentachloronitrobenzene	1200	UR	ug/k
Pentachlorophenol	6400	U	ug/k
Phenacetin	1200	UR	ug/k
Phenanthrene	1200	UR	ug/k
Phenol	1200	U	ug/k
Pronamide	1200	UR	ug/k
Pyrene	1200	UR	ug/k
Pyridine	1200	UR	ug/k
Safrole	1200	UR	ug/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR007

SEMIVOLATILES

Sample Number: S4F-6
Sample Date: 8/24/96
Laboratory ID: S685150F-13
QC Type: CS
% Moisture: 0
Location: S4F-6

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	1400	U	ug/kg
1,2,4-Trichlorobenzene	1400	U	ug/kg
1,3,5-Trinitrobenzene	1400	U	ug/kg
1,4-Dioxane	1400	U	ug/kg
1,4-Naphthoquinone	1400	U	ug/kg
1-Naphthylamine	1400	U	ug/kg
2,3,4,6-Tetrachlorophenol	7300	U	ug/kg
2,4,5-Trichlorophenol	1400	U	ug/kg
2,4,6-Trichlorophenol	1400	U	ug/kg
2,4-Dichlorophenol	1400	U	ug/kg
2,4-Dimethylphenol	1400	U	ug/kg
2,4-Dinitrophenol	7300	U	ug/kg
2,4-Dinitrotoluene	1400	U	ug/kg
2,6-Dichlorophenol	1400	U	ug/kg
2,6-Dinitrotoluene	1400	U	ug/kg
2-Acetylaminofluorene	1400	U	ug/kg
2-Chloronaphthalene	1400	U	ug/kg
2-Chlorophenol	1400	U	ug/kg
2-Methylnaphthalene	1400	U	ug/kg
2-Naphthylamine	1400	U	ug/kg
2-Picoline	1400	U	ug/kg
3,3'-Dichlorobenzidine	2800	U	ug/kg
3,3'-Dimethylbenzidine	7300	U	ug/kg
3-Methylcholanthrene	1400	U	ug/kg
4,6-Dinitro-o-cresol	7300	U	ug/kg
4-Aminobiphenyl	1400	U	ug/kg
4-Bromophenyl phenyl ether	1400	U	ug/kg
4-Chlorophenylphenyl ether	1400	U	ug/kg
4-Nitroquinoline 1-oxide	14000	U	ug/kg
5-Nitro-o-toluidine	1400	U	ug/kg
7,12-dimethylbenz(a)anthracene	1400	U	ug/kg
a-a-Dimethylphenethylamine	7300	U	ug/kg
Acenaphthene	1400	U	ug/kg
Acenaphthylene	1400	U	ug/kg
Acetophenone	1400	U	ug/kg
Aniline	1400	U	ug/kg
Anthracene	1400	U	ug/kg
Aramite	1400	U	ug/kg
Benzo(a)anthracene	1400	U	ug/kg
Benzo(a)pyrene	1400	U	ug/kg
Benzo(b)fluoranthene	1400	U	ug/kg
Benzo(g,h,i)perylene	1400	U	ug/kg
Benzo(k)fluoranthene	1400	U	ug/kg
Benzyl alcohol	1400	U	ug/kg
Bis(2-chloroethoxy)methane	1400	U	ug/kg
Bis(2-chloroethyl)ether	1400	U	ug/kg
Bis(2-chloroisopropyl)ether	1400	U	ug/kg
Bis(2-ethylhexyl)phthalate	1400	U	ug/kg
Butylbenzylphthalate	1400	U	ug/kg
Chrysene	1400	U	ug/kg
Cresol	1400	U	ug/kg
Cresol, m & p	1400	U	ug/kg
Di-n-butylphthalate	1400	U	ug/kg
Di-n-octylphthalate	1400	U	ug/kg
Diallate	1400	U	ug/kg
Dibenzo(a,h)anthracene	1400	U	ug/kg
Dibenzofuran	1400	U	ug/kg
Diethylphthalate	1400	U	ug/kg
Dimethylphthalate	1400	U	ug/kg
Dinoseb	1400	U	ug/kg
Ethyl methanesulfonate	1400	U	ug/kg
Fluoranthene	1400	U	ug/kg
Fluorene	1400	U	ug/kg
Hexachlorobenzene	1400	U	ug/kg
Hexachlorobutadiene	1400	U	ug/kg
Hexachlorocyclopentadiene	1400	U	ug/kg
Hexachloroethane	1400	U	ug/kg
Hexachloropropene	1400	U	ug/kg
Indeno(1,2,3-cd)pyrene	1400	U	ug/kg
Isophorone	1400	U	ug/kg
Isosafrole	1400	U	ug/kg
Kepone	1400	U	ug/kg
m-Dichlorobenzene	1400	U	ug/kg
m-Dinitrobenzene	1400	U	ug/kg
m-Nitroaniline	7300	U	ug/
Methapyrilene	14000	U	ug/
Methyl methanesulfonate	1400	U	ug/
N-Nitrosodi-n-butylamine	1400	U	ug/
n-Nitrosodi-n-propylamine	1400	U	ug/
N-Nitrosodiethylamine	1400	U	ug/
N-Nitrosodimethylamine	1400	U	ug/
N-Nitrosodiphenylamine/Diphenylamine	1400	U	ug/
N-Nitrosomethylethylamine	1400	U	ug/
N-Nitrosomorpholine	1400	U	ug/
N-Nitrosopiperidine	1400	U	ug/
N-Nitrosopyrrolidine	1400	U	ug/
Naphthalene	1400	U	ug/
Nitrobenzene	1400	U	ug/
o,o,o-Triethyl phosphorothioate	1400	U	ug/
o-Dichlorobenzene	1400	U	ug/
o-Nitroaniline	7300	U	ug/
o-Nitrophenol	1400	U	ug/
o-Toluidine	1400	U	ug/
p-Chloro-m-cresol	1400	U	ug/
p-Chloroaniline	2800	U	ug/
p-Dichlorobenzene	1400	U	ug/
p-dimethylaminoazobenzene	1400	U	ug/
p-Nitroaniline	7300	U	ug/
p-Nitrophenol	7300	U	ug/
p-Phenylenediamine	7300	U	ug/
Pentachlorobenzene	1400	U	ug/
Pentachloronitrobenzene	1400	U	ug/
Pentachlorophenol	7300	U	ug/
Phenacetin	1400	U	ug/
Phenanthrene	1400	U	ug/
Phenol	1400	U	ug/
Pronamide	1400	U	ug/
Pyrene	1400	U	ug/
Pyridine	1400	U	ug/
Safrole	1400	U	ug/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR007

SEMIVOLATILES

Sample Number: S4F-9
Sample Date: 8/24/96
Laboratory ID: S685150F-14
QC Type: CS
% Moisture: 0
Location: S4F-9

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	1600	U	ug/kg
1,2,4-Trichlorobenzene	1600	U	ug/kg
1,3,5-Trinitrobenzene	1600	U	ug/kg
1,4-Dioxane	1600	U	ug/kg
1,4-Naphthoquinone	1600	U	ug/kg
1-Naphthylamine	1600	U	ug/kg
2,3,4,6-Tetrachlorophenol	8500	U	ug/kg
2,4,5-Trichlorophenol	1600	U	ug/kg
2,4,6-Trichlorophenol	1600	U	ug/kg
2,4-Dichlorophenol	1600	U	ug/kg
2,4-Dimethylphenol	1600	U	ug/kg
2,4-Dinitrophenol	8500	U	ug/kg
2,4-Dinitrotoluene	1600	U	ug/kg
2,6-Dichlorophenol	1600	U	ug/kg
2,6-Dinitrotoluene	1600	U	ug/kg
2-Acetylaminofluorene	1600	U	ug/kg
2-Chloronaphthalene	1600	U	ug/kg
2-Chlorophenol	1600	U	ug/kg
2-Methylnaphthalene	1600	U	ug/kg
2-Naphthylamine	1600	U	ug/kg
2-Picoline	1600	U	ug/kg
3,3'-Dichlorobenzidine	3300	U	ug/kg
3,3'-Dimethylbenzidine	8500	U	ug/kg
3-Methylcholanthrene	1600	U	ug/kg
4,6-Dinitro-o-cresol	8500	U	ug/kg
4-Aminobiphenyl	1600	U	ug/kg
4-Bromophenyl phenyl ether	1600	U	ug/kg
4-Chlorophenylphenyl ether	1600	U	ug/kg
4-Nitroquinoline 1-oxide	16000	U	ug/kg
5-Nitro-o-toluidine	1600	U	ug/kg
7,12-dimethylbenz(a)anthracene	1600	U	ug/kg
a-a-Dimethylphenethylamine	8500	U	ug/kg
·naphthene	1600	U	ug/kg
Acenaphthylene	1600	U	ug/kg
Acetophenone	1600	U	ug/kg
Aniline	1600	U	ug/kg
Anthracene	1600	U	ug/kg
Aramite	1600	U	ug/kg
Benzo(a)anthracene	1600	U	ug/kg
Benzo(a)pyrene	1600	U	ug/kg
Benzo(b)fluoranthene	1600	U	ug/kg
Benzo(g,h,i)perylene	1600	U	ug/kg
Benzo(k)fluoranthene	1600	U	ug/kg
Benzyl alcohol	1600	U	ug/kg
Bis(2-chloroethoxy)methane	1600	U	ug/kg
Bis(2-chloroethyl)ether	1600	U	ug/kg
Bis(2-chloroisopropyl)ether	1600	U	ug/kg
Bis(2-ethylhexyl)phthalate	1600	U	ug/kg
Butylbenzylphthalate	1600	U	ug/kg
Chrysene	1600	U	ug/kg
Cresol	1600	U	ug/kg
Cresol, m & p	1600	U	ug/kg
Di-n-butylphthalate	1600	U	ug/kg
Di-n-octylphthalate	1600	U	ug/kg
Diallate	1600	U	ug/kg
Dibenzo(a,h)anthracene	1600	U	ug/kg
Dibenzofuran	1600	U	ug/kg
Diethylphthalate	1600	U	ug/kg
Dimethylphthalate	1600	U	ug/kg
Dinoseb	1600	U	ug/kg
Ethyl methanesulfonate	1600	U	ug/kg
Fluoranthene	1600	U	ug/kg
Fluorene	1600	U	ug/kg
Hexachlorobenzene	1600	U	ug/kg
Hexachlorobutadiene	1600	U	ug/kg
Hexachlorocyclopentadiene	1600	U	ug/kg
Hexachloroethane	1600	U	ug/kg
Hexachloropropene	1600	U	ug/kg
Indeno(1,2,3-cd)pyrene	1600	U	ug/kg
Isophorone	1600	U	ug/kg
Isosafrole	1600	U	ug/kg
Kepone	1600	U	ug/kg
m-Dichlorobenzene	1600	U	ug/kg
m-Dinitrobenzene	1600	U	ug/kg
m-Nitroaniline	8500	U	ug/
Methapyrilene	16000	U	ug/
Methyl methanesulfonate	1600	U	ug/
N-Nitrosodi-n-butylamine	1600	U	ug/
n-Nitrosodi-n-propylamine	1600	U	ug/
N-Nitrosodiethylamine	1600	U	ug/
N-Nitrosodimethylamine	1600	U	ug/
N-Nitrosodiphenylamine/Diphenylamine	1600	U	ug/
N-Nitrosomethylethylamine	1600	U	ug/
N-Nitrosomorpholine	1600	U	ug
N-Nitrosopiperidine	1600	U	ug
N-Nitrosopyrrolidine	1600	U	ug/
Naphthalene	1600	U	ug/
Nitrobenzene	1600	U	ug/
o,o,o-Triethyl phosphorothioate	1600	U	ug/
o-Dichlorobenzene	1600	U	ug/
o-Nitroaniline	8500	U	ug/
o-Nitrophenol	1600	U	ug/
o-Toluidine	1600	U	ug/
p-Chloro-m-cresol	1600	U	ug/
p-Chloroaniline	3300	U	ug/
p-Dichlorobenzene	1600	U	ug
p-dimethylaminoazobenzene	1600	U	ug
p-Nitroaniline	8500	U	ug
p-Nitrophenol	8500	U	ug
p-Phenylenediamine	8500	U	ug
Pentachlorobenzene	1600	U	ug
Pentachloronitrobenzene	1600	U	ug
Pentachlorophenol	8500	U	ug
Phenacetin	1600	U	ug
Phenanthrene	1600	U	ug
Phenol	1600	U	ug
Pronamide	1600	U	ug
Pyrene	430	J	ug
Pyridine	1600	U	ug
Safrole	1600	U	ug

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR007

SEMIVOLATILES

Sample Number: S5F-10
Sample Date: 8/29/96
Laboratory ID: S685150F-4
QC Type: CS
% Moisture: 0
Location: S5F-10

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	990	UR	ug/kg
1,2,4-Trichlorobenzene	990	UR	ug/kg
1,3,5-Trinitrobenzene	990	UR	ug/kg
1,4-Dioxane	990	UR	ug/kg
1,4-Naphthoquinone	990	UR	ug/kg
1-Naphthylamine	990	UR	ug/kg
2,3,4,6-Tetrachlorophenol	5100	U	ug/kg
2,4,5-Trichlorophenol	990	U	ug/kg
2,4,6-Trichlorophenol	990	U	ug/kg
2,4-Dichlorophenol	990	U	ug/kg
2,4-Dimethylphenol	990	U	ug/kg
2,4-Dinitrophenol	5100	U	ug/kg
2,4-Dinitrotoluene	990	UR	ug/kg
2,6-Dichlorophenol	990	U	ug/kg
2,6-Dinitrotoluene	990	UR	ug/kg
2-Acetylaminofluorene	990	UR	ug/kg
2-Chloronaphthalene	990	UR	ug/kg
2-Chlorophenol	990	U	ug/kg
2-Methylnaphthalene	990	UR	ug/kg
2-Naphthylamine	990	UR	ug/kg
2-Picoline	990	UR	ug/kg
3,3'-Dichlorobenzidine	2000	UR	ug/kg
3,3'-Dimethylbenzidine	5100	UR	ug/kg
3-Methylcholanthrene	990	UR	ug/kg
4,6-Dinitro-o-cresol	5100	UR	ug/kg
4-Aminobiphenyl	990	UR	ug/kg
4-Bromophenyl phenyl ether	990	UR	ug/kg
4-Chlorophenylphenyl ether	990	UR	ug/kg
4-Nitroquinoline 1-oxide	9900	UR	ug/kg
5-Nitro-o-toluidine	990	UR	ug/kg
7,12-dimethylbenz(a)anthracene	990	UR	ug/kg
a-a-Dimethylphenethylamine	5100	UR	ug/kg
Acenaphthene	990	UR	ug/kg
Acenaphthylene	990	UR	ug/kg
Acetophenone	990	UR	ug/kg
Aniline	990	UR	ug/kg
Anthracene	990	UR	ug/kg
Aramite	990	UR	ug/kg
Benzo(a)anthracene	990	UR	ug/kg
Benzo(a)pyrene	990	UR	ug/kg
Benzo(b)fluoranthene	990	UR	ug/kg
Benzo(g,h,i)perylene	990	UR	ug/kg
Benzo(k)fluoranthene	990	UR	ug/kg
Benzyl alcohol	990	UR	ug/kg
Bis(2-chloroethoxy)methane	990	UR	ug/kg
Bis(2-chloroethyl)ether	990	UR	ug/kg
Bis(2-chloroisopropyl)ether	990	UR	ug/kg
Bis(2-ethylhexyl)phthalate	990	UR	ug/kg
Butylbenzylphthalate	990	UR	ug/kg
Chrysene	990	UR	ug/kg
Cresol	990	UR	ug/kg
Cresol, m & p	990	UR	ug/kg
Di-n-butylphthalate	990	UR	ug/kg
Di-n-octylphthalate	990	UR	ug/kg
Diallate	990	UR	ug/kg
Dibenzo(a,h)anthracene	990	UR	ug/kg
Dibenzofuran	990	UR	ug/kg
Diethylphthalate	990	UR	ug/kg
Dimethylphthalate	990	UR	ug/kg
Dinoseb	990	UR	ug/kg
Ethyl methanesulfonate	990	UR	ug/kg
Fluoranthene	990	UR	ug/kg
Fluorene	990	UR	ug/kg
Hexachlorobenzene	990	UR	ug/kg
Hexachlorobutadiene	990	UR	ug/kg
Hexachlorocyclopentadiene	990	UR	ug/kg
Hexachloroethane	990	UR	ug/kg
Hexachloropropene	990	UR	ug/kg
Indeno(1,2,3-cd)pyrene	990	UR	ug/kg
Isophorone	990	UR	ug/kg
Isosafrole	990	UR	ug/kg
Kepone	990	UR	ug/kg
m-Dichlorobenzene	990	UR	ug/kg
m-Dinitrobenzene	990	UR	ug/kg
m-Nitroaniline	5100	UR	ug/
Methapyrilene	9900	UR	ug/
Methyl methanesulfonate	990	UR	ug/
N-Nitrosodi-n-butylamine	990	UR	ug/
n-Nitrosodi-n-propylamine	990	UR	ug
N-Nitrosodiethylamine	990	UR	ug
N-Nitrosodimethylamine	990	UR	ug
N-Nitrosomethylethylamine	990	UR	ug
N-Nitrosomorpholine	990	UR	ug
N-Nitrosopiperidine	990	UR	ug
N-Nitrosopyrrolidine	990	UR	ug
Naphthalene	990	UR	ug
Nitrobenzene	990	UR	ug
o,o,o-Triethyl phosphorothioate	990	UR	ug
o-Dichlorobenzene	990	UR	ug
o-Nitroaniline	5100	UR	ug
o-Nitrophenol	990	U	ug
o-Toluidine	990	UR	ug
p-Chloro-m-cresol	990	UR	ug
p-Chloroaniline	2000	UR	ug
p-Dichlorobenzene	990	UR	ug
p-dimethylaminoazobenzene	990	UR	ug
p-Nitroaniline	5100	UR	ug
p-Nitrophenol	5100	U	ug
p-Phenylenediamine	5100	UR	ug
Pentachlorobenzene	990	UR	ug
Pentachloronitrobenzene	990	UR	ug
Pentachlorophenol	5100	U	ug
Phenacetin	990	UR	ug
Phenanthrene	990	UR	ug
Phenol	990	U	ug
Pronamide	990	UR	ug
Pyrene	990	UR	ug
Pyridine	990	UR	ug
Safrole	990	UR	ug

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR007

SEMIVOLATILES

Sample Number: S5F-11
Sample Date: 8/29/96
Laboratory ID: S685150F-5
QC Type: CS
% Moisture: 0
Location: S5F-11

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	900	U	ug/kg
1,2,4-Trichlorobenzene	900	U	ug/kg
1,3,5-Trinitrobenzene	900	U	ug/kg
1,4-Dioxane	900	U	ug/kg
1,4-Naphthoquinone	900	U	ug/kg
1-Naphthylamine	900	U	ug/kg
2,3,4,6-Tetrachlorophenol	4600	U	ug/kg
2,4,5-Trichlorophenol	900	U	ug/kg
2,4,6-Trichlorophenol	900	U	ug/kg
2,4-Dichlorophenol	900	U	ug/kg
2,4-Dimethylphenol	900	U	ug/kg
2,4-Dinitrophenol	4600	U	ug/kg
2,4-Dinitrotoluene	900	U	ug/kg
2,6-Dichlorophenol	900	U	ug/kg
2,6-Dinitrotoluene	900	U	ug/kg
2-Acetylaminofluorene	900	U	ug/kg
2-Chloronaphthalene	900	U	ug/kg
2-Chlorophenol	900	U	ug/kg
2-Methylnaphthalene	900	U	ug/kg
2-Naphthylamine	900	U	ug/kg
2-Picoline	900	U	ug/kg
3,3'-Dichlorobenzidine	1800	U	ug/kg
3,3'-Dimethylbenzidine	4600	U	ug/kg
3-Methylcholanthrene	900	U	ug/kg
4,6-Dinitro-o-cresol	4600	U	ug/kg
4-Aminobiphenyl	900	U	ug/kg
4-Bromophenyl phenyl ether	900	U	ug/kg
4-Chlorophenylphenyl ether	900	U	ug/kg
4-Nitroquinoline 1-oxide	9000	U	ug/kg
5-Nitro-o-toluidine	900	U	ug/kg
7,12-dimethylbenz(a)anthracene	900	U	ug/kg
a-a-Dimethylphenethylamine	4600	U	ug/kg
Acenaphthene	900	U	ug/kg
Acenaphthylene	900	U	ug/kg
Acetophenone	900	U	ug/kg
Aniline	900	U	ug/kg
Anthracene	900	U	ug/kg
Aramite	900	U	ug/kg
Benzo(a)anthracene	900	U	ug/kg
Benzo(a)pyrene	900	U	ug/kg
Benzo(b)fluoranthene	900	U	ug/kg
Benzo(g,h,i)perylene	900	U	ug/kg
Benzo(k)fluoranthene	900	U	ug/kg
Benzyl alcohol	900	U	ug/kg
Bis(2-chloroethoxy)methane	900	U	ug/kg
Bis(2-chloroethyl)ether	900	U	ug/kg
Bis(2-chloroisopropyl)ether	900	U	ug/kg
Bis(2-ethylhexyl)phthalate	900	U	ug/kg
Butylbenzylphthalate	900	U	ug/kg
Chrysene	900	U	ug/kg
Cresol	900	U	ug/kg
Cresol, m & p	900	U	ug/kg
Di-n-butylphthalate	900	U	ug/kg
Di-n-octylphthalate	900	U	ug/kg
Diallate	900	U	ug/kg
Dibenzo(a,h)anthracene	900	U	ug/kg
Dibenzofuran	900	U	ug/kg
Diethylphthalate	900	U	ug/kg
Dimethylphthalate	900	U	ug/kg
Dinoseb	900	U	ug/kg
Ethyl methanesulfonate	900	U	ug/kg
Fluoranthene	900	U	ug/kg
Fluorene	900	U	ug/kg
Hexachlorobenzene	900	U	ug/kg
Hexachlorobutadiene	900	U	ug/kg
Hexachlorocyclopentadiene	900	U	ug/kg
Hexachloroethane	900	U	ug/kg
Hexachloropropene	900	U	ug/kg
Indeno(1,2,3-cd)pyrene	900	U	ug/kg
Isophorone	900	U	ug/kg
Isosafrole	900	U	ug/kg
Kepone	900	U	ug/kg
m-Dichlorobenzene	900	U	ug/kg
m-Dinitrobenzene	900	U	ug/kg
m-Nitroaniline	4600	U	ug/k
Methapyrilene	9000	U	ug/k
Methyl methanesulfonate	900	U	ug/k
N-Nitrosodi-n-butylamine	900	U	ug/k
n-Nitrosodi-n-propylamine	900	U	ug/k
N-Nitrosodiethylamine	900	U	ug/k
N-Nitrosodimethylamine	900	U	ug/k
N-Nitrosomethylethylamine	900	U	ug/k
N-Nitrosomorpholine	900	U	ug/k
N-Nitrosopiperidine	900	U	ug/k
N-Nitrosopyrrolidine	900	U	ug/k
Naphthalene	900	U	ug/k
Nitrobenzene	900	U	ug/k
o,o,o-Triethyl phosphorothioate	900	U	ug/k
o-Dichlorobenzene	900	U	ug/k
o-Nitroaniline	4600	U	ug/k
o-Nitrophenol	900	U	ug/k
o-Toluidine	900	U	ug/k
p-Chloro-m-cresol	900	U	ug/k
p-Chloroaniline	1800	U	ug/k
p-Dichlorobenzene	900	U	ug/k
p-dimethylaminoazobenzene	900	U	ug/k
p-Nitroaniline	4600	U	ug/k
p-Nitrophenol	4600	U	ug/k
p-Phenylenediamine	4600	U	ug/k
Pentachlorobenzene	900	U	ug/k
Pentachloronitrobenzene	900	U	ug/k
Pentachlorophenol	4600	U	ug/k
Phenacetin	900	U	ug/k
Phenanthrene	900	U	ug/k
Phenol	900	U	ug/k
Pronamide	900	U	ug/k
Pyrene	900	U	ug/k
Pyridine	900	U	ug/k
Safrole	900	U	ug/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR007

SEMIVOLATILES

Sample Number: S5F-12
Sample Date: 8/29/96
Laboratory ID: S685150F-6
QC Type: CS
% Moisture: 0
Location: S5F-12

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	760	UR	ug/kg
1,2,4-Trichlorobenzene	760	UR	ug/kg
1,3,5-Trinitrobenzene	760	UR	ug/kg
1,4-Dioxane	760	UR	ug/kg
1,4-Naphthoquinone	760	UR	ug/kg
1-Naphthylamine	760	UR	ug/kg
2,3,4,6-Tetrachlorophenol	3900	U	ug/kg
2,4,5-Trichlorophenol	760	U	ug/kg
2,4,6-Trichlorophenol	760	U	ug/kg
2,4-Dichlorophenol	760	U	ug/kg
2,4-Dimethylphenol	760	U	ug/kg
2,4-Dinitrophenol	3900	U	ug/kg
2,4-Dinitrotoluene	760	UR	ug/kg
2,6-Dichlorophenol	760	U	ug/kg
2,6-Dinitrotoluene	760	UR	ug/kg
2-Acetylaminofluorene	760	UR	ug/kg
2-Chloronaphthalene	760	UR	ug/kg
2-Chlorophenol	760	U	ug/kg
2-Methylnaphthalene	760	UR	ug/kg
2-Naphthylamine	760	UR	ug/kg
2-Picoline	760	UR	ug/kg
3,3'-Dichlorobenzidine	1500	UR	ug/kg
3,3'-Dimethylbenzidine	3900	UR	ug/kg
3-Methylcholanthrene	760	UR	ug/kg
4,6-Dinitro-o-cresol	3900	UR	ug/kg
4-Aminobiphenyl	760	UR	ug/kg
4-Bromophenyl phenyl ether	760	UR	ug/kg
4-Chlorophenylphenyl ether	760	UR	ug/kg
4-Nitroquinoline 1-oxide	7600	UR	ug/kg
5-Nitro-o-toluidine	760	UR	ug/kg
7,12-dimethylbenz(a)anthracene	760	UR	ug/kg
a-a-Dimethylphenethylamine	3900	UR	ug/kg
Acenaphthene	760	UR	ug/kg
Acenaphthylene	760	UR	ug/kg
Acetophenone	760	UR	ug/kg
Aniline	760	UR	ug/kg
Anthracene	760	UR	ug/kg
Aramite	760	UR	ug/kg
Benzo(a)anthracene	760	UR	ug/kg
Benzo(a)pyrene	760	UR	ug/kg
Benzo(b)fluoranthene	760	UR	ug/kg
Benzo(g,h,i)perylene	760	UR	ug/kg
Benzo(k)fluoranthene	760	UR	ug/kg
Benzyl alcohol	760	UR	ug/kg
Bis(2-chloroethoxy)methane	760	UR	ug/kg
Bis(2-chloroethyl)ether	760	UR	ug/kg
Bis(2-chloroisopropyl)ether	760	UR	ug/kg
Bis(2-ethylhexyl)phthalate	760	UR	ug/kg
Butylbenzylphthalate	760	UR	ug/kg
Chrysene	760	UR	ug/kg
Cresol	760	UR	ug/kg
Cresol, m & p	760	UR	ug/kg
Di-n-butylphthalate	760	UR	ug/kg
Di-n-octylphthalate	760	UR	ug/kg
Diallate	760	UR	ug/kg
Dibenzo(a,h)anthracene	760	UR	ug/kg
Dibenzofuran	760	UR	ug/kg
Diethylphthalate	760	UR	ug/kg
Dimethylphthalate	760	UR	ug/kg
Dinoseb	760	UR	ug/kg
Ethyl methanesulfonate	760	UR	ug/kg
Fluoranthene	760	UR	ug/kg
Fluorene	760	UR	ug/kg
Hexachlorobenzene	760	UR	ug/kg
Hexachlorobutadiene	760	UR	ug/kg
Hexachlorocyclopentadiene	760	UR	ug/kg
Hexachloroethane	760	UR	ug/kg
Hexachloropropene	760	UR	ug/kg
Indeno(1,2,3-cd)pyrene	760	UR	ug/kg
Isophorone	760	UR	ug/kg
Isosafrole	760	UR	ug/kg
Kepone	760	UR	ug/kg
m-Dichlorobenzene	760	UR	ug/kg
m-Dinitrobenzene	760	UR	ug/kg
m-Nitroaniline	3900	UR	ug/k
Methapyrilene	7600	UR	ug/k
Methyl methanesulfonate	760	UR	ug/k
N-Nitrosodi-n-butylamine	760	UR	ug/k
n-Nitrosodi-n-propylamine	760	UR	ug/k
N-Nitrosodiethylamine	760	UR	ug/k
N-Nitrosodimethylamine	760	UR	ug/k
N-Nitrosomethylethylamine	760	UR	ug/k
N-Nitrosomorpholine	760	UR	ug/k
N-Nitrosopiperidine	760	UR	ug/k
N-Nitrosopyrrolidine	760	UR	ug/k
Naphthalene	760	UR	ug/k
Nitrobenzene	760	UR	ug/k
o,o,o-Triethyl phosphorothioate	760	UR	ug/k
o-Dichlorobenzene	760	UR	ug/k
o-Nitroaniline	3900	UR	ug/k
o-Nitrophenol	760	U	ug/k
o-Toluidine	760	UR	ug/k
p-Chloro-m-cresol	760	UR	ug/k
p-Chloroaniline	1500	UR	ug/k
p-Dichlorobenzene	760	UR	ug/k
p-dimethylaminoazobenzene	760	UR	ug/k
p-Nitroaniline	3900	UR	ug/k
p-Nitrophenol	3900	U	ug/k
p-Phenylenediamine	3900	UR	ug/k
Pentachlorobenzene	760	UR	ug/k
Pentachloronitrobenzene	760	UR	ug/k
Pentachlorophenol	3900	U	ug/k
Phenacetin	760	UR	ug/k
Phenanthrene	760	UR	ug/k
Phenol	760	U	ug/k
Pronamide	760	UR	ug/k
Pyrene	760	UR	ug/k
Pyridine	760	UR	ug/k
Safrole	760	UR	ug/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR007

SEMIVOLATILES

Sample Number: S5F-13
Sample Date: 8/29/96
Laboratory ID: S685150F-7
QC Type: CS
% Moisture: 0
Location: S5F-13

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	990	U	ug/kg
1,2,4-Trichlorobenzene	990	U	ug/kg
1,3,5-Trinitrobenzene	990	U	ug/kg
1,4-Dioxane	990	U	ug/kg
1,4-Naphthoquinone	990	U	ug/kg
1-Naphthylamine	990	U	ug/kg
2,3,4,6-Tetrachlorophenol	5100	U	ug/kg
2,4,5-Trichlorophenol	990	U	ug/kg
2,4,6-Trichlorophenol	990	U	ug/kg
2,4-Dichlorophenol	990	U	ug/kg
2,4-Dimethylphenol	990	U	ug/kg
2,4-Dinitrophenol	5100	U	ug/kg
2,4-Dinitrotoluene	990	U	ug/kg
2,6-Dichlorophenol	990	U	ug/kg
2,6-Dinitrotoluene	990	U	ug/kg
2-Acetylaminofluorene	990	U	ug/kg
2-Chloronaphthalene	990	U	ug/kg
2-Chlorophenol	990	U	ug/kg
2-Methylnaphthalene	990	U	ug/kg
2-Naphthylamine	990	U	ug/kg
2-Picoline	990	U	ug/kg
3,3'-Dichlorobenzidine	2000	U	ug/kg
3,3'-Dimethylbenzidine	5100	U	ug/kg
3-Methylcholanthrene	990	U	ug/kg
4,6-Dinitro-o-cresol	5100	U	ug/kg
4-Aminobiphenyl	990	U	ug/kg
4-Bromophenyl phenyl ether	990	U	ug/kg
4-Chlorophenylphenyl ether	990	U	ug/kg
4-Nitroquinoline 1-oxide	9900	U	ug/kg
5-Nitro-o-toluidine	990	U	ug/kg
7,12-dimethylbenz(a)anthracene	990	U	ug/kg
a-a-Dimethylphenethylamine	5100	U	ug/kg
Acenaphthene	990	U	ug/kg
Acenaphthylene	990	U	ug/kg
Acetophenone	990	U	ug/kg
Aniline	990	U	ug/kg
Anthracene	990	U	ug/kg
Aramite	990	U	ug/kg
Benzo(a)anthracene	990	U	ug/kg
Benzo(a)pyrene	990	U	ug/kg
Benzo(b)fluoranthene	990	U	ug/kg
Benzo(g,h,i)perylene	990	U	ug/kg
Benzo(k)fluoranthene	990	U	ug/kg
Benzyl alcohol	990	U	ug/kg
Bis(2-chloroethoxy)methane	990	U	ug/kg
Bis(2-chloroethyl)ether	990	U	ug/kg
Bis(2-chloroisopropyl)ether	990	U	ug/kg
Bis(2-ethylhexyl)phthalate	990	U	ug/kg
Butylbenzylphthalate	990	U	ug/kg
Chrysene	990	U	ug/kg
Cresol	990	U	ug/kg
Cresol, m & p	990	U	ug/kg
Di-n-butylphthalate	920	U	ug/kg
Di-n-octylphthalate	990	U	ug/kg
Diallate	990	U	ug/kg
Dibenzo(a,h)anthracene	990	U	ug/kg
Dibenzofuran	990	U	ug/kg
Diethylphthalate	990	U	ug/kg
Dimethylphthalate	990	U	ug/kg
Dinoseb	990	U	ug/kg
Ethyl methanesulfonate	990	U	ug/kg
Fluoranthene	990	U	ug/kg
Fluorene	990	U	ug/kg
Hexachlorobenzene	990	U	ug/kg
Hexachlorobutadiene	990	U	ug/kg
Hexachlorocyclopentadiene	990	U	ug/kg
Hexachloroethane	990	U	ug/kg
Hexachloropropene	990	U	ug/kg
Indeno(1,2,3-cd)pyrene	990	U	ug/kg
Isophorone	990	U	ug/kg
Isosafrole	990	U	ug/kg
Kepone	990	U	ug/kg
m-Dichlorobenzene	990	U	ug/kg
m-Dinitrobenzene	990	U	ug/kg
m-Nitroaniline	5100	U	ug/k
Methapyrilene	9900	U	ug/k
Methyl methanesulfonate	990	U	ug/k
N-Nitrosodi-n-butylamine	990	U	ug/k
n-Nitrosodi-n-propylamine	990	U	ug/k
N-Nitrosodiethylamine	990	U	ug/k
N-Nitrosodimethylamine	990	U	ug/k
N-Nitrosomethylethylamine	990	U	ug/k
N-Nitrosomorpholine	990	U	ug/k
N-Nitrosopiperidine	990	U	ug/k
N-Nitrosopyrrolidine	990	U	ug/k
Naphthalene	990	U	ug/k
Nitrobenzene	990	U	ug/k
o,o,o-Triethyl phosphorothioate	990	U	ug/k
o-Dichlorobenzene	990	U	ug/k
o-Nitroaniline	5100	U	ug/k
o-Nitrophenol	990	U	ug/k
o-Toluidine	990	U	ug/k
p-Chloro-m-cresol	990	U	ug/k
p-Chloroaniline	2000	U	ug/k
p-Dichlorobenzene	990	U	ug/k
p-dimethylaminoazobenzene	990	U	ug/k
p-Nitroaniline	5100	U	ug/k
p-Nitrophenol	5100	U	ug/k
p-Phenylenediamine	5100	U	ug/k
Pentachlorobenzene	990	U	ug/k
Pentachloronitrobenzene	990	U	ug/k
Pentachlorophenol	5100	U	ug/k
Phenacetin	990	U	ug/k
Phenanthrene	990	U	ug/k
Phenol	990	U	ug/k
Pronamide	990	U	ug/k
Pyrene	990	U	ug/k
Pyridine	990	U	ug/k
Safrole	990	U	ug/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR007

SEMIVOLATILES

Sample Number: S5F-14
Sample Date: 8/29/96
Laboratory ID: S685150F-8
QC Type: CS
% Moisture: 0
Location: S5F-14

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	990	U	ug/kg
1,2,4-Trichlorobenzene	990	U	ug/kg
1,3,5-Trinitrobenzene	990	U	ug/kg
1,4-Dioxane	990	U	ug/kg
1,4-Naphthoquinone	990	U	ug/kg
1-Naphthylamine	990	U	ug/kg
2,3,4,6-Tetrachlorophenol	5100	U	ug/kg
2,4,5-Trichlorophenol	990	U	ug/kg
2,4,6-Trichlorophenol	990	U	ug/kg
2,4-Dichlorophenol	990	U	ug/kg
2,4-Dimethylphenol	990	U	ug/kg
2,4-Dinitrophenol	5100	U	ug/kg
2,4-Dinitrotoluene	990	U	ug/kg
2,6-Dichlorophenol	990	U	ug/kg
2,6-Dinitrotoluene	990	U	ug/kg
2-Acetylaminofluorene	990	U	ug/kg
2-Chloronaphthalene	990	U	ug/kg
2-Chlorophenol	990	U	ug/kg
2-Methylnaphthalene	990	U	ug/kg
2-Naphthylamine	990	U	ug/kg
2-Picoline	990	U	ug/kg
3,3'-Dichlorobenzidine	2000	U	ug/kg
3,3'-Dimethylbenzidine	5100	U	ug/kg
3-Methylcholanthrene	990	U	ug/kg
4,6-Dinitro-o-cresol	5100	U	ug/kg
4-Aminobiphenyl	990	U	ug/kg
4-Bromophenyl phenyl ether	990	U	ug/kg
4-Chlorophenylphenyl ether	990	U	ug/kg
4-Nitroquinoline 1-oxide	9900	U	ug/kg
5-Nitro-o-toluidine	990	U	ug/kg
7,12-dimethylbenz(a)anthracene	990	U	ug/kg
a-a-Dimethylphenethylamine	5100	U	ug/kg
Acenaphthene	990	U	ug/kg
Acenaphthylene	990	U	ug/kg
Acetophenone	990	U	ug/kg
Aniline	990	U	ug/kg
Anthracene	990	U	ug/kg
Aramite	990	U	ug/kg
Benzo(a)anthracene	990	U	ug/kg
Benzo(a)pyrene	990	U	ug/kg
Benzo(b)fluoranthene	990	U	ug/kg
Benzo(g,h,i)perylene	990	U	ug/kg
Benzo(k)fluoranthene	990	U	ug/kg
Benzyl alcohol	990	U	ug/kg
Bis(2-chloroethoxy)methane	990	U	ug/kg
Bis(2-chloroethyl)ether	990	U	ug/kg
Bis(2-chloroisopropyl)ether	990	U	ug/kg
Bis(2-ethylhexyl)phthalate	990	U	ug/kg
Butylbenzylphthalate	990	U	ug/kg
Chrysene	990	U	ug/kg
Cresol	990	U	ug/kg
Cresol, m & p	990	U	ug/kg
Di-n-butylphthalate	990	U	ug/kg
Di-n-octylphthalate	990	U	ug/kg
Diallate	990	U	ug/kg
Dibenzo(a,h)anthracene	990	U	ug/kg
Dibenzofuran	990	U	ug/kg
Diethylphthalate	990	U	ug/kg
Dimethylphthalate	990	U	ug/kg
Dinoseb	990	U	ug/kg
Ethyl methanesulfonate	990	U	ug/kg
Fluoranthene	990	U	ug/kg
Fluorene	990	U	ug/kg
Hexachlorobenzene	990	U	ug/kg
Hexachlorobutadiene	990	U	ug/kg
Hexachlorocyclopentadiene	990	U	ug/kg
Hexachloroethane	990	U	ug/kg
Hexachloropropene	990	U	ug/kg
Indeno(1,2,3-cd)pyrene	990	U	ug/kg
Isophorone	990	U	ug/kg
Isosafrole	990	U	ug/kg
Kepone	990	U	ug/kg
m-Dichlorobenzene	990	U	ug/kg
m-Dinitrobenzene	990	U	ug/kg
m-Nitroaniline	5100	U	ug/kg
Methapyrilene	9900	U	ug/kg
Methyl methanesulfonate	990	U	ug/kg
N-Nitrosodi-n-butylamine	990	U	ug/kg
n-Nitrosodi-n-propylamine	990	U	ug/kg
N-Nitrosodiethylamine	990	U	ug/kg
N-Nitrosodimethylamine	990	U	ug/kg
N-Nitrosodiphenylamine/Diphenylamine	990	U	ug/kg
N-Nitrosomethylethylamine	990	U	ug/kg
N-Nitrosomorpholine	990	U	ug/kg
N-Nitrosopiperidine	990	U	ug/kg
N-Nitrosopyrrolidine	990	U	ug/kg
Naphthalene	990	U	ug/kg
Nitrobenzene	990	U	ug/kg
o,o,o-Triethyl phosphorothioate	990	U	ug/kg
o-Dichlorobenzene	990	U	ug/kg
o-Nitroaniline	5100	U	ug/kg
o-Nitrophenol	990	U	ug/kg
o-Toluidine	990	U	ug/kg
p-Chloro-m-cresol	990	U	ug/kg
p-Chloroaniline	2000	U	ug/kg
p-Dichlorobenzene	990	U	ug/kg
p-dimethylaminoazobenzene	990	U	ug/kg
p-Nitroaniline	5100	U	ug/kg
p-Nitrophenol	5100	U	ug/kg
p-Phenylenediamine	5100	U	ug/kg
Pentachlorobenzene	990	U	ug/kg
Pentachloronitrobenzene	990	U	ug/kg
Pentachlorophenol	5100	U	ug/kg
Phenacetin	990	U	ug/kg
Phenanthrene	990	U	ug/kg
Phenol	990	U	ug/kg
Pronamide	990	U	ug/kg
Pyrene	990	U	ug/kg
Pyridine	990	U	ug/kg
Safrole	990	U	ug/kg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR007

SEMIVOLATILES

Sample Number: S5F-15
Sample Date: 8/29/96
Laboratory ID: S685150F-9
QC Type: CS
% Moisture: 0
Location: S5F-15

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	1200	UR	ug/kg
1,2,4-Trichlorobenzene	1200	UR	ug/kg
1,3,5-Trinitrobenzene	1200	UR	ug/kg
1,4-Dioxane	1200	UR	ug/kg
1,4-Naphthoquinone	1200	UR	ug/kg
1-Naphthylamine	1200	UR	ug/kg
2,3,4,6-Tetrachlorophenol	6400	U	ug/kg
2,4,5-Trichlorophenol	1200	U	ug/kg
2,4,6-Trichlorophenol	1200	U	ug/kg
2,4-Dichlorophenol	1200	U	ug/kg
2,4-Dimethylphenol	1200	U	ug/kg
2,4-Dinitrophenol	6400	U	ug/kg
2,4-Dinitrotoluene	1200	UR	ug/kg
2,6-Dichlorophenol	1200	U	ug/kg
2,6-Dinitrotoluene	1200	UR	ug/kg
2-Acetylaminofluorene	1200	UR	ug/kg
2-Chloronaphthalene	1200	UR	ug/kg
2-Chlorophenol	1200	U	ug/kg
2-Methylnaphthalene	1200	UR	ug/kg
2-Naphthylamine	1200	UR	ug/kg
2-Picoline	1200	UR	ug/kg
3,3'-Dichlorobenzidine	2500	UR	ug/kg
3,3'-Dimethylbenzidine	6400	UR	ug/kg
3-Methylcholanthrene	1200	UR	ug/kg
4,6-Dinitro-o-cresol	6400	UR	ug/kg
4-Aminobiphenyl	1200	UR	ug/kg
4-Bromophenyl phenyl ether	1200	UR	ug/kg
4-Chlorophenylphenyl ether	1200	UR	ug/kg
4-Nitroquinoline 1-oxide	12000	UR	ug/kg
5-Nitro-o-toluidine	1200	UR	ug/kg
7,12-dimethylbenz(a)anthracene	1200	UR	ug/kg
a-a-Dimethylphenethylamine	6400	UR	ug/kg
Acenaphthene	1200	UR	ug/kg
Acenaphthylene	1200	UR	ug/kg
Acetophenone	1200	UR	ug/kg
Aniline	1200	UR	ug/kg
Anthracene	1200	UR	ug/kg
Aramite	1200	UR	ug/kg
Benzo(a)anthracene	1200	UR	ug/kg
Benzo(a)pyrene	1200	UR	ug/kg
Benzo(b)fluoranthene	1200	UR	ug/kg
Benzo(g,h,i)perylene	1200	UR	ug/kg
Benzo(k)fluoranthene	1200	UR	ug/kg
Benzyl alcohol	1200	UR	ug/kg
Bis(2-chloroethoxy)methane	1200	UR	ug/kg
Bis(2-chloroethyl)ether	1200	UR	ug/kg
Bis(2-chloroisopropyl)ether	1200	UR	ug/kg
Bis(2-ethylhexyl)phthalate	1200	UR	ug/kg
Butylbenzylphthalate	1200	UR	ug/kg
Chrysene	1200	UR	ug/kg
Cresol	1200	UR	ug/kg
Cresol, m & p	1200	UR	ug/kg
Di-n-butylphthalate	1200	UR	ug/kg
Di-n-octylphthalate	1200	UR	ug/kg
Diallate	1200	UR	ug/kg
Dibenzo(a,h)anthracene	1200	UR	ug/kg
Dibenzofuran	1200	UR	ug/kg
Diethylphthalate	1200	UR	ug/kg
Dimethylphthalate	1200	UR	ug/kg
Dinoseb	1200	UR	ug/kg
Ethyl methanesulfonate	1200	UR	ug/kg
Fluoranthene	1200	UR	ug/kg
Fluorene	1200	UR	ug/kg
Hexachlorobenzene	1200	UR	ug/kg
Hexachlorobutadiene	1200	UR	ug/kg
Hexachlorocyclopentadiene	1200	UR	ug/kg
Hexachloroethane	1200	UR	ug/kg
Hexachloropropene	1200	UR	ug/kg
Indeno(1,2,3-cd)pyrene	1200	UR	ug/kg
Isophorone	1200	UR	ug/kg
Isosafrole	1200	UR	ug/kg
Kepone	1200	UR	ug/kg
m-Dichlorobenzene	1200	UR	ug/kg
m-Dinitrobenzene	1200	UR	ug/kg
m-Nitroaniline	6400	UR	ug
Methapyrilene	12000	UR	ug
Methyl methanesulfonate	1200	UR	ug
N-Nitrosodi-n-butylamine	1200	UR	ug
n-Nitrosodi-n-propylamine	1200	UR	ug
N-Nitrosodiethylamine	1200	UR	ug
N-Nitrosodimethylamine	1200	UR	ug
N-Nitrosodiphenylamine/Diphenylamine	1200	UR	ug
N-Nitrosomethylethylamine	1200	UR	ug
N-Nitrosomorpholine	1200	UR	ug
N-Nitrosopiperidine	1200	UR	ug
N-Nitrosopyrrolidine	1200	UR	ug
Naphthalene	1200	UR	ug
Nitrobenzene	1200	UR	ug
o,o,o-Triethyl phosphorothioate	1200	UR	ug
o-Dichlorobenzene	1200	UR	ug
o-Nitroaniline	6400	UR	ug
o-Nitrophenol	1200	U	ug
o-Toluidine	1200	UR	ug
p-Chloro-m-cresol	1200	UR	ug
p-Chloroaniline	2500	UR	ug
p-Dichlorobenzene	1200	UR	ug
p-dimethylaminoazobenzene	1200	UR	ug
p-Nitroaniline	6400	UR	ug
p-Nitrophenol	6400	U	ug
p-Phenylenediamine	6400	UR	ug
Pentachlorobenzene	1200	UR	ug
Pentachloronitrobenzene	1200	UR	ug
Pentachlorophenol	6400	U	ug
Phenacetin	1200	UR	ug
Phenanthrene	1200	UR	ug
Phenol	1200	U	ug
Pronamide	1200	UR	ug
Pyrene	1200	UR	ug
Pyridine	1200	UR	ug
Safrole	1200	UR	ug

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR007

SEMIVOLATILES

Sample Number: S5F-16
Sample Date: 8/29/96
Laboratory ID: S685150F-10
QC Type: CS
% Moisture: 0
Location: S5F-16

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	940	UR	ug/kg
1,2,4-Trichlorobenzene	940	UR	ug/kg
1,3,5-Trinitrobenzene	940	UR	ug/kg
1,4-Dioxane	940	UR	ug/kg
1,4-Naphthoquinone	940	UR	ug/kg
1-Naphthylamine	940	UR	ug/kg
2,3,4,6-Tetrachlorophenol	4800	U	ug/kg
2,4,5-Trichlorophenol	940	U	ug/kg
2,4,6-Trichlorophenol	940	U	ug/kg
2,4-Dichlorophenol	940	U	ug/kg
2,4-Dimethylphenol	940	U	ug/kg
2,4-Dinitrophenol	4800	U	ug/kg
2,4-Dinitrotoluene	940	UR	ug/kg
2,6-Dichlorophenol	940	U	ug/kg
2,6-Dinitrotoluene	940	UR	ug/kg
2-Acetylaminofluorene	940	UR	ug/kg
2-Chloronaphthalene	940	UR	ug/kg
2-Chlorophenol	940	U	ug/kg
2-Methylnaphthalene	940	UR	ug/kg
2-Naphthylamine	940	UR	ug/kg
2-Picoline	940	UR	ug/kg
3,3'-Dichlorobenzidine	1900	UR	ug/kg
3,3'-Dimethylbenzidine	4800	UR	ug/kg
3-Methylcholanthrene	940	UR	ug/kg
4,6-Dinitro-o-cresol	4800	UR	ug/kg
4-Aminobiphenyl	940	UR	ug/kg
4-Bromophenyl phenyl ether	940	UR	ug/kg
4-Chlorophenylphenyl ether	940	UR	ug/kg
4-Nitroquinoline 1-oxide	9400	UR	ug/kg
5-Nitro-o-toluidine	940	UR	ug/kg
7,12-dimethylbenz(a)anthracene	940	UR	ug/kg
a-a-Dimethylphenethylamine	4800	UR	ug/kg
Acenaphthene	940	UR	ug/kg
Acenaphthylene	940	UR	ug/kg
Acetophenone	940	UR	ug/kg
Aniline	940	UR	ug/kg
Anthracene	940	UR	ug/kg
Aramite	940	UR	ug/kg
Benzo(a)anthracene	940	UR	ug/kg
Benzo(a)pyrene	940	UR	ug/kg
Benzo(b)fluoranthene	940	UR	ug/kg
Benzo(g,h,i)perylene	940	UR	ug/kg
Benzo(k)fluoranthene	940	UR	ug/kg
Benzyl alcohol	940	UR	ug/kg
Bis(2-chloroethoxy)methane	940	UR	ug/kg
Bis(2-chloroethyl)ether	940	UR	ug/kg
Bis(2-chloroisopropyl)ether	940	UR	ug/kg
Bis(2-ethylhexyl)phthalate	940	UR	ug/kg
Butylbenzylphthalate	940	UR	ug/kg
Chrysene	940	UR	ug/kg
Cresol	940	UR	ug/kg
Cresol, m & p	940	UR	ug/kg
Di-n-butylphthalate	940	UR	ug/kg
Di-n-octylphthalate	940	UR	ug/kg
Diallate	940	UR	ug/kg
Dibenzo(a,h)anthracene	940	UR	ug/kg
Dibenzofuran	940	UR	ug/kg
Diethylphthalate	940	UR	ug/kg
Dimethylphthalate	940	UR	ug/kg
Dinoseb	940	U	ug/kg
Ethyl methanesulfonate	940	UR	ug/kg
Fluoranthene	940	UR	ug/kg
Fluorene	940	UR	ug/kg
Hexachlorobenzene	940	UR	ug/kg
Hexachlorobutadiene	940	UR	ug/kg
Hexachlorocyclopentadiene	940	UR	ug/kg
Hexachloroethane	940	UR	ug/kg
Hexachloropropene	940	UR	ug/kg
Indeno(1,2,3-cd)pyrene	940	UR	ug/kg
Isophorone	940	UR	ug/kg
Isosafrole	940	UR	ug/kg
Kepone	940	UR	ug/kg
m-Dichlorobenzene	940	UR	ug/kg
m-Dinitrobenzene	940	UR	ug/kg
m-Nitroaniline	4800	UR	ug
Methapyrilene	9400	UR	ug
Methyl methanesulfonate	940	UR	ug
N-Nitrosodi-n-butylamine	940	UR	ug
n-Nitrosodi-n-propylamine	940	UR	ug
N-Nitrosodiethylamine	940	UR	ug
N-Nitrosodimethylamine	940	UR	ug
N-Nitrosodiphenylamine/Diphenylamine	940	UR	ug
N-Nitrosomethylethylamine	940	UR	ug
N-Nitrosomorpholine	940	UR	ug
N-Nitrosopiperidine	940	UR	ug
N-Nitrosopyrrolidine	940	UR	ug
Naphthalene	940	UR	ug
Nitrobenzene	940	UR	ug
o,o,o-Triethyl phosphorothioate	940	UR	ug
o-Dichlorobenzene	940	UR	ug
o-Nitroaniline	4800	UR	ug
o-Nitrophenol	940	U	ug
o-Toluidine	940	UR	ug
p-Chloro-m-cresol	940	UR	ug
p-Chloroaniline	1900	UR	ug
p-Dichlorobenzene	940	UR	ug
p-dimethylaminoazobenzene	940	UR	ug
p-Nitroaniline	4800	UR	ug
p-Nitrophenol	4800	U	ug
p-Phenylenediamine	4800	UR	ug
Pentachlorobenzene	940	UR	ug
Pentachloronitrobenzene	940	UR	ug
Pentachlorophenol	4800	U	ug
Phenacetin	940	UR	ug
Phenanthrene	940	UR	ug
Phenol	940	U	ug
Pronamide	940	UR	ug
Pyrene	940	UR	ug
Pyridine	940	UR	ug
Safrole	940	UR	ug

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR007

SEMIVOLATILES

Sample Number: S5F-17
Sample Date: 8/29/96
Laboratory ID: S685150F-11
QC Type: CS
% Moisture: 0
Location: S5F-17

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	1200	UR	ug/kg
1,2,4-Trichlorobenzene	1200	UR	ug/kg
1,3,5-Trinitrobenzene	1200	UR	ug/kg
1,4-Dioxane	1200	UR	ug/kg
1,4-Naphthoquinone	1200	UR	ug/kg
1-Naphthylamine	1200	UR	ug/kg
2,3,4,6-Tetrachlorophenol	6400	U	ug/kg
2,4,5-Trichlorophenol	1200	U	ug/kg
2,4,6-Trichlorophenol	1200	U	ug/kg
2,4-Dichlorophenol	1200	U	ug/kg
2,4-Dimethylphenol	1200	U	ug/kg
2,4-Dinitrophenol	6400	U	ug/kg
2,4-Dinitrotoluene	1200	UR	ug/kg
2,6-Dichlorophenol	1200	U	ug/kg
2,6-Dinitrotoluene	1200	UR	ug/kg
2-Acetylaminofluorene	1200	UR	ug/kg
2-Chloronaphthalene	1200	UR	ug/kg
2-Chlorophenol	1200	U	ug/kg
2-Methylnaphthalene	1200	UR	ug/kg
2-Naphthylamine	1200	UR	ug/kg
2-Picoline	1200	UR	ug/kg
3,3'-Dichlorobenzidine	2500	UR	ug/kg
3,3'-Dimethylbenzidine	6400	UR	ug/kg
3-Methylcholanthrene	1200	UR	ug/kg
4,6-Dinitro-o-cresol	6400	UR	ug/kg
4-Aminobiphenyl	1200	UR	ug/kg
4-Bromophenyl phenyl ether	1200	UR	ug/kg
4-Chlorophenylphenyl ether	1200	UR	ug/kg
4-Nitroquinoline 1-oxide	12000	UR	ug/kg
5-Nitro-o-toluidine	1200	UR	ug/kg
7,12-dimethylbenz(a)anthracene	1200	UR	ug/kg
a-a-Dimethylphenethylamine	6400	UR	ug/kg
Acenaphthene	1200	UR	ug/kg
Acenaphthylene	1200	UR	ug/kg
Acetophenone	1200	UR	ug/kg
Aniline	1200	UR	ug/kg
Anthracene	1200	UR	ug/kg
Aramite	1200	UR	ug/kg
Benzo(a)anthracene	1200	UR	ug/kg
Benzo(a)pyrene	1200	UR	ug/kg
Benzo(b)fluoranthene	1200	UR	ug/kg
Benzo(g,h,i)perylene	1200	UR	ug/kg
Benzo(k)fluoranthene	1200	UR	ug/kg
Benzyl alcohol	1200	UR	ug/kg
Bis(2-chloroethoxy)methane	1200	UR	ug/kg
Bis(2-chloroethyl)ether	1200	UR	ug/kg
Bis(2-chloroisopropyl)ether	1200	UR	ug/kg
Bis(2-ethylhexyl)phthalate	1200	UR	ug/kg
Butylbenzylphthalate	1200	UR	ug/kg
Chrysene	1200	UR	ug/kg
Cresol	1200	UR	ug/kg
Cresol, m & p	1200	UR	ug/kg
Di-n-butylphthalate	1200	UR	ug/kg
Di-n-octylphthalate	1200	UR	ug/kg
Diallate	1200	UR	ug/kg
Dibenzo(a,h)anthracene	1200	UR	ug/kg
Dibenzofuran	1200	UR	ug/kg
Diethylphthalate	1200	UR	ug/kg
Dimethylphthalate	1200	UR	ug/kg
Dinoseb	1200	UR	ug/kg
Ethyl methanesulfonate	1200	UR	ug/kg
Fluoranthene	1200	UR	ug/kg
Fluorene	1200	UR	ug/kg
Hexachlorobenzene	1200	UR	ug/kg
Hexachlorobutadiene	1200	UR	ug/kg
Hexachlorocyclopentadiene	1200	UR	ug/kg
Hexachloroethane	1200	UR	ug/kg
Hexachloropropene	1200	UR	ug/kg
Indeno(1,2,3-cd)pyrene	1200	UR	ug/kg
Isophorone	1200	UR	ug/kg
Isosafrole	1200	UR	ug/kg
Kepone	1200	UR	ug/kg
m-Dichlorobenzene	1200	UR	ug/kg
m-Dinitrobenzene	1200	UR	ug/kg
m-Nitroaniline	6400	UR	ug/
Methapyrilene	12000	UR	ug/
Methyl methanesulfonate	1200	UR	ug/
N-Nitrosodi-n-butylamine	1200	UR	ug/
n-Nitrosodi-n-propylamine	1200	UR	ug/
N-Nitrosodiethylamine	1200	UR	ug/
N-Nitrosodimethylamine	1200	UR	ug/
N-Nitrosodiphenylamine/Diphenylamine	1200	UR	ug/
N-Nitrosomethylethylamine	1200	UR	ug/
N-Nitrosomorpholine	1200	UR	ug/
N-Nitrosopiperidine	1200	UR	ug/
N-Nitrosopyrrolidine	1200	UR	ug/
Naphthalene	1200	UR	ug/
Nitrobenzene	1200	UR	ug/
o,o,o-Triethyl phosphorothioate	1200	UR	ug/
o-Dichlorobenzene	1200	UR	ug/
o-Nitroaniline	6400	UR	ug/
o-Nitrophenol	1200	U	ug/
o-Toluidine	1200	UR	ug/
p-Chloro-m-cresol	1200	UR	ug/
p-Chloroaniline	2500	UR	ug/
p-Dichlorobenzene	1200	UR	ug/
p-dimethylaminoazobenzene	1200	UR	ug/
p-Nitroaniline	6400	UR	ug/
p-Nitrophenol	6400	U	ug/
p-Phenylenediamine	6400	UR	ug/
Pentachlorobenzene	1200	UR	ug/
Pentachloronitrobenzene	1200	UR	ug/
Pentachlorophenol	6400	U	ug/
Phenacetin	1200	UR	ug/
Phenanthrene	1200	UR	ug/
Phenol	1200	U	ug/
Pronamide	1200	UR	ug/
Pyrene	1200	UR	ug/
Pyridine	1200	UR	ug/
Safrole	1200	UR	ug/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR007

SEMIVOLATILES

Sample Number: S5F-18
Sample Date: 8/29/96
Laboratory ID: S685150F-12
QC Type: CS
% Moisture: 0
Location: S5F-18

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	1200	U	ug/kg
1,2,4-Trichlorobenzene	1200	U	ug/kg
1,3,5-Trinitrobenzene	1200	U	ug/kg
1,4-Dioxane	1200	U	ug/kg
1,4-Naphthoquinone	1200	U	ug/kg
1-Naphthylamine	1200	U	ug/kg
2,3,4,6-Tetrachlorophenol	6400	U	ug/kg
2,4,5-Trichlorophenol	1200	U	ug/kg
2,4,6-Trichlorophenol	1200	U	ug/kg
2,4-Dichlorophenol	1200	U	ug/kg
2,4-Dimethylphenol	1200	U	ug/kg
2,4-Dinitrophenol	6400	U	ug/kg
2,4-Dinitrotoluene	1200	U	ug/kg
2,6-Dichlorophenol	1200	U	ug/kg
2,6-Dinitrotoluene	1200	U	ug/kg
2-Acetylaminofluorene	1200	U	ug/kg
2-Chloronaphthalene	1200	U	ug/kg
2-Chlorophenol	1200	U	ug/kg
2-Methylnaphthalene	1200	U	ug/kg
2-Naphthylamine	1200	U	ug/kg
2-Picoline	1200	U	ug/kg
3,3'-Dichlorobenzidine	2500	U	ug/kg
3,3'-Dimethylbenzidine	6400	U	ug/kg
3-Methylcholanthrene	1200	U	ug/kg
4,6-Dinitro-o-cresol	6400	U	ug/kg
4-Aminobiphenyl	1200	U	ug/kg
4-Bromophenyl phenyl ether	1200	U	ug/kg
4-Chlorophenylphenyl ether	1200	U	ug/kg
4-Nitroquinoline 1-oxide	12000	U	ug/kg
5-Nitro-o-toluidine	1200	U	ug/kg
7,12-dimethylbenz(a)anthracene	1200	U	ug/kg
a-a-Dimethylphenethylamine	6400	U	ug/kg
Acenaphthene	1200	U	ug/kg
Acenaphthylene	1200	U	ug/kg
Acetophenone	1200	U	ug/kg
Aniline	1200	U	ug/kg
Anthracene	1200	U	ug/kg
Aramite	1200	U	ug/kg
Benzo(a)anthracene	1200	U	ug/kg
Benzo(a)pyrene	1200	U	ug/kg
Benzo(b)fluoranthene	1200	U	ug/kg
Benzo(g,h,i)perylene	1200	U	ug/kg
Benzo(k)fluoranthene	1200	U	ug/kg
Benzyl alcohol	1200	U	ug/kg
Bis(2-chloroethoxy)methane	1200	U	ug/kg
Bis(2-chloroethyl)ether	1200	U	ug/kg
Bis(2-chloroisopropyl)ether	1200	U	ug/kg
Bis(2-ethylhexyl)phthalate	1200	U	ug/kg
Butylbenzylphthalate	1200	U	ug/kg
Chrysene	1200	U	ug/kg
Cresol	1200	U	ug/kg
Cresol, m & p	1200	U	ug/kg
Di-n-butylphthalate	1200	U	ug/kg
Di-n-octylphthalate	1200	U	ug/kg
Diallate	1200	U	ug/kg
Dibenzo(a,h)anthracene	1200	U	ug/kg
Dibenzofuran	1200	U	ug/kg
Diethylphthalate	1200	U	ug/kg
Dimethylphthalate	1200	U	ug/kg
Dinoseb	1200	U	ug/kg
Ethyl methanesulfonate	1200	U	ug/kg
Fluoranthene	1200	U	ug/kg
Fluorene	1200	U	ug/kg
Hexachlorobenzene	1200	U	ug/kg
Hexachlorobutadiene	1200	U	ug/kg
Hexachlorocyclopentadiene	1200	U	ug/kg
Hexachloroethane	1200	U	ug/kg
Hexachloropropene	1200	U	ug/kg
Indeno(1,2,3-cd)pyrene	1200	U	ug/kg
Isophorone	1200	U	ug/kg
Isosafrole	1200	U	ug/kg
Kepone	1200	U	ug/kg
m-Dichlorobenzene	1200	U	ug/kg
m-Dinitrobenzene	1200	U	ug/kg
m-Nitroaniline	6400	U	ug/kg
Methapyrilene	12000	U	ug/kg
Methyl methanesulfonate	1200	U	ug/kg
N-Nitrosodi-n-butylamine	1200	U	ug/kg
n-Nitrosodi-n-propylamine	1200	U	ug/kg
N-Nitrosodiethylamine	1200	U	ug/kg
N-Nitrosodimethylamine	1200	U	ug/kg
N-Nitrosodiphenylamine/Diphenylamine	1200	U	ug/kg
N-Nitrosomethylethylamine	1200	U	ug/kg
N-Nitrosomorpholine	1200	U	ug/kg
N-Nitrosopiperidine	1200	U	ug/kg
N-Nitrosopyrrolidine	1200	U	ug/kg
Naphthalene	1200	U	ug/kg
Nitrobenzene	1200	U	ug/kg
o,o,o-Triethyl phosphorothioate	1200	U	ug/kg
o-Dichlorobenzene	1200	U	ug/kg
o-Nitroaniline	6400	U	ug/kg
o-Nitrophenol	1200	U	ug/kg
o-Toluidine	1200	U	ug/kg
p-Chloro-m-cresol	1200	U	ug/kg
p-Chloroaniline	2500	U	ug/kg
p-Dichlorobenzene	1200	U	ug/kg
p-dimethylaminoazobenzene	1200	U	ug/kg
p-Nitroaniline	6400	U	ug/kg
p-Nitrophenol	6400	U	ug/kg
p-Phenylenediamine	6400	U	ug/kg
Pentachlorobenzene	1200	U	ug/kg
Pentachloronitrobenzene	1200	U	ug/kg
Pentachlorophenol	6400	U	ug/kg
Phenacetin	1200	U	ug/kg
Phenanthrene	1200	U	ug/kg
Phenol	1200	U	ug/kg
Pronamide	1200	U	ug/kg
Pyrene	1200	U	ug/kg
Pyridine	1200	U	ug/kg
Safrole	1200	U	ug/kg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR007

SEMIVOLATILES

Sample Number: S5F-7
Sample Date: 8/29/96
Laboratory ID: S685150F-1
QC Type: CS
% Moisture: 0
Location: S5F-7

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	1600	UR	ug/kg
1,2,4-Trichlorobenzene	1600	UR	ug/kg
1,3,5-Trinitrobenzene	1600	UR	ug/kg
1,4-Dioxane	1600	UR	ug/kg
1,4-Naphthoquinone	1600	UR	ug/kg
1-Naphthylamine	1600	UR	ug/kg
2,3,4,6-Tetrachlorophenol	8500	U	ug/kg
2,4,5-Trichlorophenol	1600	U	ug/kg
2,4,6-Trichlorophenol	1600	U	ug/kg
2,4-Dichlorophenol	1600	U	ug/kg
2,4-Dimethylphenol	1600	U	ug/kg
2,4-Dinitrophenol	8500	U	ug/kg
2,4-Dinitrotoluene	1600	UR	ug/kg
2,6-Dichlorophenol	1600	U	ug/kg
2,6-Dinitrotoluene	1600	UR	ug/kg
2-Acetylaminofluorene	1600	UR	ug/kg
2-Chloronaphthalene	1600	UR	ug/kg
2-Chlorophenol	1600	U	ug/kg
2-Methylnaphthalene	1600	UR	ug/kg
2-Naphthylamine	1600	UR	ug/kg
2-Picoline	1600	UR	ug/kg
3,3'-Dichlorobenzidine	3300	UR	ug/kg
3,3'-Dimethylbenzidine	8500	UR	ug/kg
3-Methylcholanthrene	1600	UR	ug/kg
4,6-Dinitro-o-cresol	8500	UR	ug/kg
4-Aminobiphenyl	1600	UR	ug/kg
4-Bromophenyl phenyl ether	1600	UR	ug/kg
4-Chlorophenylphenyl ether	1600	UR	ug/kg
4-Nitroquinoline 1-oxide	16000	UR	ug/kg
5-Nitro-o-toluidine	1600	UR	ug/kg
7,12-dimethylbenz(a)anthracene	1600	UR	ug/kg
a-a-Dimethylphenethylamine	8500	UR	ug/kg
ɔnaphthene	1600	UR	ug/kg
Acenaphthylene	1600	UR	ug/kg
Acetophenone	1600	UR	ug/kg
Aniline	1600	UR	ug/kg
Anthracene	1600	UR	ug/kg
Aramite	1600	UR	ug/kg
Benzo(a)anthracene	1600	UR	ug/kg
Benzo(a)pyrene	1600	UR	ug/kg
Benzo(b)fluoranthene	1600	UR	ug/kg
Benzo(g,h,i)perylene	1600	UR	ug/kg
Benzo(k)fluoranthene	1600	UR	ug/kg
Benzyl alcohol	1600	UR	ug/kg
Bis(2-chloroethoxy)methane	1600	UR	ug/kg
Bis(2-chloroethyl)ether	1600	UR	ug/kg
Bis(2-chloroisopropyl)ether	1600	UR	ug/kg
Bis(2-ethylhexyl)phthalate	1600	UR	ug/kg
Butylbenzylphthalate	1600	UR	ug/kg
Chrysene	1600	UR	ug/kg
Cresol	1600	UR	ug/kg
Cresol, m & p	1600	UR	ug/kg
Di-n-butylphthalate	1600	UR	ug/kg
Di-n-octylphthalate	1600	UR	ug/kg
Diallate	1600	UR	ug/kg
Dibenzo(a,h)anthracene	1600	UR	ug/kg
Dibenzofuran	1600	UR	ug/kg
Diethylphthalate	1600	UR	ug/kg
Dimethylphthalate	1600	UR	ug/kg
Dinoseb	1600	UR	ug/kg
Ethyl methanesulfonate	1600	UR	ug/kg
Fluoranthene	1600	UR	ug/kg
Fluorene	1600	UR	ug/kg
Hexachlorobenzene	1600	UR	ug/kg
Hexachlorobutadiene	1600	UR	ug/kg
Hexachlorocyclopentadiene	1600	UR	ug/kg
Hexachloroethane	1600	UR	ug/kg
Hexachloropropene	1600	UR	ug/kg
Indeno(1,2,3-cd)pyrene	1600	UR	ug/kg
Isophorone	1600	UR	ug/kg
Isosafrole	1600	UR	ug/kg
Kepone	1600	UR	ug/kg
m-Dichlorobenzene	1600	UR	ug/kg
m-Dinitrobenzene	1600	UR	ug/kg
m-Nitroaniline	8500	UR	ug
Methapyrilene	16000	UR	ug
Methyl methanesulfonate	1600	UR	ug
N-Nitrosodi-n-butylamine	1600	UR	ug
n-Nitrosodi-n-propylamine	1600	UR	ug
N-Nitrosodiethylamine	1600	UR	ug
N-Nitrosodimethylamine	1600	UR	ug
N-Nitrosodiphenylamine/Diphenylamine	1600	UR	ug
N-Nitrosomethylethylamine	1600	UR	ug
N-Nitrosomorpholine	1600	UR	ug
N-Nitrosopiperidine	1600	UR	ug
N-Nitrosopyrrolidine	1600	UR	ug
Naphthalene	1600	UR	ug
Nitrobenzene	1600	UR	ug
o,o,o-Triethyl phosphorothioate	1600	UR	ug
o-Dichlorobenzene	1600	UR	ug
o-Nitroaniline	8500	UR	ug
o-Nitrophenol	1600	U	ug
o-Toluidine	1600	UR	ug
p-Chloro-m-cresol	1600	UR	ug
p-Chloroaniline	3300	UR	ug
p-Dichlorobenzene	1600	UR	ug
p-dimethylaminoazobenzene	1600	UR	ug
p-Nitroaniline	8500	UR	ug
p-Nitrophenol	8500	U	ug
p-Phenylenediamine	8500	UR	ug
Pentachlorobenzene	1600	UR	ug
Pentachloronitrobenzene	1600	UR	ug
Pentachlorophenol	8500	U	ug
Phenacetin	1600	UR	ug
Phenanthrene	1600	UR	ug
Phenol	1600	U	ug
Pronamide	1600	UR	ug
Pyrene	1600	UR	ug
Pyridine	1600	UR	ug
Safrole	1600	UR	ug

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR007

SEMIVOLATILES

Sample Number: S5F-8
Sample Date: 8/29/96
Laboratory ID: S685150F-2
QC Type: CS
% Moisture: 0
Location: S5F-8

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	820	U	ug/kg
1,2,4-Trichlorobenzene	820	U	ug/kg
1,3,5-Trinitrobenzene	820	U	ug/kg
1,4-Dioxane	820	U	ug/kg
1,4-Naphthoquinone	820	U	ug/kg
1-Naphthylamine	820	U	ug/kg
2,3,4,6-Tetrachlorophenol	4200	U	ug/kg
2,4,5-Trichlorophenol	820	U	ug/kg
2,4,6-Trichlorophenol	820	U	ug/kg
2,4-Dichlorophenol	820	U	ug/kg
2,4-Dimethylphenol	820	U	ug/kg
2,4-Dinitrophenol	4200	U	ug/kg
2,4-Dinitrotoluene	820	U	ug/kg
2,6-Dichlorophenol	820	U	ug/kg
2,6-Dinitrotoluene	820	U	ug/kg
2-Acetylaminofluorene	820	U	ug/kg
2-Chloronaphthalene	820	U	ug/kg
2-Chlorophenol	820	U	ug/kg
2-Methylnaphthalene	820	U	ug/kg
2-Naphthylamine	820	U	ug/kg
2-Picoline	820	U	ug/kg
3,3'-Dichlorobenzidine	1600	U	ug/kg
3,3'-Dimethylbenzidine	4200	U	ug/kg
3-Methylcholanthrene	820	U	ug/kg
4,6-Dinitro-o-cresol	4200	U	ug/kg
4-Aminobiphenyl	820	U	ug/kg
4-Bromophenyl phenyl ether	820	U	ug/kg
4-Chlorophenylphenyl ether	820	U	ug/kg
4-Nitroquinoline 1-oxide	8200	U	ug/kg
5-Nitro-o-toluidine	820	U	ug/kg
7,12-dimethylbenz(a)anthracene	820	U	ug/kg
a-a-Dimethylphenethylamine	4200	U	ug/kg
Acenaphthene	820	U	ug/kg
Acenaphthylene	820	U	ug/kg
Acetophenone	820	U	ug/kg
Aniline	820	U	ug/kg
Anthracene	820	U	ug/kg
Aramite	820	U	ug/kg
Benzo(a)anthracene	820	U	ug/kg
Benzo(a)pyrene	820	U	ug/kg
Benzo(b)fluoranthene	820	U	ug/kg
Benzo(g,h,i)perylene	820	U	ug/kg
Benzo(k)fluoranthene	820	U	ug/kg
Benzyl alcohol	820	U	ug/kg
Bis(2-chloroethoxy)methane	820	U	ug/kg
Bis(2-chloroethyl)ether	820	U	ug/kg
Bis(2-chloroisopropyl)ether	820	U	ug/kg
Bis(2-ethylhexyl)phthalate	820	U	ug/kg
Butylbenzylphthalate	820	U	ug/kg
Chrysene	820	U	ug/kg
Cresol	820	U	ug/kg
Cresol, m & p	820	U	ug/kg
Di-n-butylphthalate	820	U	ug/kg
Di-n-octylphthalate	820	U	ug/kg
Diallate	820	U	ug/kg
Dibenzo(a,h)anthracene	820	U	ug/kg
Dibenzofuran	820	U	ug/kg
Diethylphthalate	820	U	ug/kg
Dimethylphthalate	820	U	ug/kg
Dinoseb	820	U	ug/kg
Ethyl methanesulfonate	820	U	ug/kg
Fluoranthene	820	U	ug/kg
Fluorene	820	U	ug/kg
Hexachlorobenzene	820	U	ug/kg
Hexachlorobutadiene	820	U	ug/kg
Hexachlorocyclopentadiene	820	U	ug/kg
Hexachloroethane	820	U	ug/kg
Hexachloropropene	820	U	ug/kg
Indeno(1,2,3-cd)pyrene	820	U	ug/kg
Isophorone	820	U	ug/kg
Isosafrole	820	U	ug/kg
Kepone	820	U	ug/kg
m-Dichlorobenzene	820	U	ug/kg
m-Dinitrobenzene	820	U	ug/kg
m-Nitroaniline	4200	U	ug/
Methapyrilene	8200	U	ug/
Methyl methanesulfonate	820	U	ug/
N-Nitrosodi-n-butylamine	820	U	ug/
n-Nitrosodi-n-propylamine	820	U	ug/
N-Nitrosodiethylamine	820	U	ug
N-Nitrosodimethylamine	820	U	ug
N-Nitrosodiphenylamine/Diphenylamine	820	U	ug
N-Nitrosomethylethylamine	820	U	ug
N-Nitrosomorpholine	820	U	ug
N-Nitrosopiperidine	820	U	ug
N-Nitrosopyrrolidine	820	U	ug
Naphthalene	820	U	ug
Nitrobenzene	820	U	ug
o,o,o-Triethyl phosphorothioate	820	U	ug
o-Dichlorobenzene	820	U	ug
o-Nitroaniline	4200	U	ug
o-Nitrophenol	820	U	ug
o-Toluidine	820	U	ug
p-Chloro-m-cresol	820	U	ug
p-Chloroaniline	1600	U	ug
p-Dichlorobenzene	820	U	ug
p-dimethylaminoazobenzene	820	U	ug
p-Nitroaniline	4200	U	ug
p-Nitrophenol	4200	U	ug
p-Phenylenediamine	4200	U	ug
Pentachlorobenzene	820	U	ug
Pentachloronitrobenzene	820	U	ug
Pentachlorophenol	4200	U	ug
Phenacetin	820	U	ug
Phenanthrene	820	U	ug
Phenol	820	U	ug
Pronamide	820	U	ug
Pyrene	820	U	ug
Pyridine	820	U	ug
Safrole	820	U	ug

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR007

SEMIVOLATILES

Sample Number: S5F-9
Sample Date: 8/29/96
Laboratory ID: S685150F-3
QC Type: CS
% Moisture: 0
Location: S5F-9

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	820	UR	ug/kg
1,2,4-Trichlorobenzene	820	UR	ug/kg
1,3,5-Trinitrobenzene	820	UR	ug/kg
1,4-Dioxane	820	UR	ug/kg
1,4-Naphthoquinone	820	UR	ug/kg
1-Naphthylamine	820	UR	ug/kg
2,3,4,6-Tetrachlorophenol	4200	U	ug/kg
2,4,5-Trichlorophenol	820	U	ug/kg
2,4,6-Trichlorophenol	820	U	ug/kg
2,4-Dichlorophenol	820	U	ug/kg
2,4-Dimethylphenol	820	U	ug/kg
2,4-Dinitrophenol	4200	U	ug/kg
2,4-Dinitrotoluene	820	UR	ug/kg
2,6-Dichlorophenol	820	U	ug/kg
2,6-Dinitrotoluene	820	UR	ug/kg
2-Acetylaminofluorene	820	UR	ug/kg
2-Chloronaphthalene	820	UR	ug/kg
2-Chlorophenol	820	U	ug/kg
2-Methylnaphthalene	820	UR	ug/kg
2-Naphthylamine	820	UR	ug/kg
2-Picoline	820	UR	ug/kg
3,3'-Dichlorobenzidine	1600	UR	ug/kg
3,3'-Dimethylbenzidine	4200	UR	ug/kg
3-Methylcholanthrene	820	UR	ug/kg
4,6-Dinitro-o-cresol	4200	UR	ug/kg
4-Aminobiphenyl	820	UR	ug/kg
4-Bromophenyl phenyl ether	820	UR	ug/kg
4-Chlorophenylphenyl ether	820	UR	ug/kg
4-Nitroquinoline 1-oxide	8200	UR	ug/kg
5-Nitro-o-toluidine	820	UR	ug/kg
7,12-dimethylbenz(a)anthracene	820	UR	ug/kg
a-a-Dimethylphenethylamine	4200	UR	ug/kg
Acenaphthene	820	UR	ug/kg
Acenaphthylene	820	UR	ug/kg
Acetophenone	820	UR	ug/kg
Aniline	820	UR	ug/kg
Anthracene	820	UR	ug/kg
Aramite	820	UR	ug/kg
Benzo(a)anthracene	820	UR	ug/kg
Benzo(a)pyrene	820	UR	ug/kg
Benzo(b)fluoranthene	820	UR	ug/kg
Benzo(g,h,i)perylene	820	UR	ug/kg
Benzo(k)fluoranthene	820	UR	ug/kg
Benzyl alcohol	820	UR	ug/kg
Bis(2-chloroethoxy)methane	820	UR	ug/kg
Bis(2-chloroethyl)ether	820	UR	ug/kg
Bis(2-chloroisopropyl)ether	820	UR	ug/kg
Bis(2-ethylhexyl)phthalate	30	UR	ug/kg
Butylbenzylphthalate	820	UR	ug/kg
Chrysene	820	UR	ug/kg
Cresol	820	UR	ug/kg
Cresol, m & p	820	UR	ug/kg
Di-n-butylphthalate	820	UR	ug/kg
Di-n-octylphthalate	820	UR	ug/kg
Diallate	820	UR	ug/kg
Dibenzo(a,h)anthracene	820	UR	ug/kg
Dibenzofuran	820	UR	ug/kg
Diethylphthalate	820	UR	ug/kg
Dimethylphthalate	820	UR	ug/kg
Dinoseb	820	UR	ug/kg
Ethyl methanesulfonate	820	UR	ug/kg
Fluoranthene	820	UR	ug/kg
Fluorene	820	UR	ug/kg
Hexachlorobenzene	820	UR	ug/kg
Hexachlorobutadiene	820	UR	ug/kg
Hexachlorocyclopentadiene	820	UR	ug/kg
Hexachloroethane	820	UR	ug/kg
Hexachloropropene	820	UR	ug/kg
Indeno(1,2,3-cd)pyrene	820	UR	ug/kg
Isophorone	820	UR	ug/kg
Isosafrole	820	UR	ug/kg
Kepone	820	UR	ug/kg
m-Dichlorobenzene	820	UR	ug/kg
m-Dinitrobenzene	820	UR	ug/kg
m-Nitroaniline	4200	UR	ug/
Methapyrilene	8200	UR	ug/
Methyl methanesulfonate	820	UR	ug/
N-Nitrosodi-n-butylamine	820	UR	ug/
n-Nitrosodi-n-propylamine	820	UR	ug/
N-Nitrosodiethylamine	820	UR	ug/
N-Nitrosodimethylamine	820	UR	ug/
N-Nitrosodiphenylamine/Diphenylamine	820	UR	ug/
N-Nitrosomethylethylamine	820	UR	ug/
N-Nitrosomorpholine	820	UR	ug/
N-Nitrosopiperidine	820	UR	ug/
N-Nitrosopyrrolidine	820	UR	ug/
Naphthalene	820	UR	ug/
Nitrobenzene	820	UR	ug/
o,o,o-Triethyl phosphorothioate	820	UR	ug
o-Dichlorobenzene	820	UR	ug
o-Nitroaniline	4200	UR	ug/
o-Nitrophenol	820	U	ug/
o-Toluidine	820	UR	ug/
p-Chloro-m-cresol	820	UR	ug/
p-Chloroaniline	1600	UR	ug/
p-Dichlorobenzene	820	UR	ug/
p-dimethylaminoazobenzene	820	UR	ug/
p-Nitroaniline	4200	UR	ug/
p-Nitrophenol	4200	U	ug/
p-Phenylenediamine	4200	UR	ug/
Pentachlorobenzene	820	UR	ug/
Pentachloronitrobenzene	820	UR	ug/
Pentachlorophenol	4200	U	ug/
Phenacetin	820	UR	ug/
Phenanthrene	820	UR	ug/
Phenol	820	U	ug/
Pronamide	820	UR	ug/
Pyrene	820	UR	ug/
Pyridine	820	UR	ug/
Safrole	820	UR	ug/

ORGANIC DATA VALIDATION

INTERNAL CORRESPONDENCE

TO:	CHUCK BRYAN	DATE:	FEBRUARY 7, 1997
FROM:	EDWARD A. INABINETT	COPIES:	DV FILE

SUBJECT: ORGANIC DATA REVEIEW - SVOA
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG BR008

SAMPLES: 6/Tissue:

S4F-14	S5F-21
S4F-17	S5F-22
S5F-19	AF-7

The sample set for the CTO 007 NAS Key West site, SDG BR008, consists of six (6) tissue environmental samples. All samples were analyzed for Appendix IX semivolitale organic compounds.

The samples were collected by Brown and Root Environmental on August 29th, 1996 and analyzed by Savannah Laboratories & Environmental Services, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. Analyses were conducted using EPA SW-846 Method 8270 analytical and reporting protocols. The data were evaluated according to the following parameters:

* • Surrogate recoveries
* • Initial and continuing calibrations
* • Laboratory and field blank analyses

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Semivolitales

Zero percent surrogate recovery for terphenyl-d14 was reported for sample S4F-17, S5F-19, and S5F-21. Only nondetected results were reported for base/neutral compounds in the affected samples. These compounds were considered unreliable and were rejected, "UR".

The laboratory method blank analysis yielded the following contaminants at the maximum concentration indicated.

Compound	Maximum Concentration	Action Level
di-n-butylphthalate	200 µg/Kg	2000 µg/Kg
bis(2-ethylhexyl)phthalate	320 µg/Kg	3200 µg/Kg

Percent moisture, sample aliquot size, and dilution factors were considered prior to the application of the action level. The positive results for di-n-butylphthalate reported above the detection limit but below the action level were qualified as undetected, "U". Positive results for di-n-butylphthalate found below the detection limit have been deleted and replaced by the detection limit value, then qualified as undetected, "U". This affected samples S5F-22 and S4F-14.

The initial calibration %RSDs for 1,4-phenylenediamine, dinoseb, 4-nitroquinoline-1-oxide, 3,3'-dimethylbenzidine, 4-chloroaniline, 3-nitroaniline, 2,4-dinitrophenol, pentachlorophenol, 3,3'-dichlorobenzidine, and benzo(k)flouranthene were greater than 20%. Failure to meet this quality control criteria indicates that the laboratory's instruments could not achieve satisfactory sensitivity for these compounds, and therefore, the associated positive and nondetected results for these compounds could be compromised. No qualifying action was taken in this limited review.

The continuing calibration %Ds for n-nitrosodimethylamine, pyridine, a,a-dimethylphenethylamine, 2,6-dichlorophenol, 2-napthylamine, 1,4-phenylenediamine, dillate, 4-nitroquinoline-1-oxide, aramine (total), n-nitrosomethylethylamine, hexachlorocyclopentadiene, pentachlorophenol, pyridine, 1,4-dioxane, and 1,3,5-trinitrobenzene were greater than 25%. Failure to meet this quality control criteria indicates that the laboratory's instruments could not achieve satisfactory sensitivity for these compounds, and therefore, the associated positive and nondetected results for these compounds could be compromised. No qualifying action was taken in this limited review.

No other problems were noted.

Additional Comments

None.

Executive Summary

Laboratory Performance: The laboratory method blank yielded two contaminants. Zero percent surrogate recovery was reported for terphenyl-d14 for three samples.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Brown and Root Environmental

Edward A. Inabinett
Engineer/Data Validator

for
Brown and Root Environmental

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

NAS KEY WEST

SDG BR008

TABLE 1 - RECOMMENDATION SUMMARY

Sample No.	SVOA		
S4F-14	A^2		
S4F-17			R^1
S5F-19			R^1
S5F-21			R^1
S5F-22	A^1		
AF-7			

If the field is left blank, the qualifier is A - Accept all data.

A^1 - Accept data, but change positive results for di-n-butylphthalate to a revised detection limit and quality as nondetected "U" as a result of laboratory method blank contamination.

A^2 - Accept data, but change positive results for bis(2-ethylhexyl)phthalate to a revised detection limit and quality as nondetected "U" as a result of laboratory method blank contamination.

R^1 - Reject, "UR" nondetected results for all base/neutral compounds as a result of a zero percent surrogate recovery for terphenyl-d14.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR008

SEMIVOLATILES

Sample Number: AF-7
Sample Date: 8/23/96
Laboratory ID: S685150G-11
QC Type: CS
% Moisture: 0
Location: AF-7

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	330	U	ug/kg
1,2,4-Trichlorobenzene	330	U	ug/kg
1,3,5-Trinitrobenzene	330	U	ug/kg
1,4-Dioxane	330	U	ug/kg
1,4-Naphthoquinone	330	U	ug/kg
1-Naphthylamine	330	U	ug/kg
2,3,4,6-Tetrachlorophenol	1700	U	ug/kg
2,4,5-Trichlorophenol	330	U	ug/kg
2,4,6-Trichlorophenol	330	U	ug/kg
2,4-Dichlorophenol	330	U	ug/kg
2,4-Dimethylphenol	330	U	ug/kg
2,4-Dinitrophenol	1700	U	ug/kg
2,4-Dinitrotoluene	330	U	ug/kg
2,6-Dichlorophenol	330	U	ug/kg
2,6-Dinitrotoluene	330	U	ug/kg
2-Acetylaminofluorene	330	U	ug/kg
2-Chloronaphthalene	330	U	ug/kg
2-Chlorophenol	330	U	ug/kg
2-Methylnaphthalene	330	U	ug/kg
2-Naphthylamine	330	U	ug/kg
2-Picoline	330	U	ug/kg
3,3'-Dichlorobenzidine	660	U	ug/kg
3,3'-Dimethylbenzidine	1700	U	ug/kg
3-Methylcholanthrene	330	U	ug/kg
4,6-Dinitro-o-cresol	1700	U	ug/kg
4-Aminobiphenyl	330	U	ug/kg
4-Bromophenyl phenyl ether	330	U	ug/kg
4-Chlorophenylphenyl ether	330	U	ug/kg
4-Nitroquinoline 1-oxide	3300	U	ug/kg
5-Nitro-o-toluidine	330	U	ug/kg
7,12-dimethylbenz(a)anthracene	330	U	ug/kg
a-a-Dimethylphenethylamine	1700	U	ug/kg
Acenaphthene	330	U	ug/kg
Acenaphthylene	330	U	ug/kg
Acetophenone	330	U	ug/kg
Aniline	330	U	ug/kg
Anthracene	330	U	ug/kg
Aramite	330	U	ug/kg
Benzo(a)anthracene	330	U	ug/kg
Benzo(a)pyrene	330	U	ug/kg
Benzo(b)fluoranthene	330	U	ug/kg
Benzo(g,h,i)perylene	330	U	ug/kg
Benzo(k)fluoranthene	330	U	ug/kg
Benzyl alcohol	330	U	ug/kg
Bis(2-chloroethoxy)methane	330	U	ug/kg
Bis(2-chloroethyl)ether	330	U	ug/kg
Bis(2-chloroisopropyl)ether	330	U	ug/kg
Bis(2-ethylhexyl)phthalate	330	U	ug/kg
Butylbenzylphthalate	330	U	ug/kg
Chrysene	330	U	ug/kg
Cresol	330	U	ug/kg
Cresol, m & p	330	U	ug/kg
Di-n-butylphthalate	330	U	ug/kg
Di-n-octylphthalate	330	U	ug/kg
Diallate	330	U	ug/kg
Dibenzo(a,h)anthracene	330	U	ug/kg
Dibenzofuran	330	U	ug/kg
Diethylphthalate	330	U	ug/kg
Dimethylphthalate	330	U	ug/kg
Dinoseb	330	U	ug/kg
Ethyl methanesulfonate	330	U	ug/kg
Fluoranthene	330	U	ug/kg
Fluorene	330	U	ug/kg
Hexachlorobenzene	330	U	ug/kg
Hexachlorobutadiene	330	U	ug/kg
Hexachlorocyclopentadiene	330	U	ug/kg
Hexachloroethane	330	U	ug/kg
Hexachloropropene	330	U	ug/kg
Indeno(1,2,3-cd)pyrene	330	U	ug/kg
Isophorone	330	U	ug/kg
Isosafrole	330	U	ug/kg
Kepone	330	U	ug/kg
m-Dichlorobenzene	330	U	ug/kg
m-Dinitrobenzene	330	U	ug/kg
m-Nitroaniline	1700	U	ug
Methapyrilene	3300	U	ug
Methyl methanesulfonate	330	U	ug
N-Nitrosodi-n-butylamine	330	U	ug
n-Nitrosodi-n-propylamine	330	U	ug
N-Nitrosodiethylamine	330	U	ug
N-Nitrosodimethylamine	330	U	ug
N-Nitrosodiphenylamine/Diphenylamine	330	U	ug
N-Nitrosomethylethylamine	330	U	ug
N-Nitrosomorpholine	330	U	ug
N-Nitrosopiperidine	330	U	ug
N-Nitrosopyrrolidine	330	U	ug
Naphthalene	330	U	ug/
Nitrobenzene	330	U	ug/
o,o,o-Triethyl phosphorothioate	330	U	ug/
o-Dichlorobenzene	330	U	ug/
o-Nitroaniline	1700	U	ug/
o-Nitrophenol	330	U	ug/
o-Toluidine	330	U	ug/
p-Chloro-m-cresol	330	U	ug/
p-Chloroaniline	660	U	ug/
p-Dichlorobenzene	330	U	ug/
p-dimethylaminoazobenzene	330	U	ug/
p-Nitroaniline	1700	U	ug/
p-Nitrophenol	1700	U	ug/
p-Phenylenediamine	1700	U	ug/
Pentachlorobenzene	330	U	ug/
Pentachloronitrobenzene	330	U	ug/
Pentachlorophenol	1700	U	ug/
Phenacetin	330	U	ug/
Phenanthrene	330	U	ug/
Phenol	330	U	ug/
Pronamide	330	U	ug/
Pyrene	330	U	ug/
Pyridine	330	U	ug/
Safrole	330	U	ug/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR008

SEMIVOLATILES

Sample Number: S4F-14
Sample Date: 8/25/96
Laboratory ID: S685150G-1
QC Type: CS
% Moisture: 0
Location: S4F-14

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	990	U	ug/kg
1,2,4-Trichlorobenzene	990	U	ug/kg
1,3,5-Trinitrobenzene	990	U	ug/kg
1,4-Dioxane	990	U	ug/kg
1,4-Naphthoquinone	990	U	ug/kg
1-Naphthylamine	990	U	ug/kg
2,3,4,6-Tetrachlorophenol	5100	U	ug/kg
2,4,5-Trichlorophenol	990	U	ug/kg
2,4,6-Trichlorophenol	990	U	ug/kg
2,4-Dichlorophenol	990	U	ug/kg
2,4-Dimethylphenol	990	U	ug/kg
2,4-Dinitrophenol	5100	U	ug/kg
2,4-Dinitrotoluene	990	U	ug/kg
2,6-Dichlorophenol	990	U	ug/kg
2,6-Dinitrotoluene	990	U	ug/kg
2-Acetylaminofluorene	990	U	ug/kg
2-Chloronaphthalene	990	U	ug/kg
2-Chlorophenol	990	U	ug/kg
2-Methylnaphthalene	990	U	ug/kg
2-Naphthylamine	990	U	ug/kg
2-Picoline	990	U	ug/kg
3,3'-Dichlorobenzidine	2000	U	ug/kg
3,3'-Dimethylbenzidine	5100	U	ug/kg
3-Methylcholanthrene	990	U	ug/kg
4,6-Dinitro-o-cresol	5100	U	ug/kg
4-Aminobiphenyl	990	U	ug/kg
4-Bromophenyl phenyl ether	990	U	ug/kg
4-Chlorophenylphenyl ether	990	U	ug/kg
4-Nitroquinoline 1-oxide	9900	U	ug/kg
5-Nitro-o-toluidine	990	U	ug/kg
7,12-dimethylbenz(a)anthracene	990	U	ug/kg
a-a-Dimethylphenethylamine	5100	U	ug/kg
enaphthene	990	U	ug/kg
Acenaphthylene	990	U	ug/kg
Acetophenone	990	U	ug/kg
Aniline	990	U	ug/kg
Anthracene	990	U	ug/kg
Aramite	990	U	ug/kg
Benzo(a)anthracene	990	U	ug/kg
Benzo(a)pyrene	990	U	ug/kg
Benzo(b)fluoranthene	990	U	ug/kg
Benzo(g,h,i)perylene	990	U	ug/kg
Benzo(k)fluoranthene	990	U	ug/kg
Benzyl alcohol	990	U	ug/kg
Bis(2-chloroethoxy)methane	990	U	ug/kg
Bis(2-chloroethyl)ether	990	U	ug/kg
Bis(2-chloroisopropyl)ether	990	U	ug/kg
Bis(2-ethylhexyl)phthalate	990	U	ug/kg
Butylbenzylphthalate	990	U	ug/kg
Chrysene	990	U	ug/kg
Cresol	990	U	ug/kg
Cresol, m & p	990	U	ug/kg
Di-n-butylphthalate	990	U	ug/kg
Di-n-octylphthalate	990	U	ug/kg
Diallate	990	U	ug/kg
Dibenzo(a,h)anthracene	990	U	ug/kg
Dibenzofuran	990	U	ug/kg
Diethylphthalate	990	U	ug/kg
Dimethylphthalate	990	U	ug/kg
Dinoseb	990	U	ug/kg
	990	U	ug/kg
Ethyl methanesulfonate	990	U	ug/kg
Fluoranthene	990	U	ug/kg
Fluorene	990	U	ug/kg
Hexachlorobenzene	990	U	ug/kg
Hexachlorobutadiene	990	U	ug/kg
Hexachlorocyclopentadiene	990	U	ug/kg
Hexachloroethane	990	U	ug/kg
Hexachloropropene	990	U	ug/kg
Indeno(1,2,3-cd)pyrene	990	U	ug/kg
Isophorone	990	U	ug/kg
Isosafrole	990	U	ug/kg
Kepone	990	U	ug/kg
m-Dichlorobenzer	990	U	ug/kg
m-Dinitrobenzene	990	U	ug
m-Nitroaniline	5100	U	ug
Methapyrilene	9900	U	ug
Methyl methanesulfonate	990	U	ug
N-Nitrosodi-n-butylamine	990	U	ug
n-Nitrosodi-n-propylamine	990	U	ug
N-Nitrosodiethylamine	990	U	ug
N-Nitrosodimethylamine	990	U	ug
N-Nitrosomethylethylamine	990	U	ug
N-Nitrosomorpholine	990	U	ug
N-Nitrosopiperidine	990	U	ug
N-Nitrosopyrrolidine	990	U	ug
Naphthalene	990	U	ug
Nitrobenzene	990	U	ug
o,o,o-Triethyl phosphorothioate	990	U	ug
o-Dichlorobenzene	990	U	ug
o-Nitroaniline	5100	U	ug
o-Nitrophenol	990	U	ug
o-Toluidine	990	U	ug
p-Chloro-m-cresol	990	U	ug
p-Chloroaniline	2000	U	ug
p-Dichlorobenzene	990	U	ug
p-dimethylaminoazobenzene	990	U	ug
p-Nitroaniline	5100	U	ug
p-Nitrophenol	5100	U	ug
p-Phenylenediamine	5100	U	ug
Pentachlorobenzene	990	U	ug
Pentachloronitrobenzene	990	U	ug
Pentachlorophenol	5100	U	ug
Phenacetin	990	U	ug
Phenanthrene	990	U	ug
Phenol	990	U	ug
Pronamide	990	U	ug
Pyrene	990	U	ug
Pyridine	990	U	ug
Safrole	990	U	ug

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR008

SEMIVOLATILES

Sample Number: S4F-17
Sample Date: 8/26/96
Laboratory ID: S685150G-2
QC Type: CS
% Moisture: 0
Location: S4F-17

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	1100	UR	ug/kg
1,2,4-Trichlorobenzene	1100	UR	ug/kg
1,3,5-Trinitrobenzene	1100	UR	ug/kg
1,4-Dioxane	1100	UR	ug/kg
1,4-Naphthoquinone	1100	UR	ug/kg
1-Naphthylamine	1100	UR	ug/kg
2,3,4,6-Tetrachlorophenol	5700	U	ug/kg
2,4,5-Trichlorophenol	1100	U	ug/kg
2,4,6-Trichlorophenol	1100	U	ug/kg
2,4-Dichlorophenol	1100	U	ug/kg
2,4-Dimethylphenol	1100	U	ug/kg
2,4-Dinitrophenol	5700	U	ug/kg
2,4-Dinitrotoluene	1100	UR	ug/kg
2,6-Dichlorophenol	1100	U	ug/kg
2,6-Dinitrotoluene	1100	UR	ug/kg
2-Acetylaminofluorene	1100	UR	ug/kg
2-Chloronaphthalene	1100	UR	ug/kg
2-Chlorophenol	1100	U	ug/kg
2-Methylnaphthalene	1100	UR	ug/kg
2-Naphthylamine	1100	UR	ug/kg
2-Picoline	1100	UR	ug/kg
3,3'-Dichlorobenzidine	2200	UR	ug/kg
3,3'-Dimethylbenzidine	5700	UR	ug/kg
3-Methylcholanthrene	1100	UR	ug/kg
4,6-Dinitro-o-cresol	5700	UR	ug/kg
4-Aminobiphenyl	1100	UR	ug/kg
4-Bromophenyl phenyl ether	1100	UR	ug/kg
4-Chlorophenylphenyl ether	1100	UR	ug/kg
4-Nitroquinoline 1-oxide	11000	UR	ug/kg
5-Nitro-o-toluidine	1100	UR	ug/kg
7,12-dimethylbenz(a)anthracene	1100	UR	ug/kg
a-a-Dimethylphenethylamine	5700	UR	ug/kg
Acenaphthene	1100	UR	ug/kg
Acenaphthylene	1100	UR	ug/kg
Acetophenone	1100	UR	ug/kg
Aniline	1100	UR	ug/kg
Anthracene	1100	UR	ug/kg
Aramite	1100	UR	ug/kg
Benzo(a)anthracene	1100	UR	ug/kg
Benzo(a)pyrene	1100	UR	ug/kg
Benzo(b)fluoranthene	1100	UR	ug/kg
Benzo(g,h,i)perylene	1100	UR	ug/kg
Benzo(k)fluoranthene	1100	UR	ug/kg
Benzyl alcohol	1100	UR	ug/kg
Bis(2-chloroethoxy)methane	1100	UR	ug/kg
Bis(2-chloroethyl)ether	1100	UR	ug/kg
Bis(2-chloroisopropyl)ether	1100	UR	ug/kg
Bis(2-ethylhexyl)phthalate	1100	UR	ug/kg
Butylbenzylphthalate	1100	UR	ug/kg
Chrysene	1100	UR	ug/kg
Cresol	1100	UR	ug/kg
Cresol, m & p	1100	UR	ug/kg
Di-n-butylphthalate	1100	UR	ug/kg
Di-n-octylphthalate	1100	UR	ug/kg
Diallate	1100	UR	ug/kg
Dibenzo(a,h)anthracene	1100	UR	ug/kg
Dibenzofuran	1100	UR	ug/kg
Diethylphthalate	1100	UR	ug/kg
Dimethylphthalate	1100	UR	ug/kg
DINOSEB	1100	UR	ug/kg
	1100	U	ug/kg
Ethyl methanesulfonate	1100	UR	ug/kg
Fluoranthene	1100	UR	ug/kg
Fluorene	1100	UR	ug/kg
Hexachlorobenzene	1100	UR	ug/kg
Hexachlorobutadiene	1100	UR	ug/kg
Hexachlorocyclopentadiene	1100	UR	ug/kg
Hexachloroethane	1100	UR	ug/kg
Hexachloropropene	1100	UR	ug/kg
Indeno(1,2,3-cd)pyrene	1100	UR	ug/kg
Isophorone	1100	UR	ug/kg
Isosafrole	1100	UR	ug/kg
Kepone	1100	UR	ug/kg
m-Dichlorobenzene	1100	UR	ug/kg
m-Dinitrobenzene	1100	UR	ug/
m-Nitroaniline	5700	UR	ug/
Methapyrilene	11000	UR	ug/
Methyl methanesulfonate	1100	UR	ug/
N-Nitrosodi-n-butylamine	1100	UR	ug/
n-Nitrosodi-n-propylamine	1100	UR	ug/
N-Nitrosodiethylamine	1100	UR	ug/
N-Nitrosodimethylamine	1100	UR	ug/
N-Nitrosomethylethylamine	1100	UR	ug/
N-Nitrosomorpholine	1100	UR	ug/
N-Nitrosopiperidine	1100	UR	ug/
N-Nitrosopyrrolidine	1100	UR	ug/
Naphthalene	1100	UR	ug/
Nitrobenzene	1100	UR	ug/
o,o,o-Triethyl phosphorothioate	1100	UR	ug/
o-Dichlorobenzene	1100	UR	ug/
o-Nitroaniline	5700	UR	ug/
o-Nitrophenol	1100	U	ug/
o-Toluidine	1100	UR	ug/
p-Chloro-m-cresol	1100	UR	ug/
p-Chloroaniline	2200	UR	ug/
p-Dichlorobenzene	1100	UR	ug/
p-dimethylaminoazobenzene	1100	UR	ug/
p-Nitroaniline	5700	UR	ug/
p-Nitrophenol	5700	U	ug/
p-Phenylenediamine	5700	UR	ug/
Pentachlorobenzene	1100	UR	ug/
Pentachloronitrobenzene	1100	UR	ug/
Pentachlorophenol	5700	U	ug/
Phenacetin	1100	UR	ug/
Phenanthrene	1100	UR	ug/
Phenol	1100	U	ug/
Pronamide	1100	UR	ug/
Pyrene	1100	UR	ug/
Pyridine	1100	UR	ug/
Safrole	1100	UR	ug/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR008

SEMIVOLATILES

Sample Number: S5F-19
Sample Date: 8/29/96
Laboratory ID: S685150G-3
QC Type: CS
% Moisture: 0
Location: S5F-19

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	990	UR	ug/kg
1,2,4-Trichlorobenzene	990	UR	ug/kg
1,3,5-Trinitrobenzene	990	UR	ug/kg
1,4-Dioxane	990	UR	ug/kg
1,4-Naphthoquinone	990	UR	ug/kg
1-Naphthylamine	990	UR	ug/kg
2,3,4,6-Tetrachlorophenol	5100	U	ug/kg
2,4,5-Trichlorophenol	990	U	ug/kg
2,4,6-Trichlorophenol	990	U	ug/kg
2,4-Dichlorophenol	990	U	ug/kg
2,4-Dimethylphenol	990	U	ug/kg
2,4-Dinitrophenol	5100	U	ug/kg
2,4-Dinitrotoluene	990	UR	ug/kg
2,6-Dichlorophenol	990	U	ug/kg
2,6-Dinitrotoluene	990	UR	ug/kg
2-Acetylaminofluorene	990	UR	ug/kg
2-Chloronaphthalene	990	UR	ug/kg
2-Chlorophenol	990	U	ug/kg
2-Methylnaphthalene	990	UR	ug/kg
2-Naphthylamine	990	UR	ug/kg
2-Picoline	990	UR	ug/kg
3,3'-Dichlorobenzidine	2000	UR	ug/kg
3,3'-Dimethylbenzidine	5100	UR	ug/kg
3-Methylcholanthrene	990	UR	ug/kg
4,6-Dinitro-o-cresol	5100	UR	ug/kg
4-Aminobiphenyl	990	UR	ug/kg
4-Bromophenyl phenyl ether	990	UR	ug/kg
4-Chlorophenylphenyl ether	990	UR	ug/kg
4-Nitroquinoline 1-oxide	9900	UR	ug/kg
5-Nitro-o-toluidine	990	UR	ug/kg
7,12-dimethylbenz(a)anthracene	990	UR	ug/kg
a-a-Dimethylphenethylamine	5100	UR	ug/kg
naphthene	990	UR	ug/kg
Acenaphthylene	990	UR	ug/kg
Acetophenone	990	UR	ug/kg
Aniline	990	UR	ug/kg
Anthracene	990	UR	ug/kg
Aramite	990	UR	ug/kg
Benzo(a)anthracene	990	UR	ug/kg
Benzo(a)pyrene	990	UR	ug/kg
Benzo(b)fluoranthene	990	UR	ug/kg
Benzo(g,h,i)perylene	990	UR	ug/kg
Benzo(k)fluoranthene	990	UR	ug/kg
Benzyl alcohol	990	UR	ug/kg
Bis(2-chloroethoxy)methane	990	UR	ug/kg
Bis(2-chloroethyl)ether	990	UR	ug/kg
Bis(2-chloroisopropyl)ether	990	UR	ug/kg
Bis(2-ethylhexyl)phthalate	990	UR	ug/kg
Butylbenzylphthalate	990	UR	ug/kg
Chrysene	990	UR	ug/kg
Cresol	990	UR	ug/kg
Cresol, m & p	990	UR	ug/kg
Di-n-butylphthalate	990	UR	ug/kg
Di-n-octylphthalate	990	UR	ug/kg
Diallate	990	UR	ug/kg
Dibenzo(a,h)anthracene	990	UR	ug/kg
Dibenzofuran	990	UR	ug/kg
Diethylphthalate	990	UR	ug/kg
Dimethylphthalate	990	UR	ug/kg
DINOSEB	990	UR	ug/kg
	990	U	ug/kg
Ethyl methanesulfonate	990	UR	ug/kg
Fluoranthene	990	UR	ug/kg
Fluorene	990	UR	ug/kg
Hexachlorobenzene	990	UR	ug/kg
Hexachlorobutadiene	990	UR	ug/kg
Hexachlorocyclopentadiene	990	UR	ug/kg
Hexachloroethane	990	UR	ug/kg
Hexachloropropene	990	UR	ug/kg
Indeno(1,2,3-cd)pyrene	990	UR	ug/kg
Isophorone	990	UR	ug/kg
Isosafrole	990	UR	ug/kg
Kepone	990	UR	ug/kg
m-Dichlorobenzene	990	UR	ug/kg
m-Dinitrobenzene	990	UR	ug/k
m-Nitroaniline	5100	UR	ug/k
Methapyrilene	9900	UR	ug/k
Methyl methanesulfonate	990	UR	ug/k
N-Nitrosodi-n-butylamine	990	UR	ug/k
n-Nitrosodi-n-propylamine	990	UR	ug/k
N-Nitrosodiethylamine	990	UR	ug/k
N-Nitrosodimethylamine	990	UR	ug/k
N-Nitrosomethylethylamine	990	UR	ug/k
N-Nitrosomorpholine	990	UR	ug/k
N-Nitrosopiperidine	990	UR	ug/k
N-Nitrosopyrrolidine	990	UR	ug/k
Naphthalene	990	UR	ug/k
Nitrobenzene	990	UR	ug/k
o,o,o-Triethyl phosphorothioate	990	UR	ug/k
o-Dichlorobenzene	990	UR	ug/k
o-Nitroaniline	5100	UR	ug/k
o-Nitrophenol	990	U	ug/k
o-Toluidine	990	UR	ug/k
p-Chloro-m-cresol	990	UR	ug/k
p-Chloroaniline	2000	UR	ug/k
p-Dichlorobenzene	990	UR	ug/k
p-dimethylaminoazobenzene	990	UR	ug/k
p-Nitroaniline	5100	UR	ug/k
p-Nitrophenol	5100	U	ug/k
p-Phenylenediamine	5100	UR	ug/k
Pentachlorobenzene	990	UR	ug/k
Pentachloronitrobenzene	990	UR	ug/k
Pentachlorophenol	5100	U	ug/k
Phenacetin	990	UR	ug/k
Phenanthrene	990	UR	ug/k
Phenol	620	J	ug/k
Pronamide	990	UR	ug/k
Pyrene	990	UR	ug/k
Pyridine	990	UR	ug/k
Safrole	990	UR	ug/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR008

SEMIVOLATILES

Sample Number: S5F-21
Sample Date: 8/26/96
Laboratory ID: S685150G-4
QC Type: CS
% Moisture: 0
Location: S5F-21

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	660	UR	ug/kg
1,2,4-Trichlorobenzene	660	UR	ug/kg
1,3,5-Trinitrobenzene	660	UR	ug/kg
1,4-Dioxane	660	UR	ug/kg
1,4-Naphthoquinone	660	UR	ug/kg
1-Naphthylamine	660	UR	ug/kg
2,3,4,6-Tetrachlorophenol	3400	U	ug/kg
2,4,5-Trichlorophenol	660	U	ug/kg
2,4,6-Trichlorophenol	660	U	ug/kg
2,4-Dichlorophenol	660	U	ug/kg
2,4-Dimethylphenol	660	U	ug/kg
2,4-Dinitrophenol	3400	U	ug/kg
2,4-Dinitrotoluene	660	UR	ug/kg
2,6-Dichlorophenol	660	U	ug/kg
2,6-Dinitrotoluene	660	UR	ug/kg
2-Acetylaminofluorene	660	UR	ug/kg
2-Chloronaphthalene	660	UR	ug/kg
2-Chlorophenol	660	U	ug/kg
2-Methylnaphthalene	660	UR	ug/kg
2-Naphthylamine	660	UR	ug/kg
2-Picoline	660	UR	ug/kg
3,3'-Dichlorobenzidine	1300	UR	ug/kg
3,3'-Dimethylbenzidine	3400	UR	ug/kg
3-Methylcholanthrene	660	UR	ug/kg
4,6-Dinitro-o-cresol	3400	UR	ug/kg
4-Aminobiphenyl	660	UR	ug/kg
4-Bromophenyl phenyl ether	660	UR	ug/kg
4-Chlorophenylphenyl ether	660	UR	ug/kg
4-Nitroquinoline 1-oxide	6600	UR	ug/kg
5-Nitro-o-toluidine	660	UR	ug/kg
7,12-dimethylbenz(a)anthracene	660	UR	ug/kg
a-a-Dimethylphenethylamine	3400	UR	ug/kg
Acenaphthene	660	UR	ug/kg
Acenaphthylene	660	UR	ug/kg
Acetophenone	660	UR	ug/kg
Aniline	660	UR	ug/kg
Anthracene	660	UR	ug/kg
Aramite	660	UR	ug/kg
Benzo(a)anthracene	660	UR	ug/kg
Benzo(a)pyrene	660	UR	ug/kg
Benzo(b)fluoranthene	660	UR	ug/kg
Benzo(g,h,i)perylene	660	UR	ug/kg
Benzo(k)fluoranthene	660	UR	ug/kg
Benzyl alcohol	660	UR	ug/kg
Bis(2-chloroethoxy)methane	660	UR	ug/kg
Bis(2-chloroethyl)ether	660	UR	ug/kg
Bis(2-chloroisopropyl)ether	660	UR	ug/kg
Bis(2-ethylhexyl)phthalate	660	UR	ug/kg
Butylbenzylphthalate	660	UR	ug/kg
Chrysene	660	UR	ug/kg
Cresol	660	UR	ug/kg
Cresol, m & p	660	UR	ug/kg
Di-n-butylphthalate	660	UR	ug/kg
Di-n-octylphthalate	660	UR	ug/kg
Diallate	660	UR	ug/kg
Dibenzo(a,h)anthracene	660	UR	ug/kg
Dibenzofuran	660	UR	ug/kg
Diethylphthalate	660	UR	ug/kg
Dimethylphthalate	660	UR	ug/kg
DINOSEB	660	UR	ug/kg
	660	U	ug/kg
Ethyl methanesulfonate	660	UR	ug/kg
Fluoranthene	660	UR	ug/kg
Fluorene	660	UR	ug/kg
Hexachlorobenzene	660	UR	ug/kg
Hexachlorobutadiene	660	UR	ug/kg
Hexachlorocyclopentadiene	660	UR	ug/kg
Hexachloroethane	660	UR	ug/kg
Hexachloropropene	660	UR	ug/kg
Indeno(1,2,3-cd)pyrene	660	UR	ug/kg
Isophorone	660	UR	ug/kg
Isosafrole	660	UR	ug/kg
Kepone	660	UR	ug/kg
m-Dichlorobenzene	660	UR	ug/kg
m-Dinitrobenzene	660	UR	ug/kg
m-Nitroaniline	3400	UR	ug/kg
Methapyrilene	6600	UR	ug/kg
Methyl methanesulfonate	660	UR	ug/kg
N-Nitrosodi-n-butylamine	660	UR	ug/kg
n-Nitrosodi-n-propylamine	660	UR	ug/kg
N-Nitrosodiethylamine	660	UR	ug/kg
N-Nitrosodimethylamine	660	UR	ug/kg
N-Nitrosomethylethylamine	660	UR	ug/kg
N-Nitrosomorpholine	660	UR	ug/kg
N-Nitrosopiperidine	660	UR	ug/kg
N-Nitrosopyrrolidine	660	UR	ug/kg
Naphthalene	660	UR	ug/kg
Nitrobenzene	660	UR	ug/kg
o,o,o-Triethyl phosphorothioate	660	UR	ug/kg
o-Dichlorobenzene	660	UR	ug/kg
o-Nitroaniline	3400	UR	ug/kg
o-Nitrophenol	660	U	ug/kg
o-Toluidine	660	UR	ug/kg
p-Chloro-m-cresol	660	UR	ug/kg
p-Chloroaniline	1300	UR	ug/kg
p-Dichlorobenzene	660	UR	ug/kg
p-dimethylaminoazobenzene	660	UR	ug/kg
p-Nitroaniline	3400	UR	ug/kg
p-Nitrophenol	3400	U	ug/kg
p-Phenylenediamine	3400	UR	ug/kg
Pentachlorobenzene	660	UR	ug/kg
Pentachloronitrobenzene	660	UR	ug/kg
Pentachlorophenol	3400	U	ug/kg
Phenacetin	660	UR	ug/kg
Phenanthrene	660	UR	ug/kg
Phenol	660	U	ug/kg
Pronamide	660	UR	ug/kg
Pyrene	660	UR	ug/kg
Pyridine	660	UR	ug/kg
Safrole	660	UR	ug/kg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR008

SEMIVOLATILES

Sample Number: S5F-22
Sample Date: 8/26/96
Laboratory ID: S685150G-5
QC Type: CS
% Moisture: 0
Location: S5F-22

	RESULT	QUAL	UNITS
1,2,4,5-Tetrachlorobenzene	660	U	ug/kg
1,2,4-Trichlorobenzene	660	U	ug/kg
1,3,5-Trinitrobenzene	660	U	ug/kg
1,4-Dioxane	660	U	ug/kg
1,4-Naphthoquinone	660	U	ug/kg
1-Naphthylamine	660	U	ug/kg
2,3,4,6-Tetrachlorophenol	3400	U	ug/kg
2,4,5-Trichlorophenol	660	U	ug/kg
2,4,6-Trichlorophenol	660	U	ug/kg
2,4-Dichlorophenol	660	U	ug/kg
2,4-Dimethylphenol	660	U	ug/kg
2,4-Dinitrophenol	3400	U	ug/kg
2,4-Dinitrotoluene	660	U	ug/kg
2,6-Dichlorophenol	660	U	ug/kg
2,6-Dinitrotoluene	660	U	ug/kg
2-Acetylaminofluorene	660	U	ug/kg
2-Chloronaphthalene	660	U	ug/kg
2-Chlorophenol	660	U	ug/kg
2-Methylnaphthalene	660	U	ug/kg
2-Naphthylamine	660	U	ug/kg
2-Picoline	660	U	ug/kg
3,3'-Dichlorobenzidine	1300	U	ug/kg
3,3'-Dimethylbenzidine	3400	U	ug/kg
3-Methylcholanthrene	660	U	ug/kg
4,6-Dinitro-o-cresol	3400	U	ug/kg
4-Aminobiphenyl	660	U	ug/kg
4-Bromophenyl phenyl ether	660	U	ug/kg
4-Chlorophenylphenyl ether	660	U	ug/kg
4-Nitroquinoline 1-oxide	6600	U	ug/kg
5-Nitro-o-toluidine	660	U	ug/kg
7,12-dimethylbenz(a)anthracene	660	U	ug/kg
a-a-Dimethylphenethylamine	3400	U	ug/kg
Acenaphthene	660	U	ug/kg
Acenaphthylene	660	U	ug/kg
Acetophenone	660	U	ug/kg
Aniline	660	U	ug/kg
Anthracene	660	U	ug/kg
Aramite	660	U	ug/kg
Benzo(a)anthracene	660	U	ug/kg
Benzo(a)pyrene	660	U	ug/kg
Benzo(b)fluoranthene	660	U	ug/kg
Benzo(g,h,i)perylene	660	U	ug/kg
Benzo(k)fluoranthene	660	U	ug/kg
Benzyl alcohol	660	U	ug/kg
Bis(2-chloroethoxy)methane	660	U	ug/kg
Bis(2-chloroethyl)ether	660	U	ug/kg
Bis(2-chloroisopropyl)ether	660	U	ug/kg
Bis(2-ethylhexyl)phthalate	660	U	ug/kg
Butylbenzylphthalate	660	U	ug/kg
Chrysene	660	U	ug/kg
Cresol	660	U	ug/kg
Cresol, m & p	660	U	ug/kg
Di-n-butylphthalate	660	U	ug/kg
Di-n-octylphthalate	660	U	ug/kg
Diallate	660	U	ug/kg
Dibenzo(a,h)anthracene	660	U	ug/kg
Dibenzofuran	660	U	ug/kg
Diethylphthalate	660	U	ug/kg
Dimethylphthalate	660	U	ug/kg
Dinoseb	660	U	ug/kg
	660	U	ug/kg
Ethyl methanesulfonate	660	U	ug/kg
Fluoranthene	660	U	ug/kg
Fluorene	660	U	ug/kg
Hexachlorobenzene	660	U	ug/kg
Hexachlorobutadiene	660	U	ug/kg
Hexachlorocyclopentadiene	660	U	ug/kg
Hexachloroethane	660	U	ug/kg
Hexachloropropene	660	U	ug/kg
Indeno(1,2,3-cd)pyrene	660	U	ug/kg
Isophorone	660	U	ug/kg
Isosafrole	660	U	ug/kg
Kepone	660	U	ug/kg
m-Dichlorobenzene	660	U	ug/kg
m-Dinitrobenzene	660	U	ug/
m-Nitroaniline	3400	U	ug/
Methapyrilene	6600	U	ug/
Methyl methanesulfonate	660	U	ug/
N-Nitrosodi-n-butylamine	660	U	ug/
n-Nitrosodi-n-propylamine	660	U	ug/
N-Nitrosodiethylamine	660	U	ug/
N-Nitrosodimethylamine	660	U	ug/
N-Nitrosomethylethylamine	660	U	ug/
N-Nitrosomorpholine	660	U	ug/
N-Nitrosopiperidine	660	U	ug/
N-Nitrosopyrrolidine	660	U	ug/
Naphthalene	660	U	ug/
Nitrobenzene	660	U	ug/
o,o,o-Triethyl phosphorothioate	660	U	ug/
o-Dichlorobenzene	660	U	ug/
o-Nitroaniline	3400	U	ug/
o-Nitrophenol	660	U	ug/
o-Toluidine	660	U	ug/
p-Chloro-m-cresol	660	U	ug/
p-Chloroaniline	1300	U	ug/
p-Dichlorobenzene	660	U	ug/
p-dimethylaminoazobenzene	660	U	ug/
p-Nitroaniline	3400	U	ug/
p-Nitrophenol	3400	U	ug/
p-Phenylenediamine	3400	U	ug/
Pentachlorobenzene	660	U	ug/
Pentachloronitrobenzene	660	U	ug/
Pentachlorophenol	3400	U	ug/
Phenacetin	660	U	ug/
Phenanthrene	660	U	ug/
Phenol	660	U	ug/
Pronamide	660	U	ug/
Pyrene	660	U	ug/
Pyridine	660	U	ug/
Safrole	660	U	ug/

INORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 11, 1997**
FROM:	**JULEA F. BRADLEY**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA REVIEW – TAL METALS**
CTO 007 – KEY WEST, FLORIDA
SDG – BR009 (S685530)

SAMPLES: 12/Tissue:

B5L-11	B5L-13	B5L-14	B5L-15
B5L-16	B5L-18	B5L-19	B5L-21
B5L-22	B5L-23	B5L-24	B5L-25

Overview

The sample set for CTO 007, Key West, BR009 (S685530) consists of twelve (12) tissue environmental samples. No field duplicates are included within this SDG.

All samples were analyzed for Target Analyte List (TAL) metals. The samples were collected by Brown & Root Environmental on September 14, 1996 and analyzed by Savannah Laboratories under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- Calibration Verifications
- * Laboratory Blank Analyses
- Matrix Spike Results

*Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/preparation/field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level (tissue)
aluminum	11.9 ug/L	11.9 mg/kg
barium	1.0 ug/L	1.0 mg/kg
calcium	19.2 ug/L	19.2 mg/kg
copper	5.2 ug/L	5.2 mg/kg
iron	17.2 ug/L	17.2 mg/kg
lead*	0.387 mg/kg	1.94 mg/kg
manganese	1.2 ug/L	1.2 mg/kg
mercury*	0.013mg/kg	0.065 mg/kg
silver	1.2 ug/L	1.2 mg/kg
sodium	39.1 ug/L	39.1 mg/kg
vanadium	2.9 ug/L	2.9 mg/kg

* maximum concentration found in the preparation blank.

Samples affected: All

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for aluminum, barium, iron, lead, manganese, mercury, silver, and vanadium have been qualified as nondetected, "U." No action was taken for the remaining analytes since either the results were greater than the action level or were nondetects.

Notes

The ICP Contract Required Control Limit (CRDL) Standard percent recoveries (%Rs) for cadmium exceeded the control limits. However, no validation actions were taken for CRDL Standard %Rs.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method/ preparation blanks.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed in accordance with the "National Functional Guidelines for Inorganic Review," February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality. "I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Brown & Root Environmental
Julea F. Bradley
Environmental Scientist/Data Validator

Brown & Root Environmental
for Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

KEY WEST
SDG BR009

TABLE 1 - RECOMMENDATION SUMMARY

Aluminum	A[1]	Magnesium	
Antimony		Manganese	A[1]
Arsenic		Mercury	A[1]
Barium	A[1]	Nickel	
Beryllium		Potassium	
Cadmium		Selenium	
Calcium		Silver	A[1]
Chromium		Sodium	
Cobalt		Thallium	
Copper		Vanadium	A[1]
Iron	A[1]	Zinc	
Lead	A[1]		

If the field is left blank, the qualifier is A - Accept all data.

A[1] - Accept data but qualify as nondetected, "U", as a result of laboratory blank contamination.

APPENDIX A
Qualified Analytical Results

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR009

INORGANICS

Sample Number: B5L-11
Sample Date: 9/14/96
Laboratory ID: S685530-8
QC Type: CS
% Moisture: 0
Location: B5L-11

	RESULT	QUAL	UNITS
Aluminum	1.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	11.1		mg/kg
Barium	0.87	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	25300		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	14.2		mg/kg
Iron	1.8	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	3080		mg/kg
Manganese	0.64	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2270		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	3300		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.61	U	mg/kg
Zinc	17.9		mg/kg

Sample Number: B5L-13
Sample Date: 9/14/96
Laboratory ID: S685530-10
QC Type: CS
% Moisture: 0
Location: B5L-13

	RESULT	QUAL	UNITS
Aluminum	1.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	15.7		mg/kg
Barium	1.1		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	34900		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	21.4		mg/kg
Iron	2.7	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	4210		mg/kg
Manganese	0.48	U	mg/kg
Mercury	0.03	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2240		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	6110		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	16.3		mg/kg

Sample Number: B5L-14
Sample Date: 9/14/96
Laboratory ID: S685530-11
QC Type: CS
% Moisture: 0
Location: B5L-14

	RESULT	QUAL	UN
Aluminum	1.7	U	mg
Antimony	2.4	U	mg
Arsenic	12.1		mg
Barium	0.85	U	mg
Beryllium	0.04	U	mg
Cadmium	0.53	U	mg
Calcium	27400		mg
Chromium	0.82	U	mg
Cobalt	0.37	U	mg
Copper	25.4		mg
Iron	2.6	U	mg
Lead	0.46	U	mg
Magnesium	2920		mg
Manganese	0.73	U	mg
Mercury	0.01	U	mg
Nickel	0.85	U	mg
Potassium	1980		mg
Selenium	1	U	mg
Silver	0.32	U	mg
Sodium	5370		mg
Thallium	0.81	U	mg
Vanadium	0.45	U	mg
Zinc	16.2		mg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR009

INORGANICS

Sample Number: B5L-15
Sample Date: 9/14/96
Laboratory ID: S685530-2
QC Type: CS
% Moisture: 0
Location: B5L-15

	RESULT	QUAL	UNITS
Aluminum	1.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	4.7		mg/kg
Barium	0.3	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.7		mg/kg
Calcium	10100		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	27.9		mg/kg
Iron	2.7	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	1350		mg/kg
Manganese	0.47	U	mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2300		mg/kg
Selenium	1	U	mg/kg
Silver	0.47	U	mg/kg
Sodium	5980		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.49	U	mg/kg
Zinc	21.2		mg/kg

Sample Number: B5L-16
Sample Date: 9/14/96
Laboratory ID: S685530-12
QC Type: CS
% Moisture: 0
Location: B5L-16

	RESULT	QUAL	UNITS
Aluminum	1.9	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	13.5		mg/kg
Barium	1.1		mg/kg
Beryllium	0.04		mg/kg
Cadmium	1.5		mg/kg
Calcium	28600		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	29.5		mg/kg
Iron	4.4	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	3370		mg/kg
Manganese	1.7		mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2430		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	4580		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	21.3		mg/kg

Sample Number: B5L-18
Sample Date: 9/14/96
Laboratory ID: S685530-13
QC Type: CS
% Moisture: 0
Location: B5L-18

	RESULT	QUAL	UNIT
Aluminum	1.7	U	mg/k
Antimony	2.4	U	mg/k
Arsenic	15.7		mg/k
Barium	0.74	U	mg/k
Beryllium	0.04	U	mg/k
Cadmium	0.95		mg/k
Calcium	22600		mg/k
Chromium	0.82	U	mg/k
Cobalt	0.37	U	mg/k
Copper	19.1		mg/k
Iron	4.8	U	mg/k
Lead	0.34	U	mg/k
Magnesium	2720		mg/k
Manganese	1.6		mg/k
Mercury	0.02	U	mg/k
Nickel	0.85	U	mg/k
Potassium	2460		mg/k
Selenium	1	U	mg/k
Silver	0.24	U	mg/k
Sodium	3500		mg/k
Thallium	0.81	U	mg/k
Vanadium	0.64	U	mg/k
Zinc	20.4		mg/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR009

INORGANICS

Sample Number: B5L-19
Sample Date: 9/14/96
Laboratory ID: S685530-9
QC Type: CS
% Moisture: 0
Location: B5L-19

	RESULT	QUAL	UNITS
Aluminum	1.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	10.9		mg/kg
Barium	1.2		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	1.1		mg/kg
Calcium	35200		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	37.1		mg/kg
Iron	5	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	3990		mg/kg
Manganese	1.5		mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2510		mg/kg
Selenium	1	U	mg/kg
Silver	0.39	U	mg/kg
Sodium	4470		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.49	U	mg/kg
Zinc	25.4		mg/kg

Sample Number: B5L-21
Sample Date: 9/14/96
Laboratory ID: S685530-7
QC Type: CS
% Moisture: 0
Location: B5L-21

	RESULT	QUAL	UNITS
Aluminum	1.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	11		mg/kg
Barium	0.44	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.67		mg/kg
Calcium	11100		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	23		mg/kg
Iron	1.8	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	1590		mg/kg
Manganese	0.81	U	mg/kg
Mercury	0.03	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	3240		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	3590		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	23.3		mg/kg

Sample Number: B5L-22
Sample Date: 9/14/96
Laboratory ID: S685530-1
QC Type: CS
% Moisture: 0
Location: B5L-22

	RESULT	QUAL	UN
Aluminum	1.8	U	mg
Antimony	2.4	U	mg
Arsenic	11.5		mg
Barium	0.92	U	mg
Beryllium	0.04	U	mg
Cadmium	1.1		mg
Calcium	20600		mg
Chromium	0.82	U	mg
Cobalt	0.37	U	mg
Copper	33.3		mg
Iron	3.1	U	mg
Lead	0.34	U	mg
Magnesium	2590		mg/
Manganese	1.3		mg/
Mercury	0.01	U	mg/
Nickel	0.85	U	mg/
Potassium	3090		mg/
Selenium	1	U	mg/
Silver	0.32	U	mg/
Sodium	3780		mg/
Thallium	0.81	U	mg/
Vanadium	0.45	U	mg/
Zinc	22.5		mg/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR009

INORGANICS

Sample Number: B5L-23
Sample Date: 9/14/96
Laboratory ID: S685530-3
QC Type: CS
% Moisture: 0
Location: B5L-23

	RESULT	QUAL	UNITS
Aluminum	2.4	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	8.9		mg/kg
Barium	0.63	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.94		mg/kg
Calcium	20900		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	21.8		mg/kg
Iron	2.8	U	mg/kg
Lead	0.47	U	mg/kg
Magnesium	2620		mg/kg
Manganese	0.85	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2050		mg/kg
Selenium	1	U	mg/kg
Silver	0.24	U	mg/kg
Sodium	4590		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.55	U	mg/kg
Zinc	15.7		mg/kg

Sample Number: B5L-24
Sample Date: 9/14/96
Laboratory ID: S685530-20
QC Type: CS
% Moisture: 0
Location: B5L-24

	RESULT	QUAL	UNITS
Aluminum	1.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	10.1		mg/kg
Barium	0.11	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	2200		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	21.9		mg/kg
Iron	3.2	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	562		mg/kg
Manganese	0.42	U	mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	1770		mg/kg
Selenium	1	U	mg/kg
Silver	0.27	U	mg/kg
Sodium	3290		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	12.5		mg/kg

Sample Number: B5L-25
Sample Date: 9/14/96
Laboratory ID: S685530-4
QC Type: CS
% Moisture: 0
Location: B5L-25

	RESULT	QUAL	UN
Aluminum	1.7	U	mg
Antimony	2.4	U	mg
Arsenic	15.7		mg
Barium	0.21	U	mg
Beryllium	0.04	U	mg
Cadmium	0.87		mg
Calcium	7010		mg
Chromium	0.82	U	mg
Cobalt	0.37	U	mg/
Copper	21.5		mg/
Iron	2.3	U	mg/
Lead	0.35	U	mg/
Magnesium	1160		mg/
Manganese	0.51	U	mg/
Mercury	0.02	U	mg/
Nickel	0.85	U	mg/
Potassium	3200		mg/
Selenium	1	U	mg/
Silver	0.23	U	mg/
Sodium	3770		mg/
Thallium	0.81	U	mg/
Vanadium	0.45	U	mg/
Zinc	22.3		mg/

ORGANIC DATA VALIDATION

INTERNAL CORRESPONDENCE

TO:	CHUCK BRYAN	DATE:	JANUARY 22, 1997
FROM:	EDWARD A. INABINETT	COPIES:	DV FILE

SUBJECT: ORGANIC DATA REVIEW - PEST/PCB
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG BR009

SAMPLES: 12/Tissue:

B5L-22	B5L-11	B5L-18
B5L-15	B5L-19	B5L-24
B5L-23	B5L-13	
B5L-25	B5L-14	
B5L-21	B5L-16	

The sample set for the CTO 007 NAS Key West site, SDG BR009, consists of twelve (12) tissue environmental samples. All samples were analyzed for Target Compound List (TCL) pesticide/PCB organic compounds. The field crew designated sample B5L-13 for Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis.

The samples were collected by Brown and Root Environmental on September 14th, 1996 and analyzed by Savannah Laboratories & Environmental Services, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. Analyses were conducted using EPA SW-846 Method 8080 analytical and reporting protocols. The data were evaluated according to the following parameters:

- * Holding times
- Surrogate recoveries
- Initial and continuing calibrations
- * Laboratory and field blank analyses
- * Compound quantitation

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Pesticide/PCBs

The holding time from date of collection to date of extraction exceeded 14 days in all samples. Since there are no holding time requirements for tissue data, no action was taken.

The laboratory method blank analysis yielded the following contaminants at the maximum concentration indicated.

Compound	Maximum Concentration	Action Level
4,4'-DDD	0.13 µg/Kg	0.65 µg/Kg
endosulfan sulfate	1.20 µg/Kg	6.00 µg/Kg

Percent moisture, sample aliquot size, and dilution factors were considered prior to the application of the action level. The positive results for 4,4'-DDD and endosulfan sulfate reported above the detection limit but below the action level were qualified as undetected, "U". Positive results for 4,4'-DDD and endosulfan sulfate found below the detection limit have been deleted and replaced by the detection limit value, then qualified as undetected, "U".

The laboratory qualifier "P" was removed from all target compound data with a %D above 25% and less than 100% between positive results on columns 1 and 2.

Samples B5L-23, B5L-25, B5L-14, and B5L-24 had high %Ds (greater than 100%) between positive results on columns 1 and 2 for several pesticide compounds. Positive results for these compounds were qualified as estimated "J" in these aforementioned samples.

The case narrative states that confirmation of certain compounds was not feasible due to coeluting matrix interference on one of the GC columns. Thus, the concentrations reported were based on quantitation from a single column. As a result, the concentrations for these compounds were qualified as estimated "J". This affected samples B5L-15, B5L-25, B5L-21, B5L-11, B5L-19, B5L-16, B5L-18, and B5L-24.

No other problems were noted.

Additional Comments

None.

Executive Summary

Laboratory Performance: Holding times exceeded 14 days for all samples.

Other Factors Affecting Data Quality: Several pesticide/PCB compounds had high %Ds between positive results on columns 1 and 2. Endosulfan sulfate and 4,4'-DDD were detected in laboratory method blanks.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Brown and Root Environmental

Edward A. Inabinett
Engineer/Data Validator

for
Brown and Root Environmental

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

NAS KEY WEST

SDG BR009

TABLE 1 - RECOMMENDATION SUMMARY

Sample No.	PEST/PCB		
B5L-22	A[1,2]	J[3]	
B5L-15	A[1,2]	J[8,9]	
B5L-23	A[2]	J[7]	
B5L-25	A[1,2]	J[2,5,9]	
B5L-21	A[2]	J[8,9]	
B5L-11	A[1,2]	J[9]	
B5L-19	A[1,2]	J[2,8,9]	
B5L-13	A[1,2]	J[1]	
B5L-14	A[1,2]	J[4,6]	
B5L-16	A[1]	J[8,9]	
B5L-18	A[1,2]	J[2,8,9]	
B5L-24	A[1,2]	J[5,8]	

If the field is left blank, the qualifier is A - Accept all data.

A[1] - Accept data, but change positive results for 4,4'-DDD to a revised detection limit and qualify as nondetected "U" as a result of laboratory method blank contamination.

A[2] - Accept data, but change positive results for endosulfan sulfate to a revised detection limit and qualify as nondetected "U" as a result of laboratory method blank contamination.

J[1] - Accept data, but remove the laboratory qualifier "P" for aldrin as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J[2] - Accept data, but remove the laboratory qualifier "P" for heptachlor as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J[3] - Accept data, but remove the laboratory qualifier "P" for dieldrin as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J[4] - Accept data, but remove the laboratory qualifier "P" for gamma-BHC as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J[5] - Accept data, but qualify positive results for beta-BHC as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^6 - Accept data, but qualify positive results for aldrin as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^7 - Accept data, but qualify positive results for heptachlor as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^8 - Accept data, but qualify positive results for endrin as estimated "J" as a result of concentrations reported based on quantitation from a single column.

J^9 - Accept data, but qualify positive results for endosulfan II as estimated "J" as a result of concentrations reported based on quantitation from a single column.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR009

PESTICIDES/PCBs

Sample Number: B5L-11
Sample Date: 9/14/96
Laboratory ID: S685530-8
QC Type: CS
% Moisture: 0
Location: B5L-11

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	0.12	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B5L-13
Sample Date: 9/14/96
Laboratory ID: S685530-10
QC Type: CS
% Moisture: 0
Location: B5L-13

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	0.14	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.14	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B5L-14
Sample Date: 9/14/96
Laboratory ID: S685530-11
QC Type: CS
% Moisture: 0
Location: B5L-14

	RESULT	QUAL	UI
4,4'-DDD	3.3	U	u
4,4'-DDE	3.3	U	u
4,4'-DDT	3.3	U	u
Aldrin	0.076	J	u
alpha-BHC	1.7	U	u
Aroclor-1016	33	U	u
Aroclor-1221	67	U	u
Aroclor-1232	33	U	u
Aroclor-1242	33	U	u
Aroclor-1248	33	U	u
Aroclor-1254	33	U	u
Aroclor-1260	33	U	u
beta-BHC	1.7	U	u
Chlordane	17	U	u
Chlorobenzilate	17	U	u
delta-BHC	1.7	U	u
Dieldrin	3.3	U	u
Endosulfan I	1.7	U	u
Endosulfan II	3.3	U	u
Endosulfan sulfate	3.3	U	u
Endrin	3.3	U	u
Endrin aldehyde	3.3	U	u
gamma-BHC	0.025	J	u
Heptachlor	1.7	U	u
Heptachlor epoxide	1.7	U	u
Isodrin	3.3	U	u
Methoxychlor	17	U	u
Toxaphene	170	U	u

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

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PESTICIDES/PCBs

Sample Number: B5L-15
Sample Date: 9/14/96
Laboratory ID: S685530-2
QC Type: CS
% Moisture: 0
Location: B5L-15

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	0.22	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.061	J	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B5L-16
Sample Date: 9/14/96
Laboratory ID: S685530-12
QC Type: CS
% Moisture: 0
Location: B5L-16

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	0.24	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.14	J	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.12	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B5L-18
Sample Date: 9/14/96
Laboratory ID: S685530-13
QC Type: CS
% Moisture: 0
Location: B5L-18

	RESULT	QUAL	UNI
4,4'-DDD	3.3	U	ug/
4,4'-DDE	3.3	U	ug/
4,4'-DDT	3.3	U	ug/
Aldrin	0.1	J	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	33	U	ug/
beta-BHC	1.7	U	ug/
Chlordane	17	U	ug/
Chlorobenzilate	17	U	ug/
delta-BHC	1.7	U	ug/
Dieldrin	3.3	U	ug/
Endosulfan I	1.7	U	ug/
Endosulfan II	0.25	J	ug/
Endosulfan sulfate	3.3	U	ug/
Endrin	0.11	J	ug/
Endrin aldehyde	3.3	U	ug/
gamma-BHC	1.7	U	ug/
Heptachlor	0.074	J	ug/
Heptachlor epoxide	1.7	U	ug/
Isodrin	3.3	U	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/

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Sample Number: B5L-19
Sample Date: 9/14/96
Laboratory ID: S685530-9
QC Type: CS
% Moisture: 0
Location: B5L-19

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	0.3	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.56	J	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.26	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B5L-21
Sample Date: 9/14/96
Laboratory ID: S685530-7
QC Type: CS
% Moisture: 0
Location: B5L-21

	RESULT	QUAL	UNITS
4,4'-DDD	0.74	J	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	0.4	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.31	J	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B5L-22
Sample Date: 9/14/96
Laboratory ID: S685530-1
QC Type: CS
% Moisture: 0
Location: B5L-22

	RESULT	QUAL	UNIT
4,4'-DDD	3.3	U	ug/k
4,4'-DDE	3.3	U	ug/k
4,4'-DDT	3.3	U	ug/k
Aldrin	1.7	U	ug/k
alpha-BHC	1.7	U	ug/k
Aroclor-1016	33	U	ug/k
Aroclor-1221	67	U	ug/k
Aroclor-1232	33	U	ug/k
Aroclor-1242	33	U	ug/k
Aroclor-1248	33	U	ug/k
Aroclor-1254	33	U	ug/k
Aroclor-1260	33	U	ug/k
beta-BHC	1.7	U	ug/k
Chlordane	17	U	ug/k
Chlorobenzilate	17	U	ug/k
delta-BHC	1.7	U	ug/k
Dieldrin	0.56	J	ug/k
Endosulfan I	1.7	U	ug/k
Endosulfan II	3.3	U	ug/k
Endosulfan sulfate	3.3	U	ug/k
Endrin	3.3	U	ug/k
Endrin aldehyde	3.3	U	ug/k
gamma-BHC	1.7	U	ug/k
Heptachlor	1.7	U	ug/k
Heptachlor epoxide	1.7	U	ug/k
Isodrin	3.3	U	ug/k
Methoxychlor	17	U	ug/k
Toxaphene	170	U	ug/k

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Sample Number: B5L-23
Sample Date: 9/14/96
Laboratory ID: S685530-3
QC Type: CS
% Moisture: 0
Location: B5L-23

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.065	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B5L-24
Sample Date: 9/14/96
Laboratory ID: S685530-20
QC Type: CS
% Moisture: 0
Location: B5L-24

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	0.14	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	0.17	J	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.063	J	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B5L-25
Sample Date: 9/14/96
Laboratory ID: S685530-4
QC Type: CS
% Moisture: 0
Location: B5L-25

	RESULT	QUAL	UN
4,4'-DDD	3.3	U	ug
4,4'-DDE	3.3	U	ug/
4,4'-DDT	3.3	U	ug/
Aldrin	1.7	U	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	33	U	ug/
beta-BHC	0.11	J	ug/
Chlordane	17	U	ug/
Chlorobenzilate	17	U	ug/
delta-BHC	1.7	U	ug/
Dieldrin	3.3	U	ug/
Endosulfan I	1.7	U	ug/
Endosulfan II	0.24	J	ug/
Endosulfan sulfate	3.3	U	ug/
Endrin	3.3	U	ug/
Endrin aldehyde	3.3	U	ug/
gamma-BHC	1.7	U	ug/
Heptachlor	0.32	J	ug/
Heptachlor epoxide	1.7	U	ug/
Isodrin	3.3	U	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/

INORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 8, 1997**
FROM:	**TERESA M. HUDSON**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA REVIEW – TAL METALS**
CTO 007 – KEY WEST, FLORIDA
SDG – BR010

SAMPLES: 19/TISSUE/

530A01	530A06	530A11	530A16
530A02	530A07	530A12	530A18
530A03	530A08	530A13	530A19
530A04	530A09	530A14	530A20
530A05	530A10	530A15	

Introduction

A data review was performed on the inorganic analytical data from CTO 007, NAS Key West, SDG No.BR010. Nineteen (19) tissue samples were included for TAL metals. No field duplicates were included within this SDG.

All samples were analyzed for Target Analyte List (TAL) metals. The samples were collected by Brown & Root Environmental on September 11, 12, 13, 14, and 16, 1996 and analyzed by Savannah Laboratories and Environmental Services, Inc. under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- Calibration Verifications
- * Laboratory Blank Analyses
- Matrix Spike Results

* Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/ preparation/ field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level (soil)
aluminum	11.9 ug/L	11.9 MG/KG
barium	1.0 ug/L	1.0 MG/KG
calcium	19.2 ug/L	19.2 MG/KG
copper	5.2 ug/L	5.2 MG/KG
iron	17.2 ug/L	17.2 MG/KG
manganese	1.2 ug/L	1.2 MG/KG
sodium	39.1 ug/L	39.1 MG/KG
vanadium	2.9 ug/L	2.9 MG/KG

Samples affected: All.

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for aluminum, barium, copper, iron, manganese, and vanadium have been qualified as nondetected "U." No action was taken for the remaining analytes since the results were either positive and greater than the action level or nondetect.

Notes

It was noted that all samples met the contract holding time limit criteria of six (6) months.

It was noted that percent recoveries (%R)for cadmium and selenium for ICP CRDL standards exceeded the quality control limits. However, no validation actions were taken.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method blank.

Other Factors Affecting Data Quality: None.

No other problems were encountered in this case.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review," February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Teresa M Hudson

Brown & Root Environmental
Teresa M. Hudson
Environmental Scientist/Data Validator

Julia F Bradley

Brown & Root Environmental
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

KEY WEST
SDG BR010

TABLE 1 – RECOMMENDATION SUMMARY

Aluminum	A[1]	Magnesium	
Antimony		Manganese	A[1]
Arsenic		Mercury	
Barium	A[1]	Nickel	
Beryllium		Potassium	
Cadmium		Selenium	
Calcium	A[1]	Silver	
Chromium		Sodium	A[1]
Cobalt		Thallium	
Copper	A[1]	Vanadium	A[1]
Iron	A[1]	Zinc	
Lead			

If the field is left blank, the qualifier is A - Accept all data.

A[1] Accept data but qualify as nondetected, "U," as a result of laboratory blank contamination.

APPENDIX A
Qualified Analytical Results

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR010

INORGANICS

Sample Number: B4C-10
Sample Date: 9/16/96
Laboratory ID: S685530A-6
QC Type: CS
% Moisture: 0
Location: B4C-10

	RESULT	QUAL	UNITS
Aluminum	10	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	6.7		mg/kg
Barium	3.5		mg/kg
Beryllium	0.17		mg/kg
Cadmium	1.7		mg/kg
Calcium	82000		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	5.5		mg/kg
Iron	36.8		mg/kg
Lead	0.34	U	mg/kg
Magnesium	10600		mg/kg
Manganese	2.2		mg/kg
Mercury	0.08		mg/kg
Nickel	0.85	U	mg/kg
Potassium	1900		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	5100		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	1.5	U	mg/kg
Zinc	9		mg/kg

Sample Number: B4C-11
Sample Date: 9/16/96
Laboratory ID: S685530A-10
QC Type: CS
% Moisture: 0
Location: B4C-11

	RESULT	QUAL	UNITS
Aluminum	2.3	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	31		mg/kg
Barium	1.1		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.82		mg/kg
Calcium	27700		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	21.3		mg/kg
Iron	14.2	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	2820		mg/kg
Manganese	0.85	U	mg/kg
Mercury	0.13		mg/kg
Nickel	0.85	U	mg/kg
Potassium	2360		mg/kg
Selenium	1	U	mg/kg
Silver	0.46		mg/kg
Sodium	5610		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	50.3		mg/kg

Sample Number: B4C-12
Sample Date: 9/16/96
Laboratory ID: S685530A-9
QC Type: CS
% Moisture: 0
Location: B4C-12

	RESULT	QUAL	UNIT
Aluminum	6.9	U	mg/
Antimony	2.4	U	mg/
Arsenic	4.1		mg/
Barium	2.5		mg/
Beryllium	0.13		mg/
Cadmium	0.53	U	mg/
Calcium	58100		mg/
Chromium	0.82	U	mg/
Cobalt	0.37	U	mg/
Copper	9.5		mg/
Iron	56.2		mg/
Lead	0.46		mg/
Magnesium	8420		mg/
Manganese	3.6		mg/
Mercury	0.01	U	mg/
Nickel	0.85	U	mg/
Potassium	1560		mg/
Selenium	1	U	mg/
Silver	0.29		mg/
Sodium	5140		mg/
Thallium	0.81	U	mg/
Vanadium	1.3	U	mg/
Zinc	11.1		mg/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR010

INORGANICS

Sample Number: B4C-7
Sample Date: 9/13/96
Laboratory ID: S685530A-8
QC Type: CS
% Moisture: 0
Location: B4C-7

	RESULT	QUAL	UNITS
Aluminum	4.6	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	14.1		mg/kg
Barium	1.4		mg/kg
Beryllium	0.08		mg/kg
Cadmium	0.8		mg/kg
Calcium	41900		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	19		mg/kg
Iron	8.8	U	mg/kg
Lead	0.41		mg/kg
Magnesium	4410		mg/kg
Manganese	1.3		mg/kg
Mercury	0.08		mg/kg
Nickel	0.85	U	mg/kg
Potassium	1650		mg/kg
Selenium	1	U	mg/kg
Silver	0.27		mg/kg
Sodium	5530		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	37.2		mg/kg

Sample Number: B4C-9
Sample Date: 9/16/96
Laboratory ID: S685530A-5
QC Type: CS
% Moisture: 0
Location: B4C-9

	RESULT	QUAL	UNITS
Aluminum	2.2	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	23.1		mg/kg
Barium	1.1		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.84		mg/kg
Calcium	13000		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	60.5		mg/kg
Iron	22.2		mg/kg
Lead	0.6		mg/kg
Magnesium	1650		mg/kg
Manganese	2.3		mg/kg
Mercury	0.04		mg/kg
Nickel	0.85	U	mg/kg
Potassium	1850		mg/kg
Selenium	1	U	mg/kg
Silver	0.92		mg/kg
Sodium	4660		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.52	U	mg/kg
Zinc	52.7		mg/kg

Sample Number: B4V-13
Sample Date: 9/16/96
Laboratory ID: S685530A-19
QC Type: CS
% Moisture: 0
Location: B4V-13

	RESULT	QUAL	UNIT
Aluminum	10.2	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	1.3		mg/kg
Barium	0.94	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	21200		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	0.38	U	mg/kg
Iron	26.9		mg/kg
Lead	0.78		mg/kg
Magnesium	3300		mg/kg
Manganese	13.2		mg/kg
Mercury	0.02		mg/kg
Nickel	0.85	U	mg/kg
Potassium	3600		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	10400		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	1.3	U	mg/kg
Zinc	9.3		mg/kg

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INORGANICS

Sample Number: B5C-27
Sample Date: 9/14/96
Laboratory ID: S685530A-12
QC Type: CS
% Moisture: 0
Location: B5C-27

	RESULT	QUAL	UNITS
Aluminum	7.3	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	5.6		mg/kg
Barium	2		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	2.5		mg/kg
Calcium	61400		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	4.6	U	mg/kg
Iron	32.7		mg/kg
Lead	0.34	U	mg/kg
Magnesium	8320		mg/kg
Manganese	1.4		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	1620		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	5360		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.78	U	mg/kg
Zinc	8.5		mg/kg

Sample Number: B5C-28
Sample Date: 9/14/96
Laboratory ID: S685530A-7
QC Type: CS
% Moisture: 0
Location: B5C-28

	RESULT	QUAL	UNITS
Aluminum	4.8	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	7.7		mg/kg
Barium	2.4		mg/kg
Beryllium	0.13		mg/kg
Cadmium	1.9		mg/kg
Calcium	62900		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	6		mg/kg
Iron	30.3		mg/kg
Lead	0.34	U	mg/kg
Magnesium	8550		mg/kg
Manganese	1.7		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	1890		mg/kg
Selenium	1	U	mg/kg
Silver	0.29		mg/kg
Sodium	4700		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	1	U	mg/kg
Zinc	10.7		mg/kg

Sample Number: B5L-10
Sample Date: 9/14/96
Laboratory ID: S685530A-1
QC Type: CS
% Moisture: 0
Location: B5L-10

	RESULT	QUAL	UNIT
Aluminum	7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	13.7		mg/kg
Barium	0.95	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	1.1		mg/kg
Calcium	23900		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	30.8		mg/kg
Iron	5.5	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	2600		mg/kg
Manganese	1.7		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.85	U	mg/kg
Potassium	2150		mg/kg
Selenium	1	U	mg/kg
Silver	0.45		mg/kg
Sodium	3430		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	21		mg/kg

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SAVANNAH LABORATORIES

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INORGANICS

Sample Number: B5L-12
Sample Date: 9/14/96
Laboratory ID: S685530A-3
QC Type: CS
% Moisture: 0
Location: B5L-12

	RESULT	QUAL	UNITS
Aluminum	1.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	15.7		mg/kg
Barium	0.41	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.65		mg/kg
Calcium	10600		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	26.7		mg/kg
Iron	2.9	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	1460		mg/kg
Manganese	0.5	U	mg/kg
Mercury	0.03		mg/kg
Nickel	0.85	U	mg/kg
Potassium	2700		mg/kg
Selenium	1	U	mg/kg
Silver	0.26		mg/kg
Sodium	3430		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	22.8		mg/kg

Sample Number: B5L-17
Sample Date: 9/14/96
Laboratory ID: S685530A-2
QC Type: CS
% Moisture: 0
Location: B5L-17

	RESULT	QUAL	UNITS
Aluminum	6.5	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	20.4		mg/kg
Barium	1.6		mg/kg
Beryllium	0.08		mg/kg
Cadmium	0.53	U	mg/kg
Calcium	45600		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	27.7		mg/kg
Iron	7.1	U	mg/kg
Lead	0.58		mg/kg
Magnesium	4790		mg/kg
Manganese	1.1	U	mg/kg
Mercury	0.02		mg/kg
Nickel	0.85	U	mg/kg
Potassium	2720		mg/kg
Selenium	1	U	mg/kg
Silver	0.27		mg/kg
Sodium	5140		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	25.6		mg/kg

Sample Number: B5L-20
Sample Date: 9/14/96
Laboratory ID: S685530A-4
QC Type: CS
% Moisture: 0
Location: B5L-20

	RESULT	QUAL	UNIT
Aluminum	2.5	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	15.6		mg/kg
Barium	0.67	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.85		mg/kg
Calcium	19000		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	35.2		mg/kg
Iron	3.2	U	mg/kg
Lead	0.66		mg/kg
Magnesium	2360		mg/kg
Manganese	0.82	U	mg/kg
Mercury	0.02		mg/kg
Nickel	0.85	U	mg/kg
Potassium	2480		mg/kg
Selenium	1	U	mg/kg
Silver	0.39		mg/kg
Sodium	3980		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.61	U	mg/kg
Zinc	22.5		mg/kg

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SAVANNAH LABORATORIES

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INORGANICS

Sample Number: B5V-29
Sample Date: 9/16/96
Laboratory ID: S685530A-20
QC Type: CS
% Moisture: 0
Location: B5V-29

	RESULT	QUAL	UNITS
Aluminum	21.7		mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.93		mg/kg
Barium	0.93	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	19800		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	0.34	U	mg/kg
Iron	32.9		mg/kg
Lead	0.43		mg/kg
Magnesium	2450		mg/kg
Manganese	7.2		mg/kg
Mercury	0.01		mg/kg
Nickel	0.85	U	mg/kg
Potassium	2860		mg/kg
Selenium	1	U	mg/kg
Silver	0.29		mg/kg
Sodium	9820		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	1.2	U	mg/kg
Zinc	1.1		mg/kg

Sample Number: B8L-1
Sample Date: 9/12/96
Laboratory ID: S685530A-13
QC Type: CS
% Moisture: 0
Location: B8L-1

	RESULT	QUAL	UNITS
Aluminum	3.9	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	17.9		mg/kg
Barium	0.93	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.67		mg/kg
Calcium	25500		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	32.2		mg/kg
Iron	9.6	U	mg/kg
Lead	0.78		mg/kg
Magnesium	3010		mg/kg
Manganese	0.84	U	mg/kg
Mercury	0.06		mg/kg
Nickel	0.85	U	mg/kg
Potassium	2400		mg/kg
Selenium	1	U	mg/kg
Silver	0.29		mg/kg
Sodium	5670		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	20.6		mg/kg

Sample Number: B8T-5
Sample Date: 9/12/96
Laboratory ID: S685530A-14
QC Type: CS
% Moisture: 0
Location: B8T-5

	RESULT	QUAL	UNIT
Aluminum	3.7	U	mg/l
Antimony	2.4	U	mg/l
Arsenic	39.7		mg/l
Barium	0.09	U	mg/l
Beryllium	0.04	U	mg/l
Cadmium	5.9		mg/l
Calcium	549		mg/k
Chromium	0.82	U	mg/k
Cobalt	0.37	U	mg/k
Copper	91.1		mg/k
Iron	89.1		mg/k
Lead	0.44		mg/k
Magnesium	2090		mg/k
Manganese	1.6		mg/k
Mercury	0.02		mg/k
Nickel	0.85	U	mg/k
Potassium	2240		mg/k
Selenium	1	U	mg/k
Silver	1.1		mg/k
Sodium	3080		mg/k
Thallium	0.81	U	mg/k
Vanadium	0.74	U	mg/k
Zinc	218		mg/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

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INORGANICS

Sample Number: B8V-13
Sample Date: 9/13/96
Laboratory ID: S685530A-18
QC Type: CS
% Moisture: 0
Location: B8V-13

	RESULT	QUAL	UNITS
Aluminum	14.5		mg/kg
Antimony	2.4	U	mg/kg
Arsenic	0.51		mg/kg
Barium	0.72	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	24500		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	1.1	U	mg/kg
Iron	46.4		mg/kg
Lead	0.93		mg/kg
Magnesium	3240		mg/kg
Manganese	6.9		mg/kg
Mercury	0.01	U	mg/kg
Nickel	26.1		mg/kg
Potassium	2650		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	8760		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.83	U	mg/kg
Zinc	7.1		mg/kg

Sample Number: I7C-8
Sample Date: 9/16/96
Laboratory ID: S685530A-11
QC Type: CS
% Moisture: 0
Location: I7C-8

	RESULT	QUAL	UNITS
Aluminum	2.3	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	22.7		mg/kg
Barium	1.6		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.69		mg/kg
Calcium	31900		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	39.4		mg/kg
Iron	18.5		mg/kg
Lead	0.34	U	mg/kg
Magnesium	2870		mg/kg
Manganese	1.8		mg/kg
Mercury	0.14		mg/kg
Nickel	0.85	U	mg/kg
Potassium	2500		mg/kg
Selenium	1	U	mg/kg
Silver	0.26		mg/kg
Sodium	4520		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.67	U	mg/kg
Zinc	66.8		mg/kg

Sample Number: I7L-6
Sample Date: 9/11/96
Laboratory ID: S685530A-16
QC Type: CS
% Moisture: 0
Location: I7L-6

	RESULT	QUAL	UNIT
Aluminum	1.7	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	15.4		mg/kg
Barium	1.2		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	36700		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	19.2		mg/kg
Iron	2.5	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	4090		mg/kg
Manganese	0.6	U	mg/kg
Mercury	0.06		mg/kg
Nickel	0.85	U	mg/kg
Potassium	1940		mg/kg
Selenium	1	U	mg/kg
Silver	0.26	U	mg/kg
Sodium	6140		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	22.9		mg/kg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

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INORGANICS

Sample Number: I7L-7
Sample Date: 9/11/96
Laboratory ID: S685530A-15
QC Type: CS
% Moisture: 0
Location: I7L-7

	RESULT	QUAL	UNITS
Aluminum	2.1	U	mg/kg
Antimony	2.4	U	mg/kg
Arsenic	16		mg/kg
Barium	1	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.53	U	mg/kg
Calcium	29600		mg/kg
Chromium	0.82	U	mg/kg
Cobalt	0.37	U	mg/kg
Copper	19.7		mg/kg
Iron	5.6	U	mg/kg
Lead	0.34	U	mg/kg
Magnesium	3440		mg/kg
Manganese	0.9	U	mg/kg
Mercury	0.03		mg/kg
Nickel	0.85	U	mg/kg
Potassium	2010		mg/kg
Selenium	1	U	mg/kg
Silver	0.42		mg/kg
Sodium	3680		mg/kg
Thallium	0.81	U	mg/kg
Vanadium	0.45	U	mg/kg
Zinc	16.1		mg/kg

ORGANIC DATA VALIDATION

TO:	**CHUCK BRYAN**	**DATE:**	**JANUARY 23, 1997**
FROM:	**R. MARTY RAY**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA REVIEW- PEST/PCB ORGANICS**
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG BR010

SAMPLES: 19/Tissue:

B5L-10	B5L-17	B5L-12	B5L-20	B4C-9
B4C-10	B5C-28	B4C-7	B4C-12	B4C-11
I7C-8	B5C-27	B8L-1	B8T-5	I7L-7
I7L-6	B8V-13	B4V-13	B5V-29	

The sample set for the CTO 007 NAS Key West site, SDG BR010, consists of nineteen (19) tissue samples. All samples were analyzed for Target Compound List (TCL) pesticide/PCB compounds. No field duplicate pairs were included in this SDG.

The samples were collected by Brown and Root Environmental on September 11th, 12th, 13th, 14th and 16th, 1996 and analyzed by Savannah Laboratories & Environmental Services, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Method 8080 analytical and reporting protocols. The data was evaluated according to the following parameters:

	Holding times
	Initial and continuing calibrations
*	Laboratory and field blank analyses
	Surrogate spike recoveries
*	Compound Quantitation

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Pesticide/PCBs

The following pesticide compound were detected in the laboratory method blank at the maximum concentration indicated below:

Compound	Maximum Concentration	Action Level
Endosulfan Sulfate	0.82 µg/Kg	4.1 µg/Kg
4,4'-DDD	0.12 µg/Kg	0.6 µg/Kg

Samples Affected: B5L-10, B5L-17, B5L-12, B5L-20, B4C-9, B4C-10, B5C-28, B4C-7, B4C-11 I7C-8, B5C-27, B8L-1, B8T-5, I7L-7, I7L-6, B8V-13, B4V-13, B5V-29

Positive results in the affected samples for these compounds reported at concentrations below the action level and the method detection limit were replaced with revised detection limits and qualified as nondetected, (U). Positive results below the MDL and above the action level were qualified as estimated (J).

The holding time between the date of collection and the date of extraction was greater than 14 days for many samples. However, due to the absence of technical holding time requirements for tissue samples, no action was taken.

The laboratory qualifier "P" was removed from all target compound data reporting a %D between positive results in columns 1 and 2 above 25% and less than 100%. No further action was taken.

The laboratory qualifier "P" was removed from the target compound data for compounds with a %D between positive results in columns 1 and 2 greater than 100%. Positive results were estimated (J).

Due to coeluting matrix interference on one of the GC columns, confirmation of some compounds was not feasible. Thus, the concentrations reported are based on a single column. The laboratory qualifier "X" was removed and the results were qualified as estimated (J). This affected samples: B4C-7, B5L-12, B8T-5, I7C-8, I7L-6, and I7L-7.

High %Ds between positive results in columns 1 and 2 were reported for Endosulfan sulfate and 4,4'-DDD in many samples, however no action was taken to qualify since this data was previously qualified for laboratory method blank contamination.

Positive results reported below the MDL were estimated (J).

No other problems were noted.

Executive Summary

Laboratory Performance: Endosulfan sulfate and 4,4'-DDD were detected in the laboratory method blank. Holding times between the date of collection and the date of extraction was greater than 14 days for many samples, however, no action was taken due to the lack of holding time requirements for tissue samples. Numerous pesticide/PCB compounds reported %Ds between positive results in columns 1 and 2 above the quality control limit of 25% but not over 100%. Numerous pesticide/PCB compounds reported %Ds above 100%. Due to coeluting matrix interference on one of the GC columns, confirmation of multiple compounds was not feasible for some samples. Thus, the concentrations reported for these samples are based on a single column.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Brown and Root Environmental

R. Marty Ray
Environmental Scientist/Data Validator

for
Brown & Root Environmental

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

NAS KEY WEST

SDG BR010

TABLE 1 - RECOMMENDATION SUMMARY

Sample No.	PEST/PCB
B5L-10	A^2 A^3 J^7 J^{30}
B5L-17	A^1 A^3 J^8 J^{13} J^{30}
B5L-12	A^1 A^3 J^{14} J^{15} J^{16} J^{30}
B5L-20	A^2 A^3 J^{17} J^4 J^{13} J^{20} J^{30}
B4C-9	A^2 A^3 J^5 J^{18} J^{10} J^6 J^{21} J^{30}
B4C-10	A^2 A^3 J^8 J^{12} J^{13} J^7 J^{22} J^{30}
B5C-28	A^2 A^3 J^6 J^8 J^{13} J^{20} J^{21} J^{23} J^{30}
B4C-7	A^2 A^3 J^5 J^{15} J^{16} J^{22} J^{24} J^{30}
B4C-12	J^{18} J^4 J^{13} J^{30}
B4C-11	A^1 A^3 J^4 J^6 J^{16} J^{13} J^{30}
I7C-8	A^2 A^3 J^{18} J^1 J^4 J^{16} J^{11} J^{22} J^{24} J^{30}
B5C-27	A^2 A^3 J^{19} J^6 J^{12} J^{16} J^{25} J^{30}
B8L-1	A^2 A^3 J^7 J^{26} J^{27} J^{30}
B8T-5	A^2 A^3 J^{15} J^{13} J^{24} J^{28} J^{30}
I7L-7	A^1 A^3 J^2 J^{12} J^{15} J^3 J^{27} J^{29} J^{30}
I7L-6	A^1 A^3 J^2 J^{14} J^{15} J^{30}
B8V-13	A^2 A^3 J^{19} J^{26} J^7 J^{30}
B4V-13	A^1 A^3 J^5 J^8 J^9 J^{12} J^{26} J^{30}
B5V-29	A^1 A^3 J^{30}

If the field is left blank, the qualifier is A - Accept all data.

A^1 - Accept data, but change positive results for 4,4'-DDD to a revised detection limit and qualify as non-detected, (U).

A^2 - Accept data, but remove the laboratory qualifier (B) for 4,4'-DDD. As result of a positive hit above the set action level.

A^3 - Accept data, but change positive results for endosulfan sulfate to a revised detection limit and qualify as non-detected, (U). Qualified as estimated (J).

J^1 - Removed the laboratory qualifier (X) which indicates that the results for chlorobenzilate are based on one column. Qualified as estimated (J).

J^2 - Removed the laboratory qualifier (X) which indicates that the results for dieldrin are based on one column. Qualified as estimated (J).

J^3 - Removed the laboratory qualifier (X) which indicates that the results for endrin aldehyde are based on one column. Qualified as estimated (J).

J^4 - Removed the laboratory qualifier (P) for endrin used to indicate a %D greater than 100%. Qualified as estimated (J).

J^5 - Removed the laboratory qualifier (P) for 4,4'-DDE used to indicate a %D greater than 25% but less than 100%.

J^6 - Removed the laboratory qualifier (P) for dieldrin used to indicate a %D greater than 25% but less than 100%.

J^7 - Removed the laboratory qualifier (P) for 4,4'-DDD used to indicate a %D greater than 25% but less than 100%.

J^8 - Removed the laboratory qualifier (P) for aldrin, used to indicate %D greater than100%. Qualified as estimated (J).

J^9 - Removed the laboratory qualifier (P) foralpha-BHC, used to indicate %D greater than100%. Qualified as estimated (J).

J^{10} - Removed the laboratory qualifier (P) for chlorobenzilate, used to indicate a %D greater than100%. Qualified as estimated (J).

J^{11} - Removed the laboratory qualifier (P) for heptachlor epoxide, used to indicate a %D greater than 25% but less than 100%.

J^{12} Removed the laboratory qualifier (P) for endosulfan II used to indicate a %D greater than 25% but less than 100%.

J^{13} Removed the laboratory qualifier (P) for endrin aldehyde used to indicate a %D greater than 100%. Qualified as estimated (J).

J^{14} - Removed the laboratory qualifier (X) which indicates that the results for are endosulfan II are based on one column. Qualified as estimated (J).

J^{15} - Removed the laboratory qualifier (X) which indicates that the results for endrin are based on one column. Qualified as estimated (J).

J^{16} Removed the laboratory qualifier (P) for heptachlor used to indicate a %D greater than 25% but less than 100%..

J^{17} Removed the laboratory qualifier (P) for beta-BHC used to indicatea %D greater than 100%. Qualified as estimated (J).

J^{18}	Removed the laboratory qualifier (P) for 4,4'-DDT used to indicatea %D greater than 100%. Qualified as estimated (J).
J^{19}	Removed the laboratory qualifier (P) for delta-BHC used to indicatea %D greater than 100%. Qualified as estimated (J).
J^{20}	Removed the laboratory qualifier (P) for gamma-BHC (lindane) used to indicate a %D greater than 25% but less than 100%.
J^{21}	Removed the laboratory qualifier (P) for 4,4'-DDD used to indicate a %D greater than 100%. Qualified as estimated (J).
J^{22}	Removed the laboratory qualifier (P) for dieldrin used to indicate a %D greater than 100%. Qualified as estimated (J).
J^{23}	Removed the laboratory qualifier (P) for endosulfan II used to indicate a %D greater than 100%. Qualified as estimated (J).
J^{24}	Removed the laboratory qualifier (X) which indicates that the results for 4,4'-DDD are based on one column. Qualified as estimated (J).
J^{25}	Removed the laboratory qualifier (P) for endrin aldehyde used to indicate a %D greater than 25% but less than 100%.
J^{26}	Removed the laboratory qualifier (P) for gamma-BHC (lindane) used to indicate a %D greater than 100%. Qualified as estimated (J).
J^{27}	Removed the laboratory qualifier (P) for heptachlor used to indicate a %D greater than 100%. Qualified as estimated (J).
J^{28}	Removed the laboratory qualifier (P) for 4,4'-DDT used to indicate a %D greater than 25% but less than 100%.
J^{29}	Removed the laboratory qualifier (X) which indicates that the results for endosulfan I are based on one column. Qualified as estimated (J).
J^{30}	Positive results reported below the MDL were estimated. (J).

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

SDG: BR010

PESTICIDES/PCBs

Sample Number: B4C-10
Sample Date: 9/16/96
Laboratory ID: S685530A-6
QC Type: CS
% Moisture: 0
Location: B4C-10

	RESULT	QUAL	UNITS
4,4'-DDD	0.73	J	ug/kg
4,4'-DDE	0.49	J	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	0.13	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	0.82	J	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	0.14	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.4	J	ug/kg
Endrin aldehyde	1.8	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B4C-11
Sample Date: 9/16/96
Laboratory ID: S685530A-10
QC Type: CS
% Moisture: 0
Location: B4C-11

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	0.43	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	0.99	J	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.37	J	ug/kg
Endrin aldehyde	1.2	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.52	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B4C-12
Sample Date: 9/16/96
Laboratory ID: S685530A-9
QC Type: CS
% Moisture: 0
Location: B4C-12

	RESULT	QUAL	UNIT
4,4'-DDD	3.3	U	ug/k
4,4'-DDE	3.3	U	ug/k
4,4'-DDT	0.68	J	ug/k
Aldrin	1.7	U	ug/k
alpha-BHC	1.7	U	ug/k
Aroclor-1016	33	U	ug/k
Aroclor-1221	67	U	ug/k
Aroclor-1232	33	U	ug/k
Aroclor-1242	33	U	ug/k
Aroclor-1248	33	U	ug/k
Aroclor-1254	33	U	ug/k
Aroclor-1260	33	U	ug/k
beta-BHC	1.7	U	ug/k
Chlordane	17	U	ug/k
Chlorobenzilate	17	U	ug/k
delta-BHC	1.7	U	ug/k
Dieldrin	3.3	U	ug/k
Endosulfan I	1.7	U	ug/k
Endosulfan II	3.3	U	ug/k
Endosulfan sulfate	3.3	U	ug/k
Endrin	0.22	J	ug/k
Endrin aldehyde	1.7	J	ug/k
gamma-BHC	1.7	U	ug/k
Heptachlor	1.7	U	ug/k
Heptachlor epoxide	1.7	U	ug/k
Isodrin	3.3	U	ug/k
Methoxychlor	17	U	ug/k
Toxaphene	170	U	ug/k

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PESTICIDES/PCBs

Sample Number: B4C-7
Sample Date: 9/13/96
Laboratory ID: S685530A-8
QC Type: CS
% Moisture: 0
Location: B4C-7

	RESULT	QUAL	UNITS
4,4'-DDD	0.87	J	ug/kg
4,4'-DDE	0.37	J	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	0.29	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	4.4	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	0.47	J	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.49	J	ug/kg
Endrin aldehyde	1.1	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.048	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B4C-9
Sample Date: 9/16/96
Laboratory ID: S685530A-5
QC Type: CS
% Moisture: 0
Location: B4C-9

	RESULT	QUAL	UNITS
4,4'-DDD	0.86	J	ug/kg
4,4'-DDE	1.9	J	ug/kg
4,4'-DDT	0.71	J	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	5.4	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	0.82	J	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	2.7	J	ug/kg
Endrin aldehyde	2.8	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.28	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B4V-13
Sample Date: 9/16/96
Laboratory ID: S685530A-19
QC Type: CS
% Moisture: 0
Location: B4V-13

	RESULT	QUAL	UNI
4,4'-DDD	3.3	U	ug
4,4'-DDE	0.7	J	ug
4,4'-DDT	3.3	U	ug
Aldrin	0.48	J	ug
alpha-BHC	0.5	J	ug
Aroclor-1016	33	U	ug
Aroclor-1221	67	U	ug
Aroclor-1232	33	U	ug
Aroclor-1242	33	U	ug
Aroclor-1248	33	U	ug
Aroclor-1254	33	U	ug
Aroclor-1260	33	U	ug
beta-BHC	0.55	J	ug
Chlordane	17	U	ug
Chlorobenzilate	17	U	ug
delta-BHC	1.7	U	ug
Dieldrin	3.3	U	ug
Endosulfan I	1.7	U	ug
Endosulfan II	0.5	J	ug
Endosulfan sulfate	3.3	U	ug
Endrin	3.3	U	ug
Endrin aldehyde	3.3	U	ug
gamma-BHC	0.17	J	ug
Heptachlor	1.7	U	ug
Heptachlor epoxide	1.7	U	ug
Isodrin	3.3	U	ug
Methoxychlor	17	U	ug
Toxaphene	170	U	ug

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Sample Number: B5C-27
Sample Date: 9/14/96
Laboratory ID: S685530A-12
QC Type: CS
% Moisture: 0
Location: B5C-27

	RESULT	QUAL	UNITS
4,4'-DDD	1.3	J	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	0.76	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.35	J	ug/kg
Dieldrin	0.98	J	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	0.59	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.89	J	ug/kg
Endrin aldehyde	2.3	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.34	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B5C-28
Sample Date: 9/14/96
Laboratory ID: S685530A-7
QC Type: CS
% Moisture: 0
Location: B5C-28

	RESULT	QUAL	UNITS
4,4'-DDD	0.65	J	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	0.59	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	1	J	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	0.44	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	1.6	J	ug/kg
Endrin aldehyde	2.3	J	ug/kg
gamma-BHC	0.69	J	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B5L-10
Sample Date: 9/14/96
Laboratory ID: S685530A-1
QC Type: CS
% Moisture: 0
Location: B5L-10

	RESULT	QUAL	UNI
4,4'-DDD	0.75	J	ug/
4,4'-DDE	3.3	U	ug/
4,4'-DDT	3.3	U	ug/
Aldrin	1.7	U	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	33	U	ug/
beta-BHC	1.7	U	ug/
Chlordane	17	U	ug/
Chlorobenzilate	17	U	ug/
delta-BHC	1.7	U	ug/
Dieldrin	3.3	U	ug/
Endosulfan I	1.7	U	ug/
Endosulfan II	3.3	U	ug/
Endosulfan sulfate	3.3	U	ug/
Endrin	3.3	U	ug/
Endrin aldehyde	3.3	U	ug/
gamma-BHC	1.7	U	ug/
Heptachlor	1.7	U	ug/
Heptachlor epoxide	1.7	U	ug/
Isodrin	3.3	U	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/

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Sample Number: B5L-12
Sample Date: 9/14/96
Laboratory ID: S685530A-3
QC Type: CS
% Moisture: 0
Location: B5L-12

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	0.67	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.33	J	ug/kg
Endrin aldehyde	3.1	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.13	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B5L-17
Sample Date: 9/14/96
Laboratory ID: S685530A-2
QC Type: CS
% Moisture: 0
Location: B5L-17

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	0.21	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	0.68	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.21	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B5L-20
Sample Date: 9/14/96
Laboratory ID: S685530A-4
QC Type: CS
% Moisture: 0
Location: B5L-20

	RESULT	QUAL	U
4,4'-DDD	0.86	J	u
4,4'-DDE	3.3	U	u
4,4'-DDT	3.3	U	u
Aldrin	1.7	U	u
alpha-BHC	1.7	U	u
Aroclor-1016	33	U	u
Aroclor-1221	67	U	u
Aroclor-1232	33	U	u
Aroclor-1242	33	U	u
Aroclor-1248	33	U	u
Aroclor-1254	33	U	u
Aroclor-1260	33	U	u
beta-BHC	0.2	J	u
Chlordane	17	U	u
Chlorobenzilate	17	U	u
delta-BHC	1.7	U	u
Dieldrin	3.3	U	u
Endosulfan I	1.7	U	u
Endosulfan II	3.3	U	u
Endosulfan sulfate	3.3	U	u
Endrin	0.14	J	u
Endrin aldehyde	0.84	J	u
gamma-BHC	0.14	J	u
Heptachlor	0.33	J	u
Heptachlor epoxide	1.7	U	u
Isodrin	3.3	U	u
Methoxychlor	17	U	u
Toxaphene	170	U	u

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SDG: BR010

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Sample Number: B5V-29
Sample Date: 9/16/96
Laboratory ID: S685530A-20
QC Type: CS
% Moisture: 0
Location: B5V-29

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	0.55	J	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.1	J	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B8L-1
Sample Date: 9/12/96
Laboratory ID: S685530A-13
QC Type: CS
% Moisture: 0
Location: B8L-1

	RESULT	QUAL	UNITS
4,4'-DDD	0.72	J	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.38	J	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	0.094	J	ug/kg
Heptachlor	0.26	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B8T-5
Sample Date: 9/12/96
Laboratory ID: S685530A-14
QC Type: CS
% Moisture: 0
Location: B8T-5

	RESULT	QUAL	UNI
4,4'-DDD	0.75	J	ug/
4,4'-DDE	3.3	U	ug/
4,4'-DDT	0.11	J	ug/
Aldrin	1.7	U	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	33	U	ug/
beta-BHC	1.7	U	ug/
Chlordane	17	U	ug/
Chlorobenzilate	17	U	ug/
delta-BHC	1.7	U	ug/
Dieldrin	3.3	U	ug/
Endosulfan I	1.7	U	ug/
Endosulfan II	3.3	U	ug/
Endosulfan sulfate	3.3	U	ug/
Endrin	0.3	J	ug/
Endrin aldehyde	0.27	J	ug/
gamma-BHC	1.7	U	ug/
Heptachlor	1.7	U	ug/
Heptachlor epoxide	1.7	U	ug/
Isodrin	3.3	U	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR010

PESTICIDES/PCBs

Sample Number: B8V-13
Sample Date: 9/13/96
Laboratory ID: S685530A-18
QC Type: CS
% Moisture: 0
Location: B8V-13

	RESULT	QUAL	UNITS
4,4'-DDD	0.79	J	ug/kg
4,4'-DDE	0.52	J	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.68	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	0.19	J	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I7C-8
Sample Date: 9/16/96
Laboratory ID: S685530A-11
QC Type: CS
% Moisture: 0
Location: I7C-8

	RESULT	QUAL	UNITS
4,4'-DDD	0.61	J	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	1.1	J	ug/kg
Aldrin	0.65	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	5.8	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	0.59	J	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	1	J	ug/kg
Endrin aldehyde	3.4		ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.72	J	ug/kg
Heptachlor epoxide	0.83	J	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I7L-6
Sample Date: 9/11/96
Laboratory ID: S685530A-16
QC Type: CS
% Moisture: 0
Location: I7L-6

	RESULT	QUAL	UNI
4,4'-DDD	3.3	U	ug/
4,4'-DDE	3.3	U	ug/
4,4'-DDT	3.3	U	ug/
Aldrin	1.7	U	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	33	U	ug/
beta-BHC	1.7	U	ug/
Chlordane	17	U	ug/
Chlorobenzilate	17	U	ug/
delta-BHC	1.7	U	ug/
Dieldrin	0.46	J	ug/
Endosulfan I	1.7	U	ug/
Endosulfan II	0.17	J	ug/
Endosulfan sulfate	3.3	U	ug/
Endrin	0.098	J	ug/
Endrin aldehyde	3.3	U	ug/
gamma-BHC	1.7	U	ug/
Heptachlor	1.7	U	ug/
Heptachlor epoxide	1.7	U	ug/
Isodrin	3.3	U	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR010

PESTICIDES/PCBs

Sample Number: I7L-7
Sample Date: 9/11/96
Laboratory ID: S685530A-15
QC Type: CS
% Moisture: 0
Location: I7L-7

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	0.13	J	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	0.76	J	ug/kg
Endosulfan I	0.23	J	ug/kg
Endosulfan II	0.16	J	ug/kg
Endosulfan sulfate	3.3	J	ug/kg
Endrin	0.5	J	ug/kg
Endrin aldehyde	0.49	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.076	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

INORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 9, 1997**
FROM:	**TERESA M. HUDSON**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA REVIEW – TAL METALS**
CTO 007 – KEY WEST, FLORIDA
SDG – BR011

SAMPLES: 20/TISSUE/

530B01	530B06	530B11	530B16
530B02	530B07	530B12	530B17
530B03	530B08	530B13	530B18
530B04	530B09	530B14	530B19
530B05	530B10	530B15	530B20

Introduction

A data review was performed on the inorganic analytical data from CTO 007, NAS Key West, SDG No.BR011. Twenty (20) tissue samples were included for TAL metals. No field duplicates were included within this SDG.

All samples were analyzed for Target Analyte List (TAL) metals. The samples were collected by Brown & Root Environmental on September 11, 12, 13, and 16, 1996 and analyzed by Savannah Laboratories and Environmental Services, Inc. under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- Calibration Verifications
- * Laboratory Blank Analyses
- Matrix Spike Results

* Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/ preparation/ field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level (soil)
aluminum [1]	1.970 MG/KG	9.85 MG/KG
arsenic	4.9 ug/L	4.9 MG/KG
barium	2.4 ug/L	2.4 MG/KG
beryllium	0.4 ug/L	0.4 MG/KG
calcium[1]	9.876 MG/KG	49.38 MG/KG
chromium	7.3 ug/L	7.3 MG/KG
copper	2.2 ug/L	2.2 MG/KG
iron	23.1 ug/L	23.1 MG/KG
lead[1]	0.346 MG/KG	1.73 MG/KG
magnesium	23.1 ug/L	23.1 MG/KG
manganese	2.8 ug/L	2.8 MG/KG
mercury[1]	0.008 MG/KG	0.04 MG/KG
nickel	4.3 ug/L	4.3 MG/KG
potassium	87.7 ug/L	87.7 MG/KG
sodium	24.6 ug/L	24.6 MG/KG
vanadium	2.6 ug/L	2.6 MG/KG
zinc	1.6 ug/L	1.6 MG/KG

Samples affected: All.

[1] Maximum concentration found in a soil preparation blank.

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for aluminum, arsenic, barium, beryllium, chromium, copper, iron, lead, manganese, mercury, nickel, and vanadium have been qualified as nondetected "U." No action was taken for the remaining analytes since the results were greater than the action level.

Notes

It was noted that all samples met the contract holding time limit criteria of six (6) months.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method blank.

Other Factors Affecting Data Quality: None.

No other problems were encountered in this case.

The data for these analyses were reviewed in accordance with the "National Functional Guidelines for Inorganic Review," February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Teresa M Hudson

Brown & Root Environmental
Teresa M. Hudson
Environmental Scientist/Data Validator

Julia F Bradley for

Brown & Root Environmental
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

KEY WEST
SDG – BR011

TABLE 1 – RECOMMENDATION SUMMARY

Aluminum	A^1	Magnesium	
Antimony		Manganese	A^1
Arsenic	A^1	Mercury	A^1
Barium	A^1	Nickel	A^1
Beryllium	A^1	Potassium	
Cadmium		Selenium	
Calcium		Silver	
Chromium	A^1	Sodium	
Cobalt		Thallium	
Copper	A^1	Vanadium	A^1
Iron	A^1	Zinc	
Lead	A^1		

If the field is left blank, the qualifier is A - Accept all data.

A^1 Accept data but qualify as nondetected, "U," as a result of laboratory blank contamination.

APPENDIX A
Qualified Analytical Results

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR011

INORGANICS

Sample Number: B4V-14
Sample Date: 9/16/96
Laboratory ID: S685530B-5
QC Type: CS
% Moisture: 0
Location: B4V-14

	RESULT	QUAL	UNITS
Aluminum	12.2		mg/kg
Antimony	1.1	U	mg/kg
Arsenic	0.94	U	mg/kg
Barium	0.41	U	mg/kg
Beryllium	0.02	U	mg/kg
Cadmium	0.11		mg/kg
Calcium	8710		mg/kg
Chromium	0.16	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	0.94	U	mg/kg
Iron	18.9	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	2240		mg/kg
Manganese	15.9		mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.52	U	mg/kg
Potassium	4040		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	11600		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.67	U	mg/kg
Zinc	6.9		mg/kg

Sample Number: B4V-15
Sample Date: 9/16/96
Laboratory ID: S685530B-6
QC Type: CS
% Moisture: 0
Location: B4V-15

	RESULT	QUAL	UNITS
Aluminum	12.4		mg/kg
Antimony	1.1	U	mg/kg
Arsenic	1.1	U	mg/kg
Barium	0.51	U	mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	5030		mg/kg
Chromium	0.16	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	0.85	U	mg/kg
Iron	22	U	mg/kg
Lead	0.41	U	mg/kg
Magnesium	2100		mg/kg
Manganese	15.2		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	3900		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	12700		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.89	U	mg/kg
Zinc	7.9		mg/kg

Sample Number: B5V-30
Sample Date: 9/16/96
Laboratory ID: S685530B-4
QC Type: CS
% Moisture: 0
Location: B5V-30

	RESULT	QUAL	UNI
Aluminum	20.7		mg/
Antimony	1.1	U	mg/
Arsenic	1.5	U	mg/
Barium	1	U	mg/
Beryllium	0.01	U	mg/
Cadmium	0.08	U	mg/
Calcium	16000		mg/
Chromium	0.16	U	mg/l
Cobalt	0.11	U	mg/l
Copper	0.43	U	mg/l
Iron	21.8	U	mg/l
Lead	0.32	U	mg/l
Magnesium	2340		mg/k
Manganese	3.2		mg/k
Mercury	0.01	U	mg/k
Nickel	0.29	U	mg/k
Potassium	2890		mg/k
Selenium	1	U	mg/k
Silver	0.16	U	mg/k
Sodium	10600		mg/k
Thallium	0.92	U	mg/k
Vanadium	1.5	U	mg/k
Zinc	3.5		mg/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR011

INORGANICS

Sample Number: B7F-23
Sample Date: 9/12/96
Laboratory ID: S685530B-16
QC Type: CS
% Moisture: 0
Location: B7F-23

	RESULT	QUAL	UNITS
Aluminum	26.8		mg/kg
Antimony	1.1	U	mg/kg
Arsenic	3.8	U	mg/kg
Barium	0.92	U	mg/kg
Beryllium	0.02	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	16300		mg/kg
Chromium	0.35	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	1.3	U	mg/kg
Iron	11.5	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	526		mg/kg
Manganese	0.78	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	2900		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	1650		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.19	U	mg/kg
Zinc	33.8		mg/kg

Sample Number: B7F-24
Sample Date: 9/12/96
Laboratory ID: S685530B-17
QC Type: CS
% Moisture: 0
Location: B7F-24

	RESULT	QUAL	UNITS
Aluminum	15.8		mg/kg
Antimony	1.1	U	mg/kg
Arsenic	5.6		mg/kg
Barium	1.5	U	mg/kg
Beryllium	0.02	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	19700		mg/kg
Chromium	0.3	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	2.1	U	mg/kg
Iron	12	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	602		mg/kg
Manganese	1.5	U	mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	3190		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	1940		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.19	U	mg/kg
Zinc	37.2		mg/kg

Sample Number: B7F-25
Sample Date: 9/12/96
Laboratory ID: S685530B-18
QC Type: CS
% Moisture: 0
Location: B7F-25

	RESULT	QUAL	UNIT
Aluminum	8.9	U	mg/k
Antimony	1.1	U	mg/k
Arsenic	7.1		mg/k
Barium	0.99	U	mg/k
Beryllium	0.02	U	mg/k
Cadmium	0.08	U	mg/k
Calcium	16300		mg/k
Chromium	0.35	U	mg/k
Cobalt	0.11	U	mg/k
Copper	1.8	U	mg/k
Iron	12	U	mg/k
Lead	0.32	U	mg/kg
Magnesium	575		mg/kg
Manganese	1.2	U	mg/kg
Mercury	0.03	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	2870		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	1930		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.19	U	mg/kg
Zinc	39.3		mg/kg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR011

INORGANICS

Sample Number: B7F-26
Sample Date: 9/12/96
Laboratory ID: S685530B-19
QC Type: CS
% Moisture: 0
Location: B7F-26

	RESULT	QUAL	UNITS
Aluminum	37.7		mg/kg
Antimony	1.1	U	mg/kg
Arsenic	6		mg/kg
Barium	1	U	mg/kg
Beryllium	0.02	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	19400		mg/kg
Chromium	0.25	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	2	U	mg/kg
Iron	4.7	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	611		mg/kg
Manganese	1.2	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	3080		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	1880		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.44	U	mg/kg
Zinc	38.5		mg/kg

Sample Number: B7F-27
Sample Date: 9/12/96
Laboratory ID: S685530B-20
QC Type: CS
% Moisture: 0
Location: B7F-27

	RESULT	QUAL	UNITS
Aluminum	8.1	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	6.2		mg/kg
Barium	0.92	U	mg/kg
Beryllium	0.02	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	17600		mg/kg
Chromium	0.31	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	1.7	U	mg/kg
Iron	10.5	U	mg/kg
Lead	0.38	U	mg/kg
Magnesium	569		mg/kg
Manganese	1.2	U	mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	3180		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	1960		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.19	U	mg/kg
Zinc	41.3		mg/kg

Sample Number: B7F-29
Sample Date: 9/13/96
Laboratory ID: S685530B-11
QC Type: CS
% Moisture: 0
Location: B7F-29

	RESULT	QUAL	UNI
Aluminum	10.4		mg/
Antimony	1.1	U	mg/
Arsenic	2.1	U	mg/
Barium	9.9		mg/
Beryllium	0.01	U	mg/
Cadmium	0.08	U	mg/
Calcium	10300		mg/
Chromium	0.16	U	mg/
Cobalt	0.11	U	mg/
Copper	3.3		mg/
Iron	20.9	U	mg/
Lead	0.38	U	mg/
Magnesium	499		mg/
Manganese	16.2		mg/
Mercury	0.01	U	mg/
Nickel	0.29	U	mg/
Potassium	2590		mg/
Selenium	1	U	mg/
Silver	0.16	U	mg/
Sodium	2040		mg/
Thallium	0.92	U	mg/
Vanadium	0.74	U	mg/
Zinc	38.4		mg/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

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INORGANICS

Sample Number: B7F-30
Sample Date: 9/13/96
Laboratory ID: S685530B-12
QC Type: CS
% Moisture: 0
Location: B7F-30

	RESULT	QUAL	UNITS
Aluminum	11.1		mg/kg
Antimony	1.1	U	mg/kg
Arsenic	2.6	U	mg/kg
Barium	8.5		mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	9970		mg/kg
Chromium	0.31	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	4.5		mg/kg
Iron	26		mg/kg
Lead	0.92	U	mg/kg
Magnesium	542		mg/kg
Manganese	2.3	U	mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	3010		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	2140		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.85	U	mg/kg
Zinc	65.9		mg/kg

Sample Number: B7F-31
Sample Date: 9/13/96
Laboratory ID: S685530B-13
QC Type: CS
% Moisture: 0
Location: B7F-31

	RESULT	QUAL	UNITS
Aluminum	23.4		mg/kg
Antimony	1.1	U	mg/kg
Arsenic	1.6	U	mg/kg
Barium	3		mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	12900		mg/kg
Chromium	0.25	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	7.3		mg/kg
Iron	20.1	U	mg/kg
Lead	2.6		mg/kg
Magnesium	502		mg/kg
Manganese	0.75	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	2870		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	2040		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.59	U	mg/kg
Zinc	52.4		mg/kg

Sample Number: B7F-32
Sample Date: 9/13/96
Laboratory ID: S685530B-14
QC Type: CS
% Moisture: 0
Location: B7F-32

	RESULT	QUAL	UNI
Aluminum	7.8	U	mg/l
Antimony	1.1	U	mg/l
Arsenic	3.7	U	mg/l
Barium	5.4		mg/l
Beryllium	0.01	U	mg/l
Cadmium	0.08	U	mg/l
Calcium	23900		mg/l
Chromium	0.53	U	mg/k
Cobalt	0.11	U	mg/k
Copper	5		mg/k
Iron	21.9	U	mg/k
Lead	0.63	U	mg/k
Magnesium	786		mg/k
Manganese	2.2	U	mg/k
Mercury	0.01	U	mg/k
Nickel	0.29	U	mg/k
Potassium	3270		mg/k
Selenium	1	U	mg/k
Silver	0.16	U	mg/k
Sodium	2700		mg/k
Thallium	0.92	U	mg/k
Vanadium	0.92	U	mg/k
Zinc	65.3		mg/k

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INORGANICS

Sample Number: B7F-33
Sample Date: 9/13/96
Laboratory ID: S685530B-15
QC Type: CS
% Moisture: 0
Location: B7F-33

	RESULT	QUAL	UNITS
Aluminum	13.6		mg/kg
Antimony	1.1	U	mg/kg
Arsenic	3.5	U	mg/kg
Barium	4.3		mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	19400		mg/kg
Chromium	0.17	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	5.1		mg/kg
Iron	19.6	U	mg/kg
Lead	0.91	U	mg/kg
Magnesium	766		mg/kg
Manganese	1.9	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	3380		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	2800		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.85	U	mg/kg
Zinc	74		mg/kg

Sample Number: B8C-7
Sample Date: 9/12/96
Laboratory ID: S685530B-10
QC Type: CS
% Moisture: 0
Location: B8C-7

	RESULT	QUAL	UNITS
Aluminum	7.5	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	7.6		mg/kg
Barium	1.5	U	mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	37300		mg/kg
Chromium	0.62	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	16.7		mg/kg
Iron	56.5		mg/kg
Lead	0.32	U	mg/kg
Magnesium	4100		mg/kg
Manganese	1.3	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.35	U	mg/kg
Potassium	1930		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	3400		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.9	U	mg/kg
Zinc	26.4		mg/kg

Sample Number: B8CH-6
Sample Date: 9/12/96
Laboratory ID: S685530B-9
QC Type: CS
% Moisture: 0
Location: B8CH-6

	RESULT	QUAL	UNI
Aluminum	26.6		mg/
Antimony	1.1	U	mg/
Arsenic	137		mg/
Barium	0.05	U	mg/k
Beryllium	0.01	U	mg/k
Cadmium	0.58		mg/k
Calcium	1030		mg/k
Chromium	0.16	U	mg/k
Cobalt	0.11	U	mg/k
Copper	48.2		mg/k
Iron	10.4	U	mg/k
Lead	0.32	U	mg/k
Magnesium	2450		mg/k
Manganese	3.9		mg/k
Mercury	0.06		mg/k
Nickel	0.29	U	mg/k
Potassium	3110		mg/k
Selenium	1	U	mg/k
Silver	0.16	U	mg/k
Sodium	4790		mg/k
Thallium	0.92	U	mg/k
Vanadium	0.19	U	mg/k
Zinc	22.1		mg/k

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INORGANICS

Sample Number: B8V-10
Sample Date: 9/13/96
Laboratory ID: S685530B-1
QC Type: CS
% Moisture: 0
Location: B8V-10

	RESULT	QUAL	UNITS
Aluminum	29.6		mg/kg
Antimony	1.1	U	mg/kg
Arsenic	1.9	U	mg/kg
Barium	0.58	U	mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.12		mg/kg
Calcium	16500		mg/kg
Chromium	0.18	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	2.4		mg/kg
Iron	90.2		mg/kg
Lead	0.55	U	mg/kg
Magnesium	2890		mg/kg
Manganese	7.4		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.93	U	mg/kg
Potassium	3500		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	12700		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.62	U	mg/kg
Zinc	14.6		mg/kg

Sample Number: B8V-11
Sample Date: 9/13/96
Laboratory ID: S685530B-2
QC Type: CS
% Moisture: 0
Location: B8V-11

	RESULT	QUAL	UNITS
Aluminum	17.8		mg/kg
Antimony	1.1	U	mg/kg
Arsenic	1.2	U	mg/kg
Barium	0.5	U	mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	12500		mg/kg
Chromium	0.18	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	2.2	U	mg/kg
Iron	51.3		mg/kg
Lead	0.38	U	mg/kg
Magnesium	2630		mg/kg
Manganese	7.9		mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	3610		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	12000		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.46	U	mg/kg
Zinc	10.2		mg/kg

Sample Number: B8V-12
Sample Date: 9/13/96
Laboratory ID: S685530B-3
QC Type: CS
% Moisture: 0
Location: B8V-12

	RESULT	QUAL	UNIT
Aluminum	36.5		mg/k
Antimony	1.1	U	mg/kg
Arsenic	0.95	U	mg/kg
Barium	0.92	U	mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	30500		mg/kg
Chromium	0.16	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	1.2	U	mg/kg
Iron	42.6		mg/kg
Lead	0.61	U	mg/kg
Magnesium	3460		mg/kg
Manganese	7.2		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.43	U	mg/kg
Potassium	3350		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	11700		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	1.3	U	mg/kg
Zinc	5.5		mg/kg

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SAVANNAH LABORATORIES

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INORGANICS

Sample Number: I7V-4
Sample Date: 9/11/96
Laboratory ID: S685530B-7
QC Type: CS
% Moisture: 0
Location: I7V-4

	RESULT	QUAL	UNITS
Aluminum	12.7		mg/kg
Antimony	1.1	U	mg/kg
Arsenic	2	U	mg/kg
Barium	0.75	U	mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	6550		mg/kg
Chromium	0.16	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	1.1	U	mg/kg
Iron	29.6		mg/kg
Lead	0.32	U	mg/kg
Magnesium	1700		mg/kg
Manganese	11		mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	3550		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	10900		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	1.8	U	mg/kg
Zinc	8.1		mg/kg

Sample Number: I7V-5
Sample Date: 9/11/96
Laboratory ID: S685530B-8
QC Type: CS
% Moisture: 0
Location: I7V-5

	RESULT	QUAL	UNITS
Aluminum	19.5		mg/kg
Antimony	1.1	U	mg/kg
Arsenic	1.3	U	mg/kg
Barium	1.1	U	mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	12100		mg/kg
Chromium	0.16	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	1	U	mg/kg
Iron	50.3		mg/kg
Lead	0.58	U	mg/kg
Magnesium	1820		mg/kg
Manganese	6		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	3030		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	10300		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.71	U	mg/kg
Zinc	5.1		mg/kg

ORGANIC DATA VALIDATION

TO:	**CHUCK BRYAN**	**DATE:**	**JANUARY 20, 1997**
FROM:	**R. MARTY RAY**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA REVIEW - PEST/PCB ORGANICS**
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG BR011

SAMPLES: 20/Tissue:

B8V-10	B8V-11	B8V-12	B5V-30	B4V-14
B4V-15	I7V-4	I7V-5	B8CH-6	B8C-7
B7F-29	B7F-30	B7F-31	B7F-32	B7F-33
B7F-23	B7F-24	B7F-25	B7F-26	B7F-27

The sample set for the CTO 007 NAS Key West site, SDG BR011, consists of twenty (20) tissue samples. All samples were analyzed for Target Compound List (TCL) pesticide/PCB compounds. No field duplicate pairs were included in this SDG.

The samples were collected by Brown and Root Environmental on September 11th, 12th, 13th, and 16th, 1996 and analyzed by Savannah Laboratories & Environmental Services, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Method 8080 analytical and reporting protocols. The data was evaluated according to the following parameters:

	Holding times
	Initial and continuing calibrations
*	Laboratory and field blank analyses
	Surrogate spike recoveries
*	Compound Quantitation

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Pesticide/PCBs

The following pesticide compound was detected in the laboratory method blank at the maximum concentration indicated below:

Compound	Maximum Concentration	Action Level
Endrin Aldehyde	.34µg/Kg	1.70µg/Kg

Samples Affected: BV4-14, B4V-15, B5V-30, B7F-24, B7F-32, B7F-33, B8CH-6, B8V-11, and B8V-12

Positive results in the affected samples for this compound reported at concentrations below the action level and the method detection limit were replaced with revised detection limits and qualified non-detected, (U).

The holding time between the date of collection and the date of extraction exceeds fourteen days for all samples. However, due to the absence of technical holding time requirements for tissue samples, no action was taken.

The laboratory qualifier (P) was removed from all target compound data with a %D between columns 1 and 2 above 25% and less than 100%. The affected target compounds and samples are listed in the table below.

SAMPLE	AFFECTED COMPOUNDS
B4V-14	Endrin
B7F-24	4,4'-DDE, Dieldrin, Endosulfan I
B7F-25	4,4'-DDD, 4,4'-DDE, Aldrin, Dieldrin, Endosulfan
B7F-26	4,4'-DDE, Aldrin, Endosulfan I
7F-27	Aroclor-1248
B7F-29	4,4'-DDD, 4,4'-DDE, Chlorobenzilate, Endosulfan I
B7F-30	4,4'-DDD, 4,4'-DDE
B7F-31	4,4'-DDD, Aroclor 1260
B7F-33	Heptachlor Epoxide

The laboratory qualifier (P) was removed from the target compound data for those compounds with a %D between columns 1 and 2 greater than 100%. Positive results were estimated "J". The affected samples and target compounds are listed in the table below.

SAMPLE	AFFECTED COMPOUNDS
B4V-14	4,4'-DDD
B7F-23	4,4'-DDD
B7F-26	4,4'-DDD, Heptachlor Epoxide
B7F-29	Aldrin, Delta BHC, Dieldrin
B7F-30	Aldrin, Beta-BHC, Dieldrin
B7F-32	4,4'-DDT, Aldrin, DELTA-BHC, Dieldrin, Endosulfan Sulfate, Endrin,
B7F-33	4,4'-DDT, Dieldrin, Endosulfan Sulfate, Endrin
B8C-7	4,4'-DDT, Chlorobenzilate, Endrin, Heptachlor
B8V-11	Dieldrin, Endosulfan I, Endrin Aldehyde
I7V-4	Methoxyclor
B8T-9	ENDRIN

Due to coeluting matrix interference on one of the GC columns, confirmation of Gamma-BHC (lindane) in samples B5V-30, B4V-15, B8V-11, and B8V-12 was not feasible. Thus, the Gamma-BHC (lindane) concentrations reported for these samples are based on a single column. The laboratory qualifier (X) was removed and the results are estimated (J) to indicate estimated concentrations.

Due to coeluting matrix interference on one of the GC columns, confirmation of Chlorobenzilate in B7F-32 and B7F-33 was not feasible. Thus, the Chlorobenzilate concentrations reported for these samples are based on a single column. The laboratory qualifier (X) was removed and the results were estimated (J) to indicate estimated concentrations.

Due to coeluting matrix interference on one of the GC columns, confirmation of 4,4'-DDT in B8CH-6 was not feasible. Thus, the Chlorobenzilate concentrations reported for these samples are based on a single column. The laboratory qualifier (X) was removed and the results were estimated (J) to indicate estimated concentrations.

Due to coeluting matrix interference on one of the GC columns, confirmation of Delta-BHC in B8C-7 and I7V-4 was not feasible. Thus, the Delta-BHC concentrations reported for these samples are based on a single column. The laboratory qualifier (X) was removed and the results were estimated (J) to indicate estimated concentrations.

Due to coeluting matrix interference on one of the GC columns, confirmation of Endrin Aldehyde in B7F-32 was not feasible. Thus, the Endrin Aldehyde concentration reported for this sample is based on a single column. The laboratory qualifier (X) was removed and the results were estimated (J) to indicate estimated concentrations.

The laboratory results for Chlorobenzilate in samples B7F-24 and B7F-30 were rejected (R) due to Aroclor 1260 interference in column DB-608.

High %Ds between columns 1 and 2 were reported for Endrin Aldehyde in many samples, however no action was taken to qualify since this data was previously qualified for laboratory method blank contamination.

No other problems were noted.

Executive Summary

Laboratory Performance: Endrin Aldehyde was detected in the laboratory method blank. Holding times between the date of collection and the date of extraction were greater than 14 days for all samples, however, no action was taken due to the lack of holding time requirements for tissue samples. Numerous pesticide/PCB compounds reported %Ds above the quality control limit of 25% and over 100%. Due to coeluting matrix interference on one of the GC columns, confirmation of multiple compounds was not feasible for some samples. Thus, the concentrations reported for these samples are based on a single column.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Brown and Root/Environmental

R. Marty Ray
Environmental Scientist/Data Validator

Brown & Root Environmental

Joseph A. Samchuck
Data Validation Quality Assurance officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

NAS KEY WEST

SDG BR011

TABLE 1 - RECOMMENDATION SUMMARY

Sample No.	PEST/PCB
B4V-14	$J^{15}J^{24}J^{30}J^{31}$
B4V-15	J^{1} J^{30} J^{32}
B5V-30	J^{1} J^{30} J^{32}
B7F-23	J^{6} J^{28} J^{30}
B7F-24	$J^{18}J^{21}$ J^{22} J^{23} J^{30} R^{1}
B7F-25	J^{24} J^{21} J^{22} J^{23} $J^{25}J^{30}$
B7F-26	J^{6} J^{7} J^{21} J^{25} J^{23} J^{30}
B7F-27	J^{26}
B7F-29	J^{8} J^{9} J^{10} J^{24} J^{21} J^{23} J^{27} J^{30}
B7F-30	J^{8} J^{10} J^{11} J^{24} J^{21} $J^{30}R^{1}$
B7F-31	J^{24} J^{28} J^{30}
B7F-32	J^{2} $J^{3}J^{12}$ J^{8} J^{9} J^{10} J^{14} J^{15} J^{30}
B7F-33	J^{2} J^{12} J^{10} J^{14} J^{15} $J^{18}J^{29}$ J^{30}
B8C-7	J^{5} J^{12} J^{13} J^{15} J^{16} J^{30}
B8CH-6	A^{1} J^{4} J^{30}
B8V-10	
B8V-11	J^{1} J^{10} J^{17} J^{18} J^{30}
B8V-12	J^{1} J^{30} J^{32}
I7V-4	J^{5} J^{30} J^{33}
I7V-5	

If the field is left blank, the qualifier is A - Accept all data.

A^{1} - Accept data, but change positive results for endrin aldehyde to a revised detection limit and qualify as non-detected, (U) as result of laboratory method blank contamination.

J^{1} - Removed the laboratory qualifier (X) which indicates that the results for gamma-BHC (lindane) are based on one column. Qualified as estimated (J).

J^{2} - Removed the laboratory qualifier (X) which indicates that the results for chlorobenzilate are based on one column. Qualified as estimated (J).

J^{3} - Removed the laboratory qualifier (X) which indicates that the results for dieldrin are based on one column. Qualified as estimated (J).

J^4 - Removed the laboratory qualifier (X) which indicates that the results for 4,4'-DDT are based on one column. Qualified as estimated (J).

J^5 - Removed the laboratory qualifier (X) which indicates that the results for delta-BHC are based on one column. Qualified as estimated (J).

J^6 - Removed the laboratory qualifier (P) for 4,4'-DDD and estimated (J) as result of %D above 100%.

J^7 - Removed the laboratory qualifier (P) for heptachlor epoxide and estimated (J) as result of %D above 100%.

J^8 - Removed the laboratory qualifier (P) for aldrin and estimated (J) as result of %D above 100%.

J^9 - Removed the laboratory qualifier (P) for delta-BHC and estimated (J) as result of %D above 100%.

J^{10} - Removed the laboratory qualifier (P) for dieldrin and estimated (J) as result of %D above 100%.

J^{11} - Removed the laboratory qualifier (P) for beta-BHC and estimated (J) as result of %D above 100%.

J^{12} - Removed the laboratory qualifier (P) for 4,4'-DDT and estimated (J) as result of %D above 100%.

J^{13} - Removed the laboratory qualifier (P) for chlorobenzilate and estimated (J) as result of %D above 100%.

J^{14} - Removed the laboratory qualifier (P) for endosulfan sulfate and estimated (J) as result of %D above 100%.

J^{15} - Removed the laboratory qualifier (P) for endrin and estimated (J) as result of %D above 100%.

J^{16} - Removed the laboratory qualifier (P) for heptachlor and estimated (J) as result of %D above 100%.

J^{17} - Removed the laboratory qualifier (P) for endosulfan I and estimated (J) as result of %D above 100%.

J^{18} - Removed the laboratory qualifier (P) for endrin aldehyde and estimated (J) as result of %D above 100%.

J^{19} - Removed the laboratory qualifier (P) for methoxychlor and estimated (J) as result of %D above 100%.

J^{20}	-	Removed laboratory qualifier (P) for endrin, used to indicate a high %D.
J^{21}	-	Removed laboratory qualifier (P) for 4,4'DDE, used to indicate a high %D.
J^{22}	-	Removed laboratory qualifier (P) for dieldrin, used to indicate a high %D.
J^{23}	-	Removed laboratory qualifier (P) for endosulfan I, used to indicate a high %D.
J^{24}	-	Removed laboratory qualifier (P) for 4,4'-DDD, used to indicate a high %D.
J^{25}	-	Removed laboratory qualifier (P) for aldrin, used to indicate a high %D.
J^{26}	-	Removed laboratory qualifier (P) for aroclor-1248, used to indicate a high %D.
J^{27}	-	Removed laboratory qualifier (P) for chlorobenzilate, used to indicate a high %D.
J^{28}	-	Removed laboratory qualifier (P) for aroclor-1260, used to indicate a high %D.
J^{29}	-	Removed laboratory qualifier (P) for heptachlor epoxide, used to indicate a high %D
J^{30}	-	Positive results reported below the MDL were estimated (J).
J^{31}	-	Removed the laboratory qualifier (P) for gamma BHC and estimated (J) as result of %D above 100%.
J^{32}	-	Removed laboratory qualifier (P) for endrin aldehyde, used to indicate a high %D
J^{33}	-	Removed laboratory qualifier (P) for methoxychlor, used to indicate a high %D
R^{1}		Rejected data for chlorobenzilate due to interference by aroclor-1260 in column DB-608.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR011

PESTICIDES/PCBs

Sample Number: B4V-14
Sample Date: 9/16/96
Laboratory ID: S685530B-5
QC Type: CS
% Moisture: 0
Location: B4V-14

	RESULT	QUAL	UNITS
4,4'-DDD	0.21	J	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.1	J	ug/kg
Endrin aldehyde	18		ug/kg
gamma-BHC	0.13	J	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B4V-15
Sample Date: 9/16/96
Laboratory ID: S685530B-6
QC Type: CS
% Moisture: 0
Location: B4V-15

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	14		ug/kg
gamma-BHC	0.39	J	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B5V-30
Sample Date: 9/16/96
Laboratory ID: S685530B-4
QC Type: CS
% Moisture: 0
Location: B5V-30

	RESULT	QUAL	UNI
4,4'-DDD	3.3	U	ug/
4,4'-DDE	3.3	U	ug/
4,4'-DDT	3.3	U	ug/
Aldrin	1.7	U	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	33	U	ug/
beta-BHC	1.7	U	ug/
Chlordane	17	U	ug/
Chlorobenzilate	17	U	ug/
delta-BHC	1.7	U	ug/
Dieldrin	3.3	U	ug/
Endosulfan I	1.7	U	ug/
Endosulfan II	3.3	U	ug/
Endosulfan sulfate	3.3	U	ug/
Endrin	3.3	U	ug/
Endrin aldehyde	6.6		ug/
gamma-BHC	0.42	J	ug/
Heptachlor	1.7	U	ug/
Heptachlor epoxide	1.7	U	ug/
Isodrin	3.3	U	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/

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PESTICIDES/PCBs

Sample Number: B7F-23
Sample Date: 9/12/96
Laboratory ID: S685530B-16
QC Type: CS
% Moisture: 0
Location: B7F-23

	RESULT	QUAL	UNITS
4,4'-DDD	4	J	ug/kg
4,4'-DDE	70		ug/kg
4,4'-DDT	16	U	ug/kg
Aldrin	8.5	U	ug/kg
alpha-BHC	8.5	U	ug/kg
Aroclor-1016	160	U	ug/kg
Aroclor-1221	340	U	ug/kg
Aroclor-1232	160	U	ug/kg
Aroclor-1242	160	U	ug/kg
Aroclor-1248	2100		ug/kg
Aroclor-1254	160	U	ug/kg
Aroclor-1260	690		ug/kg
beta-BHC	8.5	U	ug/kg
Chlordane	85	U	ug/kg
Chlorobenzilate	85	U	ug/kg
delta-BHC	8.5	U	ug/kg
Dieldrin	16	U	ug/kg
Endosulfan I	8.5	U	ug/kg
Endosulfan II	16	U	ug/kg
Endosulfan sulfate	16	U	ug/kg
Endrin	16	U	ug/kg
Endrin aldehyde	16	U	ug/kg
gamma-BHC	8.5	U	ug/kg
Heptachlor	8.5	U	ug/kg
Heptachlor epoxide	26		ug/kg
Isodrin	16	U	ug/kg
Methoxychlor	85	U	ug/kg
Toxaphene	850	U	ug/kg

Sample Number: B7F-24
Sample Date: 9/12/96
Laboratory ID: S685530B-17
QC Type: CS
% Moisture: 0
Location: B7F-24

	RESULT	QUAL	UNITS
4,4'-DDD	1.5	J	ug/kg
4,4'-DDE	30		ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	66		ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	150	R	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	2	J	ug/kg
Endosulfan I	0.87	J	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	5.1		ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7		ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B7F-25
Sample Date: 9/12/96
Laboratory ID: S685530B-18
QC Type: CS
% Moisture: 0
Location: B7F-25

	RESULT	QUAL	UNI
4,4'-DDD	1	J	ug/
4,4'-DDE	20		ug/
4,4'-DDT	3.3	U	ug/
Aldrin	1.7		ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	89		ug/
beta-BHC	1.7	U	ug/
Chlordane	17	U	ug/
Chlorobenzilate	17	U	ug/
delta-BHC	1.7	U	ug/
Dieldrin	2.2	J	ug/
Endosulfan I	1.8		ug/
Endosulfan II	3.3	U	ug/
Endosulfan sulfate	3.3	U	ug/
Endrin	3.3	U	ug/
Endrin aldehyde	3.3	U	ug/
gamma-BHC	1.7	U	ug/
Heptachlor	1.7	U	ug/
Heptachlor epoxide	3.8		ug/
Isodrin	3.3	U	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/

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Sample Number: B7F-26
Sample Date: 9/12/96
Laboratory ID: S685530B-19
QC Type: CS
% Moisture: 0
Location: B7F-26

	RESULT	QUAL	UNITS
4,4'-DDD	0.98	J	ug/kg
4,4'-DDE	30		ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	0.81	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	68		ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	2	J	ug/kg
Endosulfan I	0.97	J	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.1	J	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B7F-27
Sample Date: 9/12/96
Laboratory ID: S685530B-20
QC Type: CS
% Moisture: 0
Location: B7F-27

	RESULT	QUAL	UNITS
4,4'-DDD	3.5	U	ug/kg
4,4'-DDE	11		ug/kg
4,4'-DDT	3.5	U	ug/kg
Aldrin	1.8	U	ug/kg
alpha-BHC	1.8	U	ug/kg
Aroclor-1016	35	U	ug/kg
Aroclor-1221	70	U	ug/kg
Aroclor-1232	35	U	ug/kg
Aroclor-1242	35	U	ug/kg
Aroclor-1248	440		ug/kg
Aroclor-1254	35	U	ug/kg
Aroclor-1260	90		ug/kg
beta-BHC	1.8	U	ug/kg
Chlordane	18	U	ug/kg
Chlorobenzilate	18	U	ug/kg
delta-BHC	1.8	U	ug/kg
Dieldrin	3.5	U	ug/kg
Endosulfan I	1.8	U	ug/kg
Endosulfan II	3.5	U	ug/kg
Endosulfan sulfate	3.5	U	ug/kg
Endrin	3.5	U	ug/kg
Endrin aldehyde	3.5	U	ug/kg
gamma-BHC	1.8	U	ug/kg
Heptachlor	1.8	U	ug/kg
Heptachlor epoxide	1.8	U	ug/kg
Isodrin	3.5	U	ug/kg
Methoxychlor	18	U	ug/kg
Toxaphene	180	U	ug/kg

Sample Number: B7F-29
Sample Date: 9/13/96
Laboratory ID: S685530B-11
QC Type: CS
% Moisture: 0
Location: B7F-29

	RESULT	QUAL	UN
4,4'-DDD	1.7	J	ug
4,4'-DDE	20		ug
4,4'-DDT	3.3	U	ug/
Aldrin	1.3	J	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	66		ug/
beta-BHC	2.6		ug/
Chlordane	17	U	ug/
Chlorobenzilate	190		ug/
delta-BHC	0.31	J	ug/
Dieldrin	2.2	J	ug/
Endosulfan I	1.8		ug/
Endosulfan II	3.3	U	ug/
Endosulfan sulfate	3.3	U	ug/
Endrin	3.3	U	ug/
Endrin aldehyde	3.3	U	ug/
gamma-BHC	1.7	U	ug/
Heptachlor	1.7	U	ug/
Heptachlor epoxide	3.8		ug/
Isodrin	3.3	U	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/

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PESTICIDES/PCBs

Sample Number: B7F-30
Sample Date: 9/13/96
Laboratory ID: S685530B-12
QC Type: CS
% Moisture: 0
Location: B7F-30

	RESULT	QUAL	UNITS
4,4'-DDD	1.7	J	ug/kg
4,4'-DDE	21		ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	2	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	78		ug/kg
beta-BHC	1.3	J	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	180	R	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	2.2	J	ug/kg
Endosulfan I	2.6		ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	4.6		ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B7F-31
Sample Date: 9/13/96
Laboratory ID: S685530B-13
QC Type: CS
% Moisture: 0
Location: B7F-31

	RESULT	QUAL	UNITS
4,4'-DDD	1.2	J	ug/kg
4,4'-DDE	24		ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	630		ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	200		ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	10		ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B7F-32
Sample Date: 9/13/96
Laboratory ID: S685530B-14
QC Type: CS
% Moisture: 0
Location: B7F-32

	RESULT	QUAL	UNI
4,4'-DDD	3.3	U	ug/
4,4'-DDE	6.7		ug/
4,4'-DDT	0.63	J	ug/
Aldrin	0.28	J	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	33	U	ug/
beta-BHC	1.7	U	ug/
Chlordane	17	U	ug/
Chlorobenzilate	77	J	ug/
delta-BHC	0.26	J	ug/
Dieldrin	0.36	J	ug/
Endosulfan I	1.7	U	ug/
Endosulfan II	3.3	U	ug/
Endosulfan sulfate	9.8	J	ug/
Endrin	1	J	ug/
Endrin aldehyde	5.4	J	ug/
gamma-BHC	1.7	U	ug/
Heptachlor	1.7	U	ug/
Heptachlor epoxide	1	J	ug/
Isodrin	3.3	U	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR011

PESTICIDES/PCBs

Sample Number: B7F-33
Sample Date: 9/13/96
Laboratory ID: S685530B-15
QC Type: CS
% Moisture: 0
Location: B7F-33

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	6.8		ug/kg
4,4'-DDT	0.7	J	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	73	J	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	0.34	J	ug/kg
Endosulfan I	0.66	J	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	9.8	J	ug/kg
Endrin	1.1	J	ug/kg
Endrin aldehyde	3.4	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1	J	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B8C-7
Sample Date: 9/12/96
Laboratory ID: S685530B-10
QC Type: CS
% Moisture: 0
Location: B8C-7

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	0.88	J	ug/kg
4,4'-DDT	0.6	J	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	8	J	ug/kg
delta-BHC	0.27	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.5	J	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.21	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B8CH-6
Sample Date: 9/12/96
Laboratory ID: S685530B-9
QC Type: CS
% Moisture: 0
Location: B8CH-6

	RESULT	QUAL	UNI
4,4'-DDD	0.41	J	ug/
4,4'-DDE	3.3	U	ug/
4,4'-DDT	0.6	J	ug/
Aldrin	1.7	U	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	33	U	ug/
beta-BHC	1.7	U	ug/
Chlordane	17	U	ug/
Chlorobenzilate	17	U	ug/
delta-BHC	1.7	U	ug/
Dieldrin	3.3	U	ug/
Endosulfan I	1.7	U	ug/
Endosulfan II	3.3	U	ug/
Endosulfan sulfate	3.3	U	ug/
Endrin	3.3	U	ug/
Endrin aldehyde	3.3	U	ug/
gamma-BHC	1.7	U	ug/
Heptachlor	1.7	U	ug/
Heptachlor epoxide	1.7	U	ug/
Isodrin	3.3	U	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/

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PESTICIDES/PCBs

Sample Number: B8V-10
Sample Date: 9/13/96
Laboratory ID: S685530B-1
QC Type: CS
% Moisture: 0
Location: B8V-10

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B8V-11
Sample Date: 9/13/96
Laboratory ID: S685530B-2
QC Type: CS
% Moisture: 0
Location: B8V-11

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	0.25	J	ug/kg
Endosulfan I	0.2	J	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	J	ug/kg
gamma-BHC	0.64	J	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B8V-12
Sample Date: 9/13/96
Laboratory ID: S685530B-3
QC Type: CS
% Moisture: 0
Location: B8V-12

	RESULT	QUAL	UNI
4,4'-DDD	3.3	U	ug/
4,4'-DDE	3.3	U	ug/
4,4'-DDT	3.3	U	ug/
Aldrin	1.7	U	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	33	U	ug/
beta-BHC	1.7	U	ug/
Chlordane	17	U	ug/
Chlorobenzilate	17	U	ug/
delta-BHC	1.7	U	ug/
Dieldrin	3.3	U	ug/
Endosulfan I	1.7	U	ug/
Endosulfan II	3.3	U	ug/
Endosulfan sulfate	3.3	U	ug/
Endrin	3.3	U	ug/
Endrin aldehyde	8		ug/
gamma-BHC	0.51	J	ug/
Heptachlor	1.7	U	ug/
Heptachlor epoxide	1.7	U	ug/
Isodrin	3.3	U	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR011

PESTICIDES/PCBs

Sample Number: I7V-4
Sample Date: 9/11/96
Laboratory ID: S685530B-7
QC Type: CS
% Moisture: 0
Location: I7V-4

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	5.5	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	6.8	J	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I7V-5
Sample Date: 9/11/96
Laboratory ID: S685530B-8
QC Type: CS
% Moisture: 0
Location: I7V-5

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

INORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 23, 1997**
FROM:	**MIGNON J. CLARKE**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA REVIEW – TAL METALS**
CTO 007 – KEY WEST, FLORIDA
SDG – BR012

SAMPLES: 19/Tissue

B7F-28	B7F-6	B8C-2	B7F-18
B7F-2	B7F-7	B4L-8	B7F-19
B7F-3	B8T-3	B8L8	B7F-20
B7F-4	B8T-4	B7F-16	B7F-22
B7F-5	B8T-9	B7F-17	

Introduction

A review was performed on the inorganic analytical data from CTO 007, Key West, SDG-BR012, which consists of nineteen (19) environmental tissue samples.

All samples were analyzed for Target Analyte List (TAL) metals. The samples were collected by Brown and Root Environmental on September 11, 12, 13, and 14, 1996 and analyzed by Savannah Laboratories under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- Calibration Verifications
- * Laboratory Blank Analyses
- Matrix Spike Results

* Quality control criteria were not met for this parameters.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analysis

The following contaminants were detected in the laboratory method or preparation control blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Aluminum [1]	5.808 mg/kg	29.04 mg/kg
Arsenic	4.9 ug/L	4.9 mg/kg
Barium	2.4 ug/L	2.4 mg/kg
Beryllium	0.4 ug/L	0.4 mg/kg
Calcium	33.5 ug/L	33.5 mg/kg
Chromium	7.3 ug/L	7.3 mg/kg
Copper	2.0 ug/L	2.0 mg/kg
Iron	23.1 ug/L	23.1 mg/kg
Magnesium	21.5 ug/L	21.5 mg/kg
Manganese	2.8 ug/L	2.8 mg/kg
Mercury [1]	0.011 mg/kg	0.055 mg/kg
Nickel	4.3 ug/L	4.3 mg/kg
Potassium	87.7 ug/L	87.7 mg/kg
Sodium	48.3 ug/L	48.3 mg/kg
Vanadium	2.4 ug/L	2.4 mg/kg
Zinc	1.6 ug/L	1.6 mg/kg

Samples affected: All

(1) Maximum concentration found in an soil matrix preparation blank.

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for aluminum, arsenic, barium, beryllium chromium, iron, manganese, mercury, nickel, and vanadium have been qualified as nondetected "U". No action was taken for the remaining analytes since either the results were greater than the action level or were nondetects.

Notes
It was noted that all samples met the contract holding time criteria of six (6) months.

Executive Summary

Laboratory Performance:
Several analytes were present in the laboratory method blank.

No other problems were encountered in this case.

The data for these analysis were reviewed in accordance with the "National Functional Guidelines for inorganic Data Validation," as amended for use within USEPA Region I; and the NEESA document entitled "Sampling and Chemical Analysis Quality Assurance requirements for the Navy Installation Restoration Program" (NEESA 20.2-047B; 6/88).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Julie F Bradley
Brown & Root Environmental
for Mignon J. Clarke
Environmental Scientist/Data Validator

Teresa M Hudson
Brown & Root Environmental
for Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

KEY WEST
SDG – BR012

TABLE 1 - RECOMMENDATION SUMMARY

Aluminum	A^1	Magnesium	
Antimony		Manganese	A^1
Arsenic	A^1	Mercury	
Barium	A^1	Nickel	A^1
Beryllium	A^1	Potassium	
Cadmium		Selenium	
Calcium		Silver	
Chromium	A^1	Sodium	
Cobalt		Thallium	
Copper		Vanadium	A^1
Iron	A^1	Zinc	
Lead			

If the field is left blank, the qualifier is A - Accept all data.

A^1 - Accept data but qualify as nondetected, "U," as a result of laboratory blank contamination.

Appendix A - Qualified Analytical Results

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR012

INORGANICS

Sample Number: B4L-8
Sample Date: 9/14/96
Laboratory ID: S685530C-13
QC Type: CS
% Moisture: 0
Location: B4L-8

	RESULT	QUAL	UNITS
Aluminum	6.3	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	20.7		mg/kg
Barium	0.77	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.28	U	mg/kg
Calcium	17900		mg/kg
Chromium	0.19	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	25.6		mg/kg
Iron	5	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	2120		mg/kg
Manganese	0.51	U	mg/kg
Mercury	0.08		mg/kg
Nickel	0.29	U	mg/kg
Potassium	3630		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	4050		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.19	U	mg/kg
Zinc	25.8		mg/kg

Sample Number: B7F-1
Sample Date: 9/11/96
Laboratory ID: S685530C-2
QC Type: CS
% Moisture: 0
Location: B7F-1

	RESULT	QUAL	UNITS
Aluminum	10.7	U	mg/kg
Antimony	1.2		mg/kg
Arsenic	0.94	U	mg/kg
Barium	2.7		mg/kg
Beryllium	0.02	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	14600		mg/kg
Chromium	0.42	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	13		mg/kg
Iron	49.8		mg/kg
Lead	3.2		mg/kg
Magnesium	477		mg/kg
Manganese	0.87	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	2820		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	1950		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.86	U	mg/kg
Zinc	69.1		mg/kg

Sample Number: B7F-16
Sample Date: 9/12/96
Laboratory ID: S685530C-15
QC Type: CS
% Moisture: 0
Location: B7F-16

	RESULT	QUAL	UNI
Aluminum	6.7	U	mg/
Antimony	1.1	U	mg/
Arsenic	3.1	U	mg/
Barium	2.7		mg/
Beryllium	0.02	U	mg/
Cadmium	0.08	U	mg/
Calcium	13000		mg/
Chromium	0.28	U	mg/
Cobalt	0.11	U	mg/
Copper	8.9		mg/
Iron	27		mg/
Lead	1		mg/
Magnesium	568		mg/
Manganese	1	U	mg/
Mercury	0.01	U	mg/
Nickel	0.29	U	mg/
Potassium	2990		mg/
Selenium	1	U	mg/
Silver	0.16	U	mg/
Sodium	2430		mg/
Thallium	0.92	U	mg/
Vanadium	1.3	U	mg/
Zinc	51.9		mg/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR012

INORGANICS

Sample Number: B7F-17
Sample Date: 9/12/96
Laboratory ID: S685530C-16
QC Type: CS
% Moisture: 0
Location: B7F-17

	RESULT	QUAL	UNITS
Aluminum	8.1	U	mg/kg
Antimony	1.1		mg/kg
Arsenic	3.5	U	mg/kg
Barium	4.1		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	19900		mg/kg
Chromium	0.48	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	3.1		mg/kg
Iron	18.4	U	mg/kg
Lead	0.91		mg/kg
Magnesium	642		mg/kg
Manganese	1.5	U	mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	3120		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	2260		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.81	U	mg/kg
Zinc	53.7		mg/kg

Sample Number: B7F-18
Sample Date: 9/12/96
Laboratory ID: S685530C-17
QC Type: CS
% Moisture: 0
Location: B7F-18

	RESULT	QUAL	UNITS
Aluminum	19.8	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	2.2	U	mg/kg
Barium	6.9		mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	8130		mg/kg
Chromium	0.16	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	3.2		mg/kg
Iron	18.7	U	mg/kg
Lead	0.77		mg/kg
Magnesium	486		mg/kg
Manganese	1.8	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.46	U	mg/kg
Potassium	2830		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	2450		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.63	U	mg/kg
Zinc	31.5		mg/kg

Sample Number: B7F-19
Sample Date: 9/12/96
Laboratory ID: S685530C-18
QC Type: CS
% Moisture: 0
Location: B7F-19

	RESULT	QUAL	UNIT
Aluminum	12.4	U	mg/k
Antimony	1.1		mg/k
Arsenic	2.2	U	mg/k
Barium	5.9		mg/k
Beryllium	0.04	U	mg/k
Cadmium	0.08	U	mg/k
Calcium	7660		mg/k
Chromium	0.42	U	mg/k
Cobalt	0.11	U	mg/k
Copper	2.7		mg/k
Iron	20.1	U	mg/k
Lead	0.87		mg/k
Magnesium	494		mg/k
Manganese	1.7	U	mg/k
Mercury	0.01	U	mg/k
Nickel	0.32	U	mg/k
Potassium	2820		mg/k
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	2290		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.85	U	mg/kg
Zinc	33		mg/kg

SDG: BR012

INORGANICS

Sample Number: B7F-2
Sample Date: 9/11/96
Laboratory ID: S685530C-3
QC Type: CS
% Moisture: 0
Location: B7F-2

	RESULT	QUAL	UNITS
Aluminum	10.6	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	1.3	U	mg/kg
Barium	4.2		mg/kg
Beryllium	0.02	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	17900		mg/kg
Chromium	0.37	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	8.3		mg/kg
Iron	30.9		mg/kg
Lead	3.3		mg/kg
Magnesium	616		mg/kg
Manganese	1.2	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	3260		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	2380		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.71	U	mg/kg
Zinc	84.2		mg/kg

Sample Number: B7F-20
Sample Date: 9/12/96
Laboratory ID: S685530C-19
QC Type: CS
% Moisture: 0
Location: B7F-20

	RESULT	QUAL	UNITS
Aluminum	10.5	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	2.7	U	mg/kg
Barium	6.2		mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	9280		mg/kg
Chromium	0.51	U	mg/kg
Cobalt	0.39		mg/kg
Copper	5.2		mg/kg
Iron	25.2		mg/kg
Lead	0.74		mg/kg
Magnesium	492		mg/kg
Manganese	1.7	U	mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	2870		mg/kg
Selenium	1	U	mg/kg
Silver	0.2		mg/kg
Sodium	1980		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.85	U	mg/kg
Zinc	49.4		mg/kg

Sample Number: B7F-22
Sample Date: 9/12/96
Laboratory ID: S685530C-20
QC Type: CS
% Moisture: 0
Location: B7F-22

	RESULT	QUAL	UNIT
Aluminum	22.5	U	mg/k
Antimony	1.2		mg/k
Arsenic	4	U	mg/k
Barium	1.4	U	mg/k
Beryllium	0.03	U	mg/k
Cadmium	0.08	U	mg/k
Calcium	21200		mg/kg
Chromium	0.47	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	2.3		mg/kg
Iron	8.7	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	654		mg/kg
Manganese	1.7	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	3030		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	1950		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.19	U	mg/kg
Zinc	37.4		mg/kg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR012

INORGANICS

Sample Number: B7F-28
Sample Date: 9/12/96
Laboratory ID: S685530C-1
QC Type: CS
% Moisture: 0
Location: B7F-28

	RESULT	QUAL	UNITS
Aluminum	14.3	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	6.5		mg/kg
Barium	1	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	18600		mg/kg
Chromium	0.26	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	3.2		mg/kg
Iron	10.4	U	mg/kg
Lead	0.57		mg/kg
Magnesium	640		mg/kg
Manganese	1.6		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	3110		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	2050		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.33	U	mg/kg
Zinc	47.9		mg/kg

Sample Number: B7F-3
Sample Date: 9/11/96
Laboratory ID: S685530C-4
QC Type: CS
% Moisture: 0
Location: B7F-3

	RESULT	QUAL	UNITS
Aluminum	13.6	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	2.3	U	mg/kg
Barium	3.7		mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	16500		mg/kg
Chromium	0.58	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	8.4		mg/kg
Iron	32.2		mg/kg
Lead	3.3		mg/kg
Magnesium	619		mg/kg
Manganese	1	U	mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.41	U	mg/kg
Potassium	3350		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	2460		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.78	U	mg/kg
Zinc	79.1		mg/kg

Sample Number: B7F-4
Sample Date: 9/11/96
Laboratory ID: S685530C-5
QC Type: CS
% Moisture: 0
Location: B7F-4

	RESULT	QUAL	UNI
Aluminum	11.8	U	mg/
Antimony	1.1	U	mg/
Arsenic	2	U	mg/
Barium	3.9		mg/
Beryllium	0.02	U	mg/
Cadmium	0.08	U	mg/
Calcium	17000		mg/
Chromium	0.35	U	mg/
Cobalt	0.11	U	mg/
Copper	12.9		mg/
Iron	32.2		mg/
Lead	3.1		mg/
Magnesium	586		mg/
Manganese	1.1	U	mg/
Mercury	0.01	U	mg/
Nickel	0.29	U	mg/
Potassium	3240		mg/
Selenium	1	U	mg/
Silver	0.16	U	mg/
Sodium	2210		mg/
Thallium	0.92	U	mg/
Vanadium	0.71	U	mg/
Zinc	78		mg/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR012

INORGANICS

Sample Number: B7F-5
Sample Date: 9/11/96
Laboratory ID: S685530C-6
QC Type: CS
% Moisture: 0
Location: B7F-5

	RESULT	QUAL	UNITS
Aluminum	9.3	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	2.3	U	mg/kg
Barium	6		mg/kg
Beryllium	0.02	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	10100		mg/kg
Chromium	0.22	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	5.7		mg/kg
Iron	30.8		mg/kg
Lead	0.65		mg/kg
Magnesium	471		mg/kg
Manganese	1.7	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	2680		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	1890		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.85	U	mg/kg
Zinc	38.3		mg/kg

Sample Number: B7F-6
Sample Date: 9/11/96
Laboratory ID: S685530C-7
QC Type: CS
% Moisture: 0
Location: B7F-6

	RESULT	QUAL	UNITS
Aluminum	11	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	1.9	U	mg/kg
Barium	7.7		mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	11300		mg/kg
Chromium	0.3	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	4.1		mg/kg
Iron	28.2		mg/kg
Lead	0.77		mg/kg
Magnesium	520		mg/kg
Manganese	2	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	3080		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	2060		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.82	U	mg/kg
Zinc	64		mg/kg

Sample Number: B7F-7
Sample Date: 9/11/96
Laboratory ID: S685530C-8
QC Type: CS
% Moisture: 0
Location: B7F-7

	RESULT	QUAL	UNI
Aluminum	10.5	U	mg/
Antimony	1.1	U	mg/
Arsenic	3.1	U	mg/
Barium	4.8		mg/
Beryllium	0.03	U	mg/
Cadmium	0.08	U	mg/
Calcium	22500		mg/
Chromium	0.31	U	mg/
Cobalt	0.11	U	mg/
Copper	3		mg/
Iron	19.7	U	mg/
Lead	1.1		mg/
Magnesium	716		mg/
Manganese	1.4	U	mg/
Mercury	0.01	U	mg/
Nickel	0.29	U	mg/
Potassium	3000		mg/
Selenium	1	U	mg/k
Silver	0.16	U	mg/k
Sodium	2340		mg/k
Thallium	0.92	U	mg/k
Vanadium	0.78	U	mg/k
Zinc	57.9		mg/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR012

INORGANICS

Sample Number: B8C-2
Sample Date: 9/12/96
Laboratory ID: S685530C-12
QC Type: CS
% Moisture: 0
Location: B8C-2

	RESULT	QUAL	UNITS
Aluminum	15.8	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	2.7	U	mg/kg
Barium	1.6	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	1.1		mg/kg
Calcium	62800		mg/kg
Chromium	0.16	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	8.7		mg/kg
Iron	48.7		mg/kg
Lead	0.54		mg/kg
Magnesium	7300		mg/kg
Manganese	1.9	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	1250		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	5490		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.46	U	mg/kg
Zinc	12.8		mg/kg

Sample Number: B8L-8
Sample Date: 9/13/96
Laboratory ID: S685530C-14
QC Type: CS
% Moisture: 0
Location: B8L-8

	RESULT	QUAL	UNITS
Aluminum	14.3	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	10.3		mg/kg
Barium	0.82	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	10600		mg/kg
Chromium	0.16	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	23.1		mg/kg
Iron	4.5	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	1220		mg/kg
Manganese	0.34	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	2290		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	5340		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.19	U	mg/kg
Zinc	16.4		mg/kg

Sample Number: B8T-3
Sample Date: 9/12/96
Laboratory ID: S685530C-9
QC Type: CS
% Moisture: 0
Location: B8T-3

	RESULT	QUAL	UNIT
Aluminum	11.7	U	mg/k
Antimony	1.1	U	mg/k
Arsenic	94.1		mg/k
Barium	0.17	U	mg/k
Beryllium	0.03	U	mg/k
Cadmium	1.3		mg/k
Calcium	786		mg/k
Chromium	0.17	U	mg/k
Cobalt	0.11	U	mg/k
Copper	84.6		mg/k
Iron	103		mg/k
Lead	0.32	U	mg/kg
Magnesium	1970		mg/kg
Manganese	1.2	U	mg/kg
Mercury	0.14		mg/kg
Nickel	0.29	U	mg/kg
Potassium	2570		mg/kg
Selenium	1	U	mg/kg
Silver	0.61		mg/kg
Sodium	4060		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.33	U	mg/kg
Zinc	27.9		mg/kg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR012

INORGANICS

Sample Number: B8T-4
Sample Date: 9/12/96
Laboratory ID: S685530C-10
QC Type: CS
% Moisture: 0
Location: B8T-4

	RESULT	QUAL	UNITS
Aluminum	10.7	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	48.3		mg/kg
Barium	0.13	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	2		mg/kg
Calcium	813		mg/kg
Chromium	0.29	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	28.8		mg/kg
Iron	36.3		mg/kg
Lead	0.35		mg/kg
Magnesium	1970		mg/kg
Manganese	5.1		mg/kg
Mercury	0.07		mg/kg
Nickel	0.41	U	mg/kg
Potassium	2340		mg/kg
Selenium	1	U	mg/kg
Silver	0.72		mg/kg
Sodium	4540		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.31	U	mg/kg
Zinc	30.1		mg/kg

Sample Number: B8T-9
Sample Date: 9/13/96
Laboratory ID: S685530C-11
QC Type: CS
% Moisture: 0
Location: B8T-9

	RESULT	QUAL	UNITS
Aluminum	7.4	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	85.7		mg/kg
Barium	0.06	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.22		mg/kg
Calcium	962		mg/kg
Chromium	0.16	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	10		mg/kg
Iron	22.1	U	mg/kg
Lead	0.41		mg/kg
Magnesium	2400		mg/kg
Manganese	1.8	U	mg/kg
Mercury	0.09		mg/kg
Nickel	0.29	U	mg/kg
Potassium	2990		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	3740		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.19	U	mg/kg
Zinc	20.2		mg/kg

ORGANIC DATA VALIDATION

TO:	**CHUCK BRYAN**	**DATE:**	**JANUARY 22, 1997**
FROM:	**R. MARTY RAY**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA REVIEW - PEST/PCB ORGANICS**
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG BR012

SAMPLES: Tissue:

BF7-28	BF7-1	BF7-2	BF7-3	BF7-4	BF7-5
BF7-6	BF7-7	B8T-3	B8T-4	B8T-9	B8C-2
B4L-8	B8L-8	B7F-16	B7F-17	B7F-18	B7F-19
B7F-20	B7F-22				

The sample set for the CTO 007 NAS Key West site, SDG 69285W, consists of twenty (20) tissue samples. All samples were analyzed for Target Compound List (TCL) pesticide/PCB compounds. No field duplicate pairs were included in this SDG.

The samples were collected by Brown and Root Environmental on September 11th, 12th, 13th, 14th, and 20th, 1996 and analyzed by Savannah Laboratories & Environmental Services, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Method 8080 analytical and reporting protocols. The data was evaluated according to the following parameters:

Holding times
Initial and continuing calibrations
Laboratory and field blank analyses
Surrogate spike recoveries
* Compound Quantitation

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the recommended review qualifications.

Pesticide/PCBs

The holding time between the date of collection and the date of extraction seems excessive for all samples. However, due to the absence of technical holding time requirements for tissue samples, no action was taken.

The laboratory qualifier "P" was removed from all target compound data with a %D between columns 1 and 2 above 25% and less than 100%. The affected target compounds and samples are listed in the following table.

SAMPLE	AFFECTED COMPOUNDS
B7F-1	AROCLOR-1248, AROCLOR-1260
B7F-17	4,4'-DDD, 4,4'-DDE, AROCLOR-1248
B7F-18	DELTA-BHC
B7F-19	AROCLOR-1260
B7F-20	4,4'-DDD, DELTA-BHC
B7F-22	4,4'-DDD, 4,4'-DDE
B7F-28	4,4'-DDD, DELTA-BHC
B7F-3	4,4'-DDD,
B7F-4	4,4'-DDD
B7F-6	4,4'-DDD, DELTA-BHC
B7F-7	DELTA-BHC
B8C-2	4,4'-DDE, ENDRIN ALDEHYDE, HEPTACHLOR EPOXIDE
B8L-8	4,4'-DDE

The laboratory qualifier "P" was removed from the target compound data for those compounds with a %D between columns 1 and 2 greater than 100%. Positive hits were estimated "J". The affected samples and target compounds are listed in the table below.

SAMPLE	AFFECTED COMPOUNDS
B4L-8	ENDRIN ALDEHYDE
B7F-1	4,4'-DDD
B7F-18	4,4'-DDD
B7F-19	4,4'-DDD
B7F-2	DELTA-BHC
B7F-28	DELTA-BHC
B7F-3	DELTA-BHC
B7F-4	DELTA-BHC
B8C-2	DIELDRIN, ENDOSULFAN II
B8L-8	ENDRIN ALDEHYDE
B8T-9	ENDRIN

Due to coeluting matrix interference on one of the GC columns, confirmation of endrin aldehyde in samples B8T-3 and B8T-4 was not feasible. Thus, the endrin aldehyde concentrations reported for these samples are based on a single column. The laboratory qualifier "X" was removed and the estimated "J" was left to indicate estimated concentrations.

No other problems were noted.

Executive Summary

Laboratory Performance: ,Holding times between the date of collection and the date of extraction seems excessive for all samples. However, no action was taken due to the lack of holding time requirements for tissue

samples. Numerous pesticide/PCB compounds reported %Ds above 100%. Due to coeluting matrix interference on one of the GC columns, confirmation of endrin aldehyde in samples B8T-3 and B8T-4 was not feasible. Thus, the endrin aldehyde concentrations reported for these samples are based on a single column. The laboratory qualifier "X" was removed and the estimated "J" was left to indicate estimated concentrations.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B: 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

R. Marty Ray

Brown and Root Environmental

R. Marty Ray
Environmental Scientist/Data Validator

Arnold C. Lamb

Brown & Root Environmental

Arnold C. Lamb
District Quality Assurance Manager

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

NAS KEY WEST

SDG BR012

TABLE 1 - RECOMMENDATION SUMMARY

Sample No.	PEST/PCB
B7F-28	$J^{13}J^{9}J^{3}$
B7F-1	$J^{2}J^{10}J^{11}$
B7F-2	J^{3}
B7F-3	$J^{9}J^{3}$
B7F-4	$J^{9}J^{3}$
B7F-5	
B7F-6	$J^{9}J^{13}$
B7F-7	J^{13}
B8T-3	J^{1}
B8T-4	J^{1}
B8T-9	J^{5}
B8C-2	$J^{8}J^{14}J^{12}J^{4}J^{6}$
B4L-8	J^{7}
B8L-8	$J^{8}J^{7}$
B7F-16	
B7F-17	$J^{8}J^{9}J^{10}$
B7F-18	$J^{13}J^{2}$
B7F-19	$J^{11}J^{2}$
B7F-22	$J^{8}J^{9}$
B7F-20	$J^{9}J^{13}$

If the field is left blank, the qualifier is A - Accept all data.

J^{1} - Removed the laboratory qualifier (X) which indicates that the results for gamma-BHC (lindane) are based on one column. Qualified as estimate (J).

J^{2} - Removed the laboratory qualifier (P) for 4,4`-DDT and estimated (J). As result of %D above 100%.

J^{3} - Removed the laboratory qualifier (P) for delta-BHC and estimated (J). As result of %D above 100%.

J^{4} - Removed the laboratory qualifier (P) for dieldrin and estimated (J). As result of %D above 100%.

J^5 - Removed the laboratory qualifier (P) for endrin and estimated (J). As result of %D above 100%.

J^6 - Removed the laboratory qualifier (P) for endosulfan I and estimated (J). As result of %D above 100%.

J^7 - Removed the laboratory qualifier (P) for endrin aldehyde and estimated (J). As result of %D above 100%.

J^8 - Removed laboratory qualifier (P) for 4,4'-DDE, used to indicate a high %D. No further action was taken.

J^9 - Removed laboratory qualifier (P) for 4,4'-DDD, used to indicate a high %D. No further action was taken.

J^{10} - Removed laboratory qualifier (P) for aroclor-1248, used to indicate a high %D. No further action was taken.

J^{11} - Removed laboratory qualifier (P) for aroclor-1260, used to indicate a high %D. No further action was taken.

J^{12} - Removed laboratory qualifier (P) for heptachlor epoxide, used to indicate a high %D. No further action was taken.

J^{13} - Removed laboratory qualifier (P) for delta-BHC, used to indicate a high %D. No further action was taken.

J^{14} - Removed laboratory qualifier (P) for endrin aldehyde, used to indicate a high %D. No further action was taken.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR012

PESTICIDES/PCBs

Sample Number: B4L-8
Sample Date: 9/14/96
Laboratory ID: S685530C-13
QC Type: CS
% Moisture: 0
Location: B4L-8

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	0.65	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B7F-1
Sample Date: 9/11/96
Laboratory ID: S685530C-2
QC Type: CS
% Moisture: 0
Location: B7F-1

	RESULT	QUAL	UNITS
4,4'-DDD	1.2	J	ug/kg
4,4'-DDE	14		ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	220		ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	100		ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B7F-16
Sample Date: 9/12/96
Laboratory ID: S685530C-15
QC Type: CS
% Moisture: 0
Location: B7F-16

	RESULT	QUAL	UNIT
4,4'-DDD	0.43	J	ug/k
4,4'-DDE	7.1		ug/k
4,4'-DDT	3.3	U	ug/k
Aldrin	1.7	U	ug/k
alpha-BHC	1.7	U	ug/k
Aroclor-1016	33	U	ug/k
Aroclor-1221	67	U	ug/k
Aroclor-1232	33	U	ug/k
Aroclor-1242	33	U	ug/k
Aroclor-1248	110		ug/k
Aroclor-1254	33	U	ug/k
Aroclor-1260	29	J	ug/k
beta-BHC	1.7	U	ug/k
Chlordane	17	U	ug/k
Chlorobenzilate	17	U	ug/k
delta-BHC	0.35	J	ug/k
Dieldrin	3.3	U	ug/k
Endosulfan I	1.7	U	ug/k
Endosulfan II	3.3	U	ug/k
Endosulfan sulfate	3.3	U	ug/k
Endrin	3.3	U	ug/k
Endrin aldehyde	3.3	U	ug/k
gamma-BHC	1.7	U	ug/k
Heptachlor	1.7	U	ug/k
Heptachlor epoxide	1.7	U	ug/k
Isodrin	3.3	U	ug/k
Methoxychlor	1.9	J	ug/k
Toxaphene	170	U	ug/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR012

PESTICIDES/PCBs

Sample Number: B7F-17
Sample Date: 9/12/96
Laboratory ID: S685530C-16
QC Type: CS
% Moisture: 0
Location: B7F-17

	RESULT	QUAL	UNITS
4,4'-DDD	0.25	J	ug/kg
4,4'-DDE	3.8		ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	25	J	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	16	J	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B7F-18
Sample Date: 9/12/96
Laboratory ID: S685530C-17
QC Type: CS
% Moisture: 0
Location: B7F-18

	RESULT	QUAL	UNITS
4,4'-DDD	0.99	J	ug/kg
4,4'-DDE	14		ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	230		ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	46		ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.91	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B7F-19
Sample Date: 9/12/96
Laboratory ID: S685530C-18
QC Type: CS
% Moisture: 0
Location: B7F-19

	RESULT	QUAL	UNIT
4,4'-DDD	0.76	J	ug/kg
4,4'-DDE	14		ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	240		ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	44		ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

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Sample Number: B7F-2
Sample Date: 9/11/96
Laboratory ID: S685530C-3
QC Type: CS
% Moisture: 0
Location: B7F-2

	RESULT	QUAL	UNITS
4,4'-DDD	1.3	J	ug/kg
4,4'-DDE	15		ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	210		ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	82		ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.2	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B7F-20
Sample Date: 9/12/96
Laboratory ID: S685530C-19
QC Type: CS
% Moisture: 0
Location: B7F-20

	RESULT	QUAL	UNITS
4,4'-DDD	1.1	J	ug/kg
4,4'-DDE	14		ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	250		ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	79		ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.92	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B7F-22
Sample Date: 9/12/96
Laboratory ID: S685530C-20
QC Type: CS
% Moisture: 0
Location: B7F-22

	RESULT	QUAL	UNI
4,4'-DDD	0.86	J	ug/
4,4'-DDE	22		ug/l
4,4'-DDT	3.3	U	ug/l
Aldrin	1.7	U	ug/l
alpha-BHC	1.7	U	ug/l
Aroclor-1016	33	U	ug/k
Aroclor-1221	67	U	ug/k
Aroclor-1232	33	U	ug/k
Aroclor-1242	33	U	ug/k
Aroclor-1248	37		ug/k
Aroclor-1254	33	U	ug/k
Aroclor-1260	43		ug/k
beta-BHC	1.7	U	ug/k
Chlordane	17	U	ug/k
Chlorobenzilate	17	U	ug/k
delta-BHC	1.7	U	ug/k
Dieldrin	3.3	U	ug/k
Endosulfan I	1.7	U	ug/k
Endosulfan II	3.3	U	ug/k
Endosulfan sulfate	3.3	U	ug/k
Endrin	3.3	U	ug/k
Endrin aldehyde	3.3	U	ug/k
gamma-BHC	1.7	U	ug/k
Heptachlor	1.7	U	ug/k
Heptachlor epoxide	1.7	U	ug/k
Isodrin	3.3	U	ug/k
Methoxychlor	17	U	ug/k
Toxaphene	170	U	ug/k

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Sample Number: B7F-28
Sample Date: 9/12/96
Laboratory ID: S685530C-1
QC Type: CS
% Moisture: 0
Location: B7F-28

	RESULT	QUAL	UNITS
4,4'-DDD	0.31	J	ug/kg
4,4'-DDE	8.6		ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	64		ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	22	J	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.08	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B7F-3
Sample Date: 9/11/96
Laboratory ID: S685530C-4
QC Type: CS
% Moisture: 0
Location: B7F-3

	RESULT	QUAL	UNITS
4,4'-DDD	1.2	J	ug/kg
4,4'-DDE	13		ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	120		ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	58		ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.14	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B7F-4
Sample Date: 9/11/96
Laboratory ID: S685530C-5
QC Type: CS
% Moisture: 0
Location: B7F-4

	RESULT	QUAL	UNIT
4,4'-DDD	0.81	J	ug/k
4,4'-DDE	17		ug/k
4,4'-DDT	3.3	U	ug/k
Aldrin	1.7	U	ug/k
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	280		ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	120		ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.28	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

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Sample Number: B7F-5
Sample Date: 9/11/96
Laboratory ID: S685530C-6
QC Type: CS
% Moisture: 0
Location: B7F-5

	RESULT	QUAL	UNITS
4,4'-DDD	0.93	J	ug/kg
4,4'-DDE	13		ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	220		ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	43		ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.49	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B7F-6
Sample Date: 9/11/96
Laboratory ID: S685530C-7
QC Type: CS
% Moisture: 0
Location: B7F-6

	RESULT	QUAL	UNITS
4,4'-DDD	1.1	J	ug/kg
4,4'-DDE	16		ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	280		ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	50		ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.52	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B7F-7
Sample Date: 9/11/96
Laboratory ID: S685530C-8
QC Type: CS
% Moisture: 0
Location: B7F-7

	RESULT	QUAL	UNIT
4,4'-DDD	3.3	U	ug/k
4,4'-DDE	15		ug/k
4,4'-DDT	3.3	U	ug/k
Aldrin	1.7	U	ug/k
alpha-BHC	1.7	U	ug/k
Aroclor-1016	33	U	ug/k
Aroclor-1221	67	U	ug/k
Aroclor-1232	33	U	ug/k
Aroclor-1242	33	U	ug/k
Aroclor-1248	260		ug/k
Aroclor-1254	33	U	ug/k
Aroclor-1260	49		ug/k
beta-BHC	1.7	U	ug/k
Chlordane	17	U	ug/k
Chlorobenzilate	17	U	ug/k
delta-BHC	0.42	J	ug/k
Dieldrin	3.3	U	ug/k
Endosulfan I	1.7	U	ug/k
Endosulfan II	3.3	U	ug/k
Endosulfan sulfate	3.3	U	ug/k
Endrin	3.3	U	ug/k
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

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Sample Number: B8C-2
Sample Date: 9/12/96
Laboratory ID: S685530C-12
QC Type: CS
% Moisture: 0
Location: B8C-2

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	0.37	J	ug/kg
4,4'-DDT	1.6	J	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	1	J	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	0.27	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	1.1	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	0.44	J	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B8L-8
Sample Date: 9/13/96
Laboratory ID: S685530C-14
QC Type: CS
% Moisture: 0
Location: B8L-8

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	0.31	J	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	0.95	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	1.3	J	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B8T-3
Sample Date: 9/12/96
Laboratory ID: S685530C-9
QC Type: CS
% Moisture: 0
Location: B8T-3

	RESULT	QUAL	UNI
4,4'-DDD	3.3	U	ug/
4,4'-DDE	3.3	U	ug/
4,4'-DDT	3.3	U	ug/
Aldrin	1.7	U	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	33	U	ug/
beta-BHC	1.7	U	ug/
Chlordane	17	U	ug/
Chlorobenzilate	17	U	ug/
delta-BHC	1.7	U	ug/
Dieldrin	3.3	U	ug/
Endosulfan I	1.7	U	ug/
Endosulfan II	3.3	U	ug/
Endosulfan sulfate	3.3	U	ug/
Endrin	3.3	U	ug/
Endrin aldehyde	1.9	J	ug/
gamma-BHC	1.7	U	ug/
Heptachlor	1.7	U	ug/
Heptachlor epoxide	1.7	U	ug/
Isodrin	3.3	U	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/

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Sample Number: B8T-4
Sample Date: 9/12/96
Laboratory ID: S685530C-10
QC Type: CS
% Moisture: 0
Location: B8T-4

	RESULT	QUAL	UNITS
4,4'-DDD	0.31	J	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	2	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B8T-9
Sample Date: 9/13/96
Laboratory ID: S685530C-11
QC Type: CS
% Moisture: 0
Location: B8T-9

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.18	J	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	0.89	J	ug/kg
Toxaphene	170	U	ug/kg

INORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 9, 1997**
FROM:	**TERESA M. HUDSON**	**COPIES:**	**DV FILE**
SUBJECT:	**INORGANIC DATA REVIEW – TAL METALS CTO 007 – KEY WEST, FLORIDA SDG – BR013**		
SAMPLES:	1/TISSUE/ 530E01		

Introduction

A data review was performed on the inorganic analytical data from CTO 007, NAS Key West, SDG No.BR013. One (1) tissue sample was included for TAL metals. No field duplicates were included within this SDG.

The sample was analyzed for Target Analyte List (TAL) metals. The sample was collected by Brown & Root Environmental on September 13, 1996 and analyzed by Savannah Laboratories and Environmental Services, Inc. under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- Calibration Verifications
- Laboratory Blank Analyses
- * Matrix Spike Results

* Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/ preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level (soil)
aluminum	29.7 ug/L	29.7 MG/KG
arsenic	7.0 ug/L	7.0 MG/KG
barium	1.9 ug/L	1.9 MG/KG
beryllium	0.3 ug/L	0.3 MG/KG
calcium	26.9 ug/L	26.9 MG/KG
chromium	1.3 ug/L	1.3 MG/KG
cobalt	0.7 ug/L	0.7 MG/KG
copper	1.0 ug/L	1.0 MG/KG
lead	2.4 ug/L	2.4 MG/KG
magnesium	21.8 ug/L	21.8 MG/KG
manganese	1.6 ug/L	1.6 MG/KG
mercury[1]	0.011 MG/KG	0.055 MG/KG
silver	1.6 ug/L	1.6 MG/KG
sodium	16.9 ug/L	16.9 MG/KG
vanadium	1.8 ug/L	1.8 MG/KG
zinc	0.7 ug/L	0.7 MG/KG

[1] Maximum concentration found in a soil preparation blank.

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for aluminum, arsenic, barium, chromium, lead, manganese, and vanadium have been qualified as nondetected "U". No action was taken for the remaining analytes since the results were either greater than the action level or were nondetect.

Notes

It was noted that the sample met the contract holding time limit criteria of six (6) months.

It was noted that calibration verifications for ICP CRDL standards exceeded the quality control limits for lead. However, no data validation action was taken.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method blank.

Other Factors Affecting Data Quality: None.

No other problems were encountered in this case.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review," February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Teresa M. Hudson

Brown & Root Environmental
Teresa M. Hudson
Environmental Scientist/Data Validator

Julia F. Bradley for

Brown & Root Environmental
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

KEY WEST
SDG – BR013

TABLE 1 – RECOMMENDATION SUMMARY

Aluminum	A[1]	Magnesium	
Antimony		Manganese	A[1]
Arsenic	A[1]	Mercury	
Barium	A[1]	Nickel	
Beryllium		Potassium	
Cadmium		Selenium	
Calcium		Silver	
Chromium	A[1]	Sodium	
Cobalt		Thallium	
Copper		Vanadium	A[1]
Iron		Zinc	
Lead	A[1]		

If the field is left blank, the qualifier is A - Accept all data.

A[1] Accept data but qualify as nondetected, "U", as a result of laboratory blank contamination.

APPENDIX A
Qualified Analytical Results

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR013

INORGANICS

Sample Number: B7F-34
Sample Date: 9/13/96
Laboratory ID: S685530E-1
QC Type: CS
% Moisture: 0
Location: B7F-34

	RESULT	QUAL	UNITS
Aluminum	3.6	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	5.1	U	mg/kg
Barium	1.1	U	mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	16300		mg/kg
Chromium	0.45	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	2.6		mg/kg
Iron	15.6		mg/kg
Lead	0.67	U	mg/kg
Magnesium	579		mg/kg
Manganese	1.5	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	2840		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	1740		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.24	U	mg/kg
Zinc	41.8		mg/kg

ORGANIC DATA VALIDATION

TO:	**CHUCK BRYAN**	**DATE:**	**JANUARY 23, 1997**
FROM:	**R. MARTY RAY**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA REVIEW - PEST/PCB ORGANICS**
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG BR013

SAMPLES: 1/Tissue:

B7F-34

The sample set for the CTO 007 NAS Key West site, SDG BR013, consists of one (1) tissue sample. The sample was analyzed for Target Compound List (TCL) pesticide/PCB compounds. No field duplicate pairs were included in this SDG.

The sample was collected by Brown and Root Environmental on September 13th, 1996 and analyzed by Savannah Laboratories & Environmental Services, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Method 8080 analytical and reporting protocols. The data was evaluated according to the following parameters:

Holding times
Initial and continuing calibrations
* Laboratory and field blank analyses
Surrogate spike recoveries
Compound Quantitation

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Pesticide/PCBs

The holding time between the date of collection and the date of extraction exceeds 14 days for this sample. However, due to the absence of technical holding time requirements for tissue samples, no action was taken.

The following pesticide compounds were detected in the laboratory method blank at the maximum concentrations indicated below:

Compound	Maximum Concentration	Action Level
4,4'-DDD	.10 µg/Kg	.50 µg/Kg
Endosulfan Sulfate	.60 µg/Kg	3.0 µg/Kg

Sample B7F-34 was affected by the blank contamination.

4,4'-DDD was detected in the environmental sample at a concentration of 1.5 µg/L, which is above the action level and below the method detection limit. The result was qualified as estimated (J).

A positive result in for endosulfan sulfate was reported at a concentration below the action level and the method detection limit. The method detection limit was replaced with a revised detection limit and qualified non-detected (U).

A %D greater than 100%, between columns 1 and 2 was reported for 4,4'-DDD the results were qualified as estimated (J).

No other problems were noted.

Executive Summary

Laboratory Performance: Endosulfan sulfate and 4,4'-DDD was detected in the laboratory method blank. Holding times between the date of collection and the date of extraction exceeds 14 days for the sample. 4.4'-DDD reported a %D above 100%.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Brown and Root Environmental

R. Marty Ray
Environmental Scientist/Data Validator

for
Brown & Root Environmental
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

NAS KEY WEST

SDG BR013

TABLE 1 - RECOMMENDATION SUMMARY

Sample No.	PEST/PCB
B7F-34	A^1 J^1 J^2

If the field is left blank, the qualifier is A - Accept all data.

A^1 - Accept data, but change positive results for endosulfan sulfate to a revised detection limit and qualify as non-detected, (U).

J^1 - Removed laboratory qualifier (P) and estimated (J) for 4,4`-DDD, as result of the %D between columns 1 and 2 was greater than 100%.

J^2 Positive results reported below the MDL were estimated (J).

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR013

PESTICIDES/PCBs

Sample Number: B7F-34
Sample Date: 9/13/96
Laboratory ID: S685530E-1
QC Type: CS
% Moisture: 0
Location: B7F-34

	RESULT	QUAL	UNITS
4,4'-DDD	1.5	J	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	200		ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	98		ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	2.9	J	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

INORGANIC DATA VALIDATION

Brown & Root Environmental INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 17, 1997**
FROM:	**TERESA M. HUDSON**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA REVIEW - TAL METALS**
CTO 007 -KEY WEST, FLORIDA
SDG – BR014

SAMPLES: 20/TISSUE/

S5V-27	S5V-29	I1L-7	I1CH-20
S7V-3	S7V-2	I1L-8	I1CH-21
S5V-28	S7V-4	I1L-9	I1CH-22
S5V-26	I1L-5	I1CH-18	I1CH-23
S7V-1	I1L-6	I1CH-19	I1L-10

Introduction

A data review was performed on the inorganic analytical data from CTO 007, NAS Key West, SDG No. BR014. Twenty (20) tissue samples were included for TAL metals. No field duplicates were included within this SDG.

All samples were analyzed for Target Analyte List (TAL) metals. The samples were collected by Brown & Root Environmental on September 17 and 18, 1996 and analyzed by Savannah Laboratories and Environmental Services, Inc. under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- Calibration Verifications
- * Laboratory Blank Analyses
- Matrix Spike Results

* Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/preparation/field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level (soil)
aluminum[1]	4.637 MG/KG	23.185 MG/KG
barium	1.9 ug/L	1.9 MG/KG
beryllium	0.1 ug/L	0.1 MG/KG
calcium[1]	5.629 MG/KG	28.145 MG/KG
chromium	2.8 ug/L	2.8 MG/KG
cobalt	0.8 ug/L	0.8 MG/KG
copper	1.8 ug/L	1.8 MG/KG
iron	34.4 ug/L	34.4 MG/KG
magnesium	25.4 ug/L	25.4 MG/KG
manganese	2.2 ug/L	2.2 MG/KG
nickel	3.0 ug/L	3.0 MG/KG
silver	1.7 ug/L	1.7 MG/KG
sodium	19.8 ug/L	19.8 MG/KG
thallium	6.2 ug/L	6.2 MG/KG
vanadium	2.3 ug/L	2.3 MG/KG
zinc[1]	0.129 MG/KG	0.645 MG/KG

Samples affected: All.

[1] Maximum concentration found in a soil preparation blank.

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for aluminum, barium, chromium, cobalt, copper, iron, manganese, nickel, silver, and vanadium have been qualified as nondetected "U." No action was taken for the remaining analytes since the results were either positive and greater than the action level or nondetect.

Notes

It was noted that all samples met the contract holding time limit criteria of six (6) months.

It was noted that arsenic, thallium, and zinc exceeded the quality control limits for Contract Required Detection Limit (CRDL) Percent Recoveries (R%). However, no validation actions were taken for CRDL R%.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method blank.

Other Factors Affecting Data Quality: None.

No other problems were encountered in this case.

The data for these analyses were reviewed in accordance with the "National Functional Guidelines for Inorganic Review." February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Teresa M Hudson

Brown & Root Environmental
Teresa M. Hudson
Environmental Scientist/Data Validator

Julia I Bradley for

Brown & Root Environmental
Joseph A. Sanchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation.

KEY WEST
SDG – BR014

TABLE 1 - RECOMMENDATION SUMMARY

Aluminum	A[1]	Magnesium	
Antimony		Manganese	A[1]
Arsenic		Mercury	
Barium	A[1]	Nickel	A[1]
Beryllium		Potassium	
Cadmium		Selenium	
Calcium		Silver	A[1]
Chromium	A[1]	Sodium	
Cobalt	A[1]	Thallium	
Copper	A[1]	Vanadium	A[1]
Iron	A[1]	Zinc	
Lead			

If the field is left blank, the qualifier is A - Accept all data.

A[1] – Accept data but qualify positive results < Action Level as nondetected, "U," as a result of laboratory blank contamination.

APPENDIX A
Qualified Analytical Results

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR014

INORGANICS

Sample Number: I1CH-18
Sample Date: 9/18/96
Laboratory ID: S685597-14
QC Type: CS
% Moisture: 0
Location: I1CH-18

	RESULT	QUAL	UNITS
Aluminum	7	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	70.2		mg/kg
Barium	0.04	U	mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.46		mg/kg
Calcium	2710		mg/kg
Chromium	0.16	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	35.6	U	mg/kg
Iron	29		mg/kg
Lead	0.33		mg/kg
Magnesium	2600		mg/kg
Manganese	7.6		mg/kg
Mercury	0.01		mg/kg
Nickel	0.79	U	mg/kg
Potassium	4420		mg/kg
Selenium	1.5		mg/kg
Silver	0.16	U	mg/kg
Sodium	3500		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.19	U	mg/kg
Zinc	19		mg/kg

Sample Number: I1CH-19
Sample Date: 9/18/96
Laboratory ID: S685597-15
QC Type: CS
% Moisture: 0
Location: I1CH-19

	RESULT	QUAL	UNITS
Aluminum	6.4	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	63.2		mg/kg
Barium	0.1	U	mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	1020		mg/kg
Chromium	0.16	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	8.7		mg/kg
Iron	16.7	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	1870		mg/kg
Manganese	1.7	U	mg/kg
Mercury	0.01		mg/kg
Nickel	0.29	U	mg/kg
Potassium	2720		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	2730		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.19	U	mg/kg
Zinc	15		mg/kg

Sample Number: I1CH-20
Sample Date: 9/18/96
Laboratory ID: S685597-16
QC Type: CS
% Moisture: 0
Location: I1CH-20

	RESULT	QUAL	UNIT
Aluminum	10.3	U	mg/k
Antimony	1.1	U	mg/k
Arsenic	46.9		mg/k
Barium	0.06	U	mg/k
Beryllium	0.01	U	mg/k
Cadmium	0.16		mg/k
Calcium	1680		mg/k
Chromium	0.16	U	mg/k
Cobalt	0.11	U	mg/k
Copper	19.2		mg/kg
Iron	19.1	U	mg/kg
Lead	0.34		mg/kg
Magnesium	2320		mg/kg
Manganese	3.2		mg/kg
Mercury	0.02		mg/kg
Nickel	0.29	U	mg/kg
Potassium	2830		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	3400		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.19	U	mg/kg
Zinc	18.4		mg/kg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR014

INORGANICS

Sample Number: I1CH-21
Sample Date: 9/18/96
Laboratory ID: S685597-17
QC Type: CS
% Moisture: 0
Location: I1CH-21

	RESULT	QUAL	UNITS
Aluminum	5.8	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	69.2		mg/kg
Barium	0.09	U	mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	1650		mg/kg
Chromium	0.16	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	11.4		mg/kg
Iron	18.1	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	2360		mg/kg
Manganese	1.5	U	mg/kg
Mercury	0.01		mg/kg
Nickel	0.29	U	mg/kg
Potassium	3020		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	3300		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.19	U	mg/kg
Zinc	18.7		mg/kg

Sample Number: I1CH-22
Sample Date: 9/18/96
Laboratory ID: S685597-18
QC Type: CS
% Moisture: 0
Location: I1CH-22

	RESULT	QUAL	UNITS
Aluminum	32.6		mg/kg
Antimony	1.1	U	mg/kg
Arsenic	72.9		mg/kg
Barium	0.18	U	mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.16		mg/kg
Calcium	3640		mg/kg
Chromium	0.16	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	27.9		mg/kg
Iron	39.5		mg/kg
Lead	0.36		mg/kg
Magnesium	3020		mg/kg
Manganese	5.3		mg/kg
Mercury	0.02		mg/kg
Nickel	0.29	U	mg/kg
Potassium	3260		mg/kg
Selenium	2.1		mg/kg
Silver	0.16	U	mg/kg
Sodium	2850		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.26	U	mg/kg
Zinc	14.9		mg/kg

Sample Number: I1CH-23
Sample Date: 9/18/96
Laboratory ID: S685597-19
QC Type: CS
% Moisture: 0
Location: I1CH-23

	RESULT	QUAL	UNI
Aluminum	8.3	U	mg/
Antimony	1.1	U	mg/l
Arsenic	60.5		mg/k
Barium	0.04	U	mg/k
Beryllium	0.01	U	mg/k
Cadmium	1.8		mg/k
Calcium	1410		mg/k
Chromium	0.16	U	mg/k
Cobalt	0.11	U	mg/k
Copper	63		mg/k
Iron	35.7		mg/k
Lead	0.35		mg/k
Magnesium	2210		mg/k
Manganese	2.1	U	mg/k
Mercury	0.19		mg/k
Nickel	0.29	U	mg/k
Potassium	2920		mg/k
Selenium	1	U	mg/k
Silver	0.22	U	mg/k
Sodium	3590		mg/k
Thallium	0.92	U	mg/k
Vanadium	0.19	U	mg/k
Zinc	223		mg/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR014

INORGANICS

Sample Number: I1L-10
Sample Date: 9/18/96
Laboratory ID: S685597-20
QC Type: CS
% Moisture: 0
Location: I1L-10

	RESULT	QUAL	UNITS
Aluminum	10.6	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	20.7		mg/kg
Barium	0.67	U	mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.24		mg/kg
Calcium	17400		mg/kg
Chromium	0.16	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	125		mg/kg
Iron	6.9	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	2290		mg/kg
Manganese	0.78	U	mg/kg
Mercury	0.01		mg/kg
Nickel	0.29	U	mg/kg
Potassium	2460		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	3950		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.25		mg/kg
Zinc	35.3		mg/kg

Sample Number: I1L-5
Sample Date: 9/18/96
Laboratory ID: S685597-9
QC Type: CS
% Moisture: 0
Location: I1L-5

	RESULT	QUAL	UNITS
Aluminum	8.3	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	28.2		mg/kg
Barium	0.2	U	mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	3690		mg/kg
Chromium	0.16	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	19.2		mg/kg
Iron	4.9	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	939		mg/kg
Manganese	0.1	U	mg/kg
Mercury	0.05		mg/kg
Nickel	0.29	U	mg/kg
Potassium	3080		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	3610		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.21	U	mg/kg
Zinc	21.9		mg/kg

Sample Number: I1L-6
Sample Date: 9/18/96
Laboratory ID: S685597-10
QC Type: CS
% Moisture: 0
Location: I1L-6

	RESULT	QUAL	UNIT
Aluminum	8.2	U	mg/
Antimony	1.1	U	mg/
Arsenic	23.8		mg/k
Barium	0.38	U	mg/k
Beryllium	0.01	U	mg/k
Cadmium	0.3		mg/k
Calcium	9270		mg/k
Chromium	0.16	U	mg/k
Cobalt	0.11	U	mg/k
Copper	87		mg/k
Iron	11.3	U	mg/k
Lead	0.32	U	mg/k
Magnesium	1330		mg/k
Manganese	0.95	U	mg/k
Mercury	0.02		mg/k
Nickel	0.34	U	mg/k
Potassium	2390		mg/k
Selenium	1	U	mg/k
Silver	0.42	U	mg/k
Sodium	3380		mg/k
Thallium	0.92	U	mg/k
Vanadium	0.82	U	mg/k
Zinc	25.2		mg/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR014

INORGANICS

Sample Number: I1L-7
Sample Date: 9/18/96
Laboratory ID: S685597-11
QC Type: CS
% Moisture: 0
Location: I1L-7

	RESULT	QUAL	UNITS
Aluminum	11.6	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	22.5		mg/kg
Barium	0.44	U	mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.14		mg/kg
Calcium	9620		mg/kg
Chromium	0.16	U	mg/kg
Cobalt	0.14	U	mg/kg
Copper	58		mg/kg
Iron	8.6	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	1380		mg/kg
Manganese	0.58	U	mg/kg
Mercury	0.04		mg/kg
Nickel	0.29	U	mg/kg
Potassium	2600		mg/kg
Selenium	1	U	mg/kg
Silver	0.23	U	mg/kg
Sodium	3340		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.29	U	mg/kg
Zinc	26.8		mg/kg

Sample Number: I1L-8
Sample Date: 9/18/96
Laboratory ID: S685597-12
QC Type: CS
% Moisture: 0
Location: I1L-8

	RESULT	QUAL	UNITS
Aluminum	10.2	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	28.7		mg/kg
Barium	0.68	U	mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.12		mg/kg
Calcium	21400		mg/kg
Chromium	0.16	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	43.3		mg/kg
Iron	5.9	U	mg/kg
Lead	0.39		mg/kg
Magnesium	2550		mg/kg
Manganese	0.5	U	mg/kg
Mercury	0.04		mg/kg
Nickel	0.29	U	mg/kg
Potassium	2840		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	5860		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.37	U	mg/kg
Zinc	35.4		mg/kg

Sample Number: I1L-9
Sample Date: 9/18/96
Laboratory ID: S685597-13
QC Type: CS
% Moisture: 0
Location: I1L-9

	RESULT	QUAL	UNIT
Aluminum	7.5	U	mg/
Antimony	1.1	U	mg/
Arsenic	31.8		mg/k
Barium	0.44	U	mg/k
Beryllium	0.01	U	mg/k
Cadmium	0.08	U	mg/k
Calcium	13200		mg/k
Chromium	0.16	U	mg/k
Cobalt	0.11	U	mg/k
Copper	18		mg/k
Iron	6	U	mg/k
Lead	0.32	U	mg/k
Magnesium	1670		mg/k
Manganese	0.44	U	mg/k
Mercury	0.07		mg/k
Nickel	0.29	U	mg/k
Potassium	3260		mg/k
Selenium	1	U	mg/k
Silver	0.16	U	mg/k
Sodium	2620		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.25	U	mg/kg
Zinc	21.4		mg/kg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR014

INORGANICS

Sample Number: S5V-26
Sample Date: 9/17/96
Laboratory ID: S685597-4
QC Type: CS
% Moisture: 0
Location: S5V-26

	RESULT	QUAL	UNITS
Aluminum	15.8	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	1.1		mg/kg
Barium	4.3		mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	2130		mg/kg
Chromium	0.19	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	1.8	U	mg/kg
Iron	22.9	U	mg/kg
Lead	0.45		mg/kg
Magnesium	1350		mg/kg
Manganese	1.9	U	mg/kg
Mercury	0.02		mg/kg
Nickel	0.29	U	mg/kg
Potassium	2370		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	1220		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.19	U	mg/kg
Zinc	57.6		mg/kg

Sample Number: S5V-27
Sample Date: 9/17/96
Laboratory ID: S685597-1
QC Type: CS
% Moisture: 0
Location: S5V-27

	RESULT	QUAL	UNITS
Aluminum	49.9		mg/kg
Antimony	1.1	U	mg/kg
Arsenic	0.94	U	mg/kg
Barium	1.5	U	mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.42		mg/kg
Calcium	3800		mg/kg
Chromium	0.16	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	1	U	mg/kg
Iron	13	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	1660		mg/kg
Manganese	1.1	U	mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.29	U	mg/kg
Potassium	1680		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	9320		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.19	U	mg/kg
Zinc	4.7		mg/kg

Sample Number: S5V-28
Sample Date: 9/17/96
Laboratory ID: S685597-3
QC Type: CS
% Moisture: 0
Location: S5V-28

	RESULT	QUAL	UNIT
Aluminum	22.3	U	mg/k
Antimony	1.1	U	mg/k
Arsenic	1		mg/k
Barium	11.8		mg/k
Beryllium	0.01	U	mg/k
Cadmium	1.6		mg/k
Calcium	2700		mg/k
Chromium	0.21	U	mg/k
Cobalt	0.11	U	mg/k
Copper	1.5	U	mg/k
Iron	34.4	U	mg/k
Lead	1.1		mg/k
Magnesium	1200		mg/k
Manganese	1.8	U	mg/k
Mercury	0.01		mg/k
Nickel	0.29	U	mg/k
Potassium	2080		mg/k
Selenium	1	U	mg/k
Silver	0.16	U	mg/k
Sodium	752		mg/k
Thallium	0.92	U	mg/k
Vanadium	0.3	U	mg/k
Zinc	31.1		mg/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR014

INORGANICS

Sample Number: S5V-29
Sample Date: 9/17/96
Laboratory ID: S685597-6
QC Type: CS
% Moisture: 0
Location: S5V-29

	RESULT	QUAL	UNITS
Aluminum	10.8	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	0.94	U	mg/kg
Barium	0.69	U	mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	2640		mg/kg
Chromium	0.16	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	2.2		mg/kg
Iron	9.4	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	1980		mg/kg
Manganese	1.1	U	mg/kg
Mercury	0.01		mg/kg
Nickel	0.29	U	mg/kg
Potassium	1690		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	8560		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.19	U	mg/kg
Zinc	13		mg/kg

Sample Number: S7V-1
Sample Date: 9/17/96
Laboratory ID: S685597-5
QC Type: CS
% Moisture: 0
Location: S7V-1

	RESULT	QUAL	UNITS
Aluminum	11.5	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	0.94	U	mg/kg
Barium	0.44	U	mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	4120		mg/kg
Chromium	0.16	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	3.1		mg/kg
Iron	6.9	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	1520		mg/kg
Manganese	1.3	U	mg/kg
Mercury	0.01		mg/kg
Nickel	0.29	U	mg/kg
Potassium	1510		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	9400		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.19	U	mg/kg
Zinc	3.1		mg/kg

Sample Number: S7V-2
Sample Date: 9/17/96
Laboratory ID: S685597-7
QC Type: CS
% Moisture: 0
Location: S7V-2

	RESULT	QUAL	UNIT
Aluminum	13.1	U	mg/k
Antimony	1.1	U	mg/k
Arsenic	1.2		mg/k
Barium	4.9		mg/k
Beryllium	0.01	U	mg/k
Cadmium	0.08	U	mg/k
Calcium	1400		mg/k
Chromium	0.16	U	mg/k
Cobalt	0.11	U	mg/k
Copper	1.7	U	mg/k
Iron	27.9	U	mg/k
Lead	0.44		mg/kg
Magnesium	1320		mg/kg
Manganese	18.9		mg/kg
Mercury	0.19		mg/kg
Nickel	0.71	U	mg/kg
Potassium	2580		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	2790		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.19	U	mg/kg
Zinc	33.2		mg/kg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR014

INORGANICS

Sample Number: S7V-3
Sample Date: 9/17/96
Laboratory ID: S685597-2
QC Type: CS
% Moisture: 0
Location: S7V-3

	RESULT	QUAL	UNITS
Aluminum	11.5	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	0.94	U	mg/kg
Barium	0.48	U	mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	3020		mg/kg
Chromium	0.16	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	1.8	U	mg/kg
Iron	6.4	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	1050		mg/kg
Manganese	0.99	U	mg/kg
Mercury	0.01		mg/kg
Nickel	0.29	U	mg/kg
Potassium	3240		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	8370		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.19	U	mg/kg
Zinc	3.8		mg/kg

Sample Number: S7V-4
Sample Date: 9/17/96
Laboratory ID: S685597-8
QC Type: CS
% Moisture: 0
Location: S7V-4

	RESULT	QUAL	UNITS
Aluminum	10.8	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	0.94	U	mg/kg
Barium	5.9		mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.2		mg/kg
Calcium	1680		mg/kg
Chromium	0.16	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	2.1	U	mg/kg
Iron	19.6	U	mg/kg
Lead	0.52		mg/kg
Magnesium	1180		mg/kg
Manganese	2.7		mg/kg
Mercury	0.04		mg/kg
Nickel	0.69	U	mg/kg
Potassium	3130		mg/kg
Selenium	1	U	mg/kg
Silver	0.16	U	mg/kg
Sodium	1510		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.19	U	mg/kg
Zinc	50.9		mg/kg

ORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**FEBRUARY 4, 1997**
FROM:	**TERESA M. HUDSON**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA REVIEW – PEST/PCB ORGANICS**
CTO 007 – NAS KEY WEST, KEY WEST, FLORIDA
SDG – BR014

SAMPLES: 20/TISSUE/

S5V-27	S5V-29	I1L-7	I1CH-20
S7V-3	S7V-2	I1L-8	I1CH-21
S5V-28	S7V-4	I1L-9	I1CH-22
S5V-26	I1L-5	I1CH-18	I1CH-23
S7V-1	I1L-6	I1CH-19	I1L-10

The sample set for the CTO 007 NAS Key West site, SDG BR014, consists of twenty (20) tissue samples. All samples were analyzed for Target Compound List (TCL) pesticide/PCB organic compounds.

The samples were collected by Brown & Root Environmental on September 17 and 18, 1996 and analyzed by Savannah Laboratories & Environmental Services, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Method 8080 analytical and reporting protocols. The data was evaluated according to the following parameters:

- Holding times
- * Initial and continuing calibrations
- * Laboratory and field blank analyses
- Surrogate spike recoveries
- * Compound Quantitation

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Pesticide/PCBs

The following pesticide compound was detected in the laboratory method blank at the maximum concentration indicated below:

Compound	Maximum Concentration	Action Level
Endrin	0.13 ug/Kg	0.65 ug/Kg
Endosulfan II	0.12 ug/Kg	0.6 ug/Kg
4,4'-DDD	0.29 ug/Kg	1.45 ug/Kg
Methoxychlor	2.6 ug/Kg	13.0 ug/Kg

Samples Affected: All, except I1L-6, S5V-29, S7V-3, and S7V-4.

Percent moisture, sample aliquot size, and dilution factors were considered prior to the application of the action level. Positive results in the affected samples for these compounds reported at concentrations below the detection limit were replaced with revised detection limits. Positive results below the detection limit and above the action level were qualified estimated, "J." Positive results below the action level were qualified nondetect, "U."

The laboratory qualifier "P" was removed from all target compound data with a %D above 25% and less than 100% between positive results on columns 1 and 2. The affected target compounds and samples are listed in the table below.

SAMPLE	AFFECTED COMPOUNDS
S5V-28	Gamma-BHC (lindane), Heptachlor epoxide
S7V-1	Endrin aldehyde
S7V-2	Gamma-BHC (lindane)
I1L-9	Beta-BHC
I1CH-18	4,4'-DDT, Endrin aldehyde
I1CH-20	4,4'-DDT
I1CH-21	Aldrin, Chlorobenzilate
I1CH-22	4,4'-DDE, Endrin aldehyde
I1L-10	4,4'-DDT

The laboratory qualifier "P" was removed from the target compound data for those compounds with a %D between columns 1 and 2 greater than 100%. Positive hits were qualified as estimated "J." The affected samples and target compounds are listed in the table below.

SAMPLE	AFFECTED COMPOUNDS
S5V-27	Beta-BHC, Heptachlor
S7V-3	Delta-BHC
S5V-28	Endrin aldehyde, Chlorobenzilate
S5V-26	Heptachlor epoxide, Endrin aldehyde
S7V-1	Alpha-BHC
S7V-2	Delta-BHC, Aldrin, Heptachlor epoxide, Endosulfan I
I1L-5	4,4'-DDT, Endrin aldehyde
I1L-6	Endrin aldehyde
I1L-8	Endrin aldehyde
I1L-9	Endrin aldehyde
I1CH-18	Endosulfan I, Endrin, Chlorobenzilate
I1CH-19	Endosulfan II
I1CH-20	Aldrin, Endrin aldehyde

SAMPLE	AFFECTED COMPOUNDS
I1CH-22	4,4'-DDT, Chlorobenzilate
I1CH-23	Aldrin, Endrin, 4,4'-DDT, Endrin aldehyde
I1L-10	Aldrin, Endrin aldehyde

Due to coelution matrix interference on one of the GC columns, confirmation of Delta-BHC in samples S5V-28, I1CH-18, and I1CH-20 was not feasible. Thus, the Delta-BHC concentrations reported for these samples are based on a single column. The laboratory qualifier "X" was removed and the estimated "J" was left to indicate estimated concentrations.

Due to coeluting matrix interference on one of the GC columns, confirmation of Heptachlor in S5V-28 was not feasible. Thus, the Heptachlor concentration reported for this sample is based on a single column. The laboratory qualifier "X" was removed and the estimated "J" was left to indicate an estimated concentration.

Due to coelution matrix interference on one of the GC columns, confirmation of Endosulfan sulfate in samples I1L-5 and I1CH-22 was not feasible. Thus, the Endosulfan sulfate concentrations reported for these samples are based on a single column. The laboratory qualifier "X" was removed and the estimated "J" was left to indicate estimated concentrations.

Due to coeluting matrix interference on one of the GC columns, confirmation of 4,4'-DDT in I1L-8 was not feasible. Thus, the 4,4'-DDT concentration reported for this sample is based on a single column. The laboratory qualifier "X" was removed and the estimated "J" was left to indicate an estimated concentration.

Continuing Calibration Verifications (CCV) %D exceeded 25% for Chlorobenzilate, Heptachlor, Heptachlor epoxide, Endosulfan I, Endosulfan II, 4,4'-DDT, Endrin aldehyde, Methoxychlor, Beta-BHC, 4,4'-DDE, 4,4'-DDD, Alpha-BHC, Delta-BHC, and Isodrin. However, no actions were taken for CCV %D.

It was noted that one CCV only contained four of the compounds of interest.

High %Ds between columns 1 and 2 were reported for Endrin, Endosulfan II, 4,4'-DDD, and Methoxychlor in some samples, however no action was taken to qualify since this data was previously qualified for laboratory method blank contamination.

It was noted that samples I1CH-19, I1CH-20, and I1CH-21 were analyzed at 2X, 5X, and 5X dilutions, respectively.

No other problems were noted.

Executive Summary

Laboratory Performance: Endrin, Endosulfan II, 4,4'-DDD, and Methoxychlor were detected in the laboratory method blank. Some pesticide/PCB compounds reported %Ds between columns 1 and 2 above the quality control limit of 25%, but not over 100%. Some pesticide/PCB compounds reported %Ds above 100%. Due to coeluting matrix interference on one of the GC columns, confirmation of multiple compounds was not feasible for some samples. Thus, the concentrations reported for these samples are based on a single column.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program" (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Brown & Root Environmental
Teresa M. Hudson
Environmental Scientist/Data Validator

for
Brown & Root Environmental
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

NAS KEY WEST
SDG – BR014

TABLE 1 - RECOMMENDATION SUMMARY

Sample Number	PEST/PCB
S5V-27	A^{1} $J^{1, 2, 25}$
S7V-3	$J^{3, 25}$
S5V-28	$A^{1, 2, 3}$ $J^{4, 5, 6, 7, 8, 9, 25}$
S5V-26	A^{1} $J^{8, 10, 25}$
S7V-1	A^{4} $J^{11, 12, 25}$
S5V-29	
S7V-2	A^{1} $J^{3, 5, 10, 13, 14, 25}$
S7V-4	
I1L-5	A^{1} $J^{8, 15, 16, 25}$
I1L-6	$J^{8, 25}$
I1L-7	$A^{1, 4}$ $J^{15, 25}$
I1L-8	$A^{1, 4}$ $J^{8, 17, 25}$
I1L-9	A^{4} $J^{8, 18, 25}$
I1CH-18	A^{2} $J^{4, 9, 12, 14, 19, 20, 25}$
I1CH-19	A^{4} $J^{21, 25}$
I1CH-20	A^{1} $J^{4, 8, 13, 20, 25}$
I1CH-21	$A^{1, 2, 3}$ $J^{22, 23, 25}$
I1CH-22	A^{2} $J^{9, 12, 15, 16, 24, 25}$
I1CH-23	$A^{2, 3}$ $J^{8, 13, 16, 19, 25}$
I1L-10	$A^{2, 3}$ $J^{8, 13, 20, 25}$

If the field is left blank, the qualifier is A - Accept all data.

A^{1} Accept data, but change positive results for endrin to a revised detection limit and qualify as non-detected, (U) for blank contamination.

A^{2} Accept data, but change positive results for endosulfan II to a revised detection limit and qualify as non-detected, (U) for blank contamination.

A^{3} Accept data, but change positive results for 4,4'-DDD to a revised detection limit and qualify as non-detected, (U) for blank contamination.

A^{4} Accept data, but change positive results for methoxychlor to a revised detection limit and qualify as non-detected, (U) for blank contamination.

J^{1} Removed the laboratory qualifier (P) for beta-BHC and qualified as estimated (J), as result of %D above 100%.

J^{2} Removed the laboratory qualifier (P) for heptachlor and qualified as estimated (J), as result of %D above 100%.

J^{3} Removed the laboratory qualifier (P) for delta-BHC and qualified as estimated (J), as result of %D above 100%.

J^{4} Removed the laboratory qualifier (X) which indicates that the results for delta-BHC are based on one column. Qualified as estimate (J).

J^{5} Removed laboratory qualifier (P) for gamma-BHC (lindane), used to indicate a high %D. No further action was taken.

J^{6} Removed the laboratory qualifier (X) which indicates that the results for heptachlor are based on one column. Qualified as estimate (J).

J^{7} Removed laboratory qualifier (P) for heptachlor epoxide , used to indicate a high %D. No further action was taken.

J^{8} Removed laboratory qualifier (P) for endrin aldehyde and estimated (J), as result of %D above 100.

J^{9} Removed the laboratory qualifier (P) for chlorobenzilate and estimated (J), as result of %D above 100%.

J^{10} Removed the laboratory qualifier (P) for heptachlor epoxide and estimated (J), as result of %D above 100%.

J^{11} Removed the laboratory qualifier (P) for alpha-BHC and estimated (J), as result of %D above 100%.

J^{12} Removed the laboratory qualifier (P) for endrin aldehyde, used to indicate a high %D. No further action was taken.

J^{13} Removed the laboratory qualifier (P) for aldrin and estimated (J), as result of %D above 100%.

J^{14} Removed the laboratory qualifier (P) for endosulfan I and estimated (J), as result of %D above 100%.

J^{15} Removed the laboratory qualifier (X) which indicates that the results for endosulfan sulfate are based on one column. Qualified as estimate (J).

J^{16} Removed the laboratory qualifier (P) for 4,4'-DDT and estimated (J), as result of %D above 100%.

J^{17} Removed the laboratory qualifier (X) which indicates that the results for 4,4'-DDT are based on one column. Qualified as estimate (J).

J^{18} Removed the laboratory qualifier (P) for beta-BHC, used to indicate a high %D. No further action was taken.

J^{19} Removed the laboratory qualifier (P) for aldrin and estimated (J), as result of %D above 100%.

J^{20} Removed the laboratory qualifier (P) for 4,4'-DDT, used to indicate a high %D. No further action was taken.

J^{21} Removed the laboratory qualifier (P) for endosulfan II and estimated (J), as result of %D above 100%.

J^{22} Removed the laboratory qualifier (P) for aldrin, used to indicate a high %D. No further action was taken.

J^{23} Removed the laboratory qualifier (P) for chlorobenzilate, used to indicate a high %D. No further action was taken.

J^{24} Removed the laboratory qualifier (P) for 4,4'-DDE, used to indicate a high %D. No further action was taken.

J^{25} Positive results less than CRQL were qualified as estimated (J).

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR014

PESTICIDES/PCBs

Sample Number: I1CH-18
Sample Date: 9/18/96
Laboratory ID: S685597-14
QC Type: CS
% Moisture: 0
Location: I1CH-18

	RESULT	QUAL	UNITS
4,4'-DDD	6.6	U	ug/kg
4,4'-DDE	3.6	J	ug/kg
4,4'-DDT	2.9	J	ug/kg
Aldrin	3.4	U	ug/kg
alpha-BHC	3.4	U	ug/kg
Aroclor-1016	66	U	ug/kg
Aroclor-1221	130	U	ug/kg
Aroclor-1232	66	U	ug/kg
Aroclor-1242	66	U	ug/kg
Aroclor-1248	66	U	ug/kg
Aroclor-1254	66	U	ug/kg
Aroclor-1260	66	U	ug/kg
beta-BHC	3.4	U	ug/kg
Chlordane	34	U	ug/kg
Chlorobenzilate	57	J	ug/kg
delta-BHC	20	J	ug/kg
Dieldrin	6.6	U	ug/kg
Endosulfan I	0.23	J	ug/kg
Endosulfan II	6.6	U	ug/kg
Endosulfan sulfate	6.6	U	ug/kg
Endrin	1.7	J	ug/kg
Endrin aldehyde	10		ug/kg
gamma-BHC	3.4	U	ug/kg
Heptachlor	3.4	U	ug/kg
Heptachlor epoxide	3.4	U	ug/kg
Isodrin	6.6	U	ug/kg
Methoxychlor	34	U	ug/kg
Toxaphene	340	U	ug/kg

Sample Number: I1CH-19
Sample Date: 9/18/96
Laboratory ID: S685597-15
QC Type: CS
% Moisture: 0
Location: I1CH-19

	RESULT	QUAL	UNITS
4,4'-DDD	16	U	ug/kg
4,4'-DDE	16	U	ug/kg
4,4'-DDT	16	U	ug/kg
Aldrin	8.4	U	ug/kg
alpha-BHC	8.4	U	ug/kg
Aroclor-1016	160	U	ug/kg
Aroclor-1221	330	U	ug/kg
Aroclor-1232	160	U	ug/kg
Aroclor-1242	160	U	ug/kg
Aroclor-1248	160	U	ug/kg
Aroclor-1254	160	U	ug/kg
Aroclor-1260	160	U	ug/kg
beta-BHC	8.4	U	ug/kg
Chlordane	84	U	ug/kg
Chlorobenzilate	84	U	ug/kg
delta-BHC	8.4	U	ug/kg
Dieldrin	16	U	ug/kg
Endosulfan I	8.4	U	ug/kg
Endosulfan II	1.4	J	ug/kg
Endosulfan sulfate	16	U	ug/kg
Endrin	16	U	ug/kg
Endrin aldehyde	16	U	ug/kg
gamma-BHC	8.4	U	ug/kg
Heptachlor	8.4	U	ug/kg
Heptachlor epoxide	8.4	U	ug/kg
Isodrin	16	U	ug/kg
Methoxychlor	84	U	ug/kg
Toxaphene	840	U	ug/kg

Sample Number: I1CH-20
Sample Date: 9/18/96
Laboratory ID: S685597-16
QC Type: CS
% Moisture: 0
Location: I1CH-20

	RESULT	QUAL	UNIT
4,4'-DDD	16	U	ug/kg
4,4'-DDE	10	J	ug/kg
4,4'-DDT	7.9	J	ug/kg
Aldrin	0.94	J	ug/kg
alpha-BHC	8.5	U	ug/kg
Aroclor-1016	160	U	ug/kg
Aroclor-1221	340	U	ug/kg
Aroclor-1232	160	U	ug/kg
Aroclor-1242	160	U	ug/kg
Aroclor-1248	160	U	ug/kg
Aroclor-1254	160	U	ug/kg
Aroclor-1260	160	U	ug/kg
beta-BHC	8.5	U	ug/kg
Chlordane	85	U	ug/kg
Chlorobenzilate	140		ug/kg
delta-BHC	0.72	J	ug/kg
Dieldrin	16	U	ug/kg
Endosulfan I	8.5	U	ug/kg
Endosulfan II	16	U	ug/kg
Endosulfan sulfate	16	U	ug/kg
Endrin	16	U	ug/kg
Endrin aldehyde	2.6	J	ug/kg
gamma-BHC	8.5	U	ug/kg
Heptachlor	8.5	U	ug/kg
Heptachlor epoxide	8.5	U	ug/kg
Isodrin	16	U	ug/kg
Methoxychlor	85	U	ug/kg
Toxaphene	850	U	ug/kg

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Sample Number: I1CH-21
Sample Date: 9/18/96
Laboratory ID: S685597-17
QC Type: CS
% Moisture: 0
Location: I1CH-21

	RESULT	QUAL	UNITS
4,4'-DDD	25	U	ug/kg
4,4'-DDE	2.6	J	ug/kg
4,4'-DDT	1.4	J	ug/kg
Aldrin	2.6	J	ug/kg
alpha-BHC	13	U	ug/kg
Aroclor-1016	250	U	ug/kg
Aroclor-1221	510	U	ug/kg
Aroclor-1232	250	U	ug/kg
Aroclor-1242	250	U	ug/kg
Aroclor-1248	250	U	ug/kg
Aroclor-1254	250	U	ug/kg
Aroclor-1260	250	U	ug/kg
beta-BHC	13	U	ug/kg
Chlordane	130	U	ug/kg
Chlorobenzilate	34	J	ug/kg
delta-BHC	13	U	ug/kg
Dieldrin	25	U	ug/kg
Endosulfan I	13	U	ug/kg
Endosulfan II	25	U	ug/kg
Endosulfan sulfate	25	U	ug/kg
Endrin	25	U	ug/kg
Endrin aldehyde	25	U	ug/kg
gamma-BHC	13	U	ug/kg
Heptachlor	13	U	ug/kg
Heptachlor epoxide	13	U	ug/kg
Isodrin	25	U	ug/kg
Methoxychlor	130	U	ug/kg
Toxaphene	1300	U	ug/kg

Sample Number: I1CH-22
Sample Date: 9/18/96
Laboratory ID: S685597-18
QC Type: CS
% Moisture: 0
Location: I1CH-22

	RESULT	QUAL	UNITS
4,4'-DDD	2.4	J	ug/kg
4,4'-DDE	0.94	J	ug/kg
4,4'-DDT	0.64	J	ug/kg
Aldrin	2.9	U	ug/kg
alpha-BHC	2.9	U	ug/kg
Aroclor-1016	56	U	ug/kg
Aroclor-1221	110	U	ug/kg
Aroclor-1232	56	U	ug/kg
Aroclor-1242	56	U	ug/kg
Aroclor-1248	56	U	ug/kg
Aroclor-1254	56	U	ug/kg
Aroclor-1260	56	U	ug/kg
beta-BHC	2.9	U	ug/kg
Chlordane	29	U	ug/kg
Chlorobenzilate	17	J	ug/kg
delta-BHC	2.9	U	ug/kg
Dieldrin	5.6	U	ug/kg
Endosulfan I	2.9	U	ug/kg
Endosulfan II	5.6	U	ug/kg
Endosulfan sulfate	3.1	J	ug/kg
Endrin	1.2	J	ug/kg
Endrin aldehyde	7		ug/kg
gamma-BHC	2.9	U	ug/kg
Heptachlor	2.9	U	ug/kg
Heptachlor epoxide	2.9	U	ug/kg
Isodrin	5.6	U	ug/kg
Methoxychlor	29	U	ug/kg
Toxaphene	290	U	ug/kg

Sample Number: I1CH-23
Sample Date: 9/18/96
Laboratory ID: S685597-19
QC Type: CS
% Moisture: 0
Location: I1CH-23

	RESULT	QUAL	UNIT
4,4'-DDD	5	U	ug/k
4,4'-DDE	4.5	J	ug/k
4,4'-DDT	6.8	J	ug/k
Aldrin	0.68	J	ug/k
alpha-BHC	2.6	U	ug/k
Aroclor-1016	50	U	ug/k
Aroclor-1221	100	U	ug/k
Aroclor-1232	50	U	ug/k
Aroclor-1242	50	U	ug/k
Aroclor-1248	50	U	ug/k
Aroclor-1254	50	U	ug/k
Aroclor-1260	50	U	ug/kg
beta-BHC	2.6	U	ug/kg
Chlordane	26	U	ug/k
Chlorobenzilate	150		ug/kg
delta-BHC	2.6	U	ug/kg
Dieldrin	5	U	ug/kg
Endosulfan I	0.48	J	ug/kg
Endosulfan II	5	U	ug/kg
Endosulfan sulfate	5	U	ug/kg
Endrin	3	J	ug/kg
Endrin aldehyde	4	J	ug/kg
gamma-BHC	2.6	U	ug/kg
Heptachlor	2.6	U	ug/kg
Heptachlor epoxide	2.6	U	ug/kg
Isodrin	5	U	ug/kg
Methoxychlor	26	U	ug/kg
Toxaphene	260	U	ug/kg

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Sample Number: I1L-10
Sample Date: 9/18/96
Laboratory ID: S685597-20
QC Type: CS
% Moisture: 0
Location: I1L-10

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	0.79	J	ug/kg
Aldrin	0.08	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	0.17	J	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	0.14	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I1L-5
Sample Date: 9/18/96
Laboratory ID: S685597-9
QC Type: CS
% Moisture: 0
Location: I1L-5

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	2.3	J	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	4.6	J	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	0.59	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I1L-6
Sample Date: 9/18/96
Laboratory ID: S685597-10
QC Type: CS
% Moisture: 0
Location: I1L-6

	RESULT	QUAL	UNIT
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	0.12	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

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Sample Number: I1L-7
Sample Date: 9/18/96
Laboratory ID: S685597-11
QC Type: CS
% Moisture: 0
Location: I1L-7

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	28		ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	1.5	J	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I1L-8
Sample Date: 9/18/96
Laboratory ID: S685597-12
QC Type: CS
% Moisture: 0
Location: I1L-8

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	0.34	J	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	1	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I1L-9
Sample Date: 9/18/96
Laboratory ID: S685597-13
QC Type: CS
% Moisture: 0
Location: I1L-9

	RESULT	QUAL	UNI
4,4'-DDD	3.3	U	ug/l
4,4'-DDE	3.3	U	ug/k
4,4'-DDT	0.71	J	ug/k
Aldrin	1.7	U	ug/k
alpha-BHC	1.7	U	ug/k
Aroclor-1016	33	U	ug/k
Aroclor-1221	67	U	ug/k
Aroclor-1232	33	U	ug/k
Aroclor-1242	33	U	ug/k
Aroclor-1248	33	U	ug/k
Aroclor-1254	33	U	ug/k
Aroclor-1260	33	U	ug/k
beta-BHC	0.12	J	ug/k
Chlordane	17	U	ug/k
Chlorobenzilate	17	U	ug/k
delta-BHC	1.7	U	ug/k
Dieldrin	3.3	U	ug/k
Endosulfan I	1.7	U	ug/k
Endosulfan II	3.3	U	ug/k
Endosulfan sulfate	3.3	U	ug/k
Endrin	3.3	U	ug/k
Endrin aldehyde	0.19	J	ug/k
gamma-BHC	1.7	U	ug/k
Heptachlor	1.7	U	ug/k
Heptachlor epoxide	1.7	U	ug/k
Isodrin	3.3	U	ug/k
Methoxychlor	17	U	ug/k
Toxaphene	170	U	ug/k

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Sample Number: S5V-26
Sample Date: 9/17/96
Laboratory ID: S685597-4
QC Type: CS
% Moisture: 0
Location: S5V-26

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	0.19	J	ug/kg
gamma-BHC	0.99	J	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	0.9	J	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: S5V-27
Sample Date: 9/17/96
Laboratory ID: S685597-1
QC Type: CS
% Moisture: 0
Location: S5V-27

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	0.84	J	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	0.99	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.24	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: S5V-28
Sample Date: 9/17/96
Laboratory ID: S685597-3
QC Type: CS
% Moisture: 0
Location: S5V-28

	RESULT	QUAL	UNI
4,4'-DDD	3.3	U	ug/
4,4'-DDE	3.3	U	ug/
4,4'-DDT	3.3	U	ug/
Aldrin	1.7	U	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/k
Aroclor-1248	33	U	ug/k
Aroclor-1254	33	U	ug/k
Aroclor-1260	33	U	ug/k
beta-BHC	1.7	U	ug/k
Chlordane	17	U	ug/k
Chlorobenzilate	9.2	J	ug/k
delta-BHC	0.78	J	ug/k
Dieldrin	3.3	U	ug/k
Endosulfan I	1.7	U	ug/k
Endosulfan II	3.3	U	ug/k
Endosulfan sulfate	3.3	U	ug/k
Endrin	3.3	U	ug/k
Endrin aldehyde	0.23	J	ug/k
gamma-BHC	0.75	J	ug/k
Heptachlor	0.32	J	ug/k
Heptachlor epoxide	0.71	J	ug/k
Isodrin	3.3	U	ug/k
Methoxychlor	17	U	ug/k
Toxaphene	170	U	ug/k

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Sample Number: S5V-29
Sample Date: 9/17/96
Laboratory ID: S685597-6
QC Type: CS
% Moisture: 0
Location: S5V-29

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: S7V-1
Sample Date: 9/17/96
Laboratory ID: S685597-5
QC Type: CS
% Moisture: 0
Location: S7V-1

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	0.51	J	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	0.78	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.59	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: S7V-2
Sample Date: 9/17/96
Laboratory ID: S685597-7
QC Type: CS
% Moisture: 0
Location: S7V-2

	RESULT	QUAL	UNIT
4,4'-DDD	3.3	U	ug/k
4,4'-DDE	0.56	J	ug/k
4,4'-DDT	3.3	U	ug/k
Aldrin	0.3	J	ug/k
alpha-BHC	1.7	U	ug/k
Aroclor-1016	33	U	ug/k
Aroclor-1221	67	U	ug/k
Aroclor-1232	33	U	ug/k
Aroclor-1242	33	U	ug/k
Aroclor-1248	33	U	ug/k
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	0.37	J	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	1.7	J	ug/kg
gamma-BHC	0.97	J	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.6	J	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR014

PESTICIDES/PCBs

Sample Number: S7V-3
Sample Date: 9/17/96
Laboratory ID: S685597-2
QC Type: CS
% Moisture: 0
Location: S7V-3

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	32	J	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.06	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.3	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: S7V-4
Sample Date: 9/17/96
Laboratory ID: S685597-8
QC Type: CS
% Moisture: 0
Location: S7V-4

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	420		ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

INORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 17, 1997**
FROM:	**TERESA M. HUDSON**	**COPIES:**	**DV FILE**
SUBJECT:	**INORGANIC DATA REVIEW – TAL METALS CTO 007 – KEY WEST, FLORIDA SDG – BR015**		
SAMPLES:	12/TISSUE/		

I1L-11	I1L-14	I1CH-1	I1C-4
I1L-12	I1L-15	I1CH-2	I1C-27
I1L-13	I1L-16	I1CH-3	I1CH-17

Introduction

A data review was performed on the inorganic analytical data from CTO 007, NAS Key West, SDG No. BR015. Twelve (12) tissue samples were included for TAL metals. No field duplicates were included within this SDG.

All samples were analyzed for Target Analyte List (TAL) metals. The samples were collected by Brown & Root Environmental on September 17 and 18, 1996 and analyzed by Savannah Laboratories and Environmental Services, Inc. under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- Calibration Verifications
- * Laboratory Blank Analyses
- Matrix Spike Results

* Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/preparation/field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level (soil)
aluminum	29.7 ug/L	29.7 MG/KG
arsenic	7.0 ug/L	7.0 MG/KG
barium	1.9 ug/L	1.9 MG/KG
beryllium	0.3 ug/L	0.3 MG/KG
calcium	26.9 ug/L	26.9 MG/KG
chromium	1.3 ug/L	1.3 MG/KG
cobalt	0.7 ug/L	0.7 MG/KG
copper	1.0 ug/L	1.0 MG/KG
lead[1]	0.42 MG/KG	2.1 MG/KG
magnesium	21.8 ug/L	21.8 MG/KG
manganese	1.6 ug/L	1.6 MG/KG
mercury[1]	0.008 MG/KG	0.040 MG/KG
silver	1.6 ug/L	1.6 MG/KG
sodium	22.8 ug/L	22.8 MG/KG
thallium	5.1 ug/L	5.1 MG/KG
vanadium	1.8 ug/L	1.8 MG/KG
zinc	0.8 ug/L	0.8 MG/KG

Samples affected: All.

[1] Maximum concentration found in a soil preparation blank.

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for aluminum, barium, beryllium, chromium, lead, manganese, mercury, silver, and vanadium have been qualified as nondetected "U." No action was taken for the remaining analytes since the results were either positive and greater than the action level or nondetect.

Notes

It was noted that all samples met the contract holding time limit criteria of six (6) months.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method blank.

Other Factors Affecting Data Quality: None.

No other problems were encountered in this case.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review." February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Teresa M. Hudson

Brown & Root Environmental
Teresa M. Hudson
Environmental Scientist/Data Validator

Julia T. Bradley for

Brown & Root Environmental
Joseph A. Samchuck
Data Validator Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

KEY WEST
SDG – BR015

TABLE 1 - RECOMMENDATION SUMMARY

Aluminum	A[1]	Magnesium	
Antimony		Manganese	A[1]
Arsenic		Mercury	A[1]
Barium	A[1]	Nickel	
Beryllium	A[1]	Potassium	
Cadmium		Selenium	
Calcium		Silver	A[1]
Chromium	A[1]	Sodium	
Cobalt		Thallium	
Copper		Vanadium	A[1]
Iron		Zinc	
Lead	A[1]		

If the field is left blank, the qualifier is A – Accept all data.

A[1] – Accept data but qualify positive results < Action Level as nondetected, "U," as a result of laboratory blank contamination.

APPENDIX A
Qualified Analytical Results

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR015

INORGANICS

Sample Number: I1C-27
Sample Date: 9/18/96
Laboratory ID: S685597A-11
QC Type: CS
% Moisture: 0
Location: I1C-27

	RESULT	QUAL	UNITS
Aluminum	2.9	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	21.8		mg/kg
Barium	3.1		mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	54800		mg/kg
Chromium	0.34	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	34.4		mg/kg
Iron	62.8		mg/kg
Lead	0.39	U	mg/kg
Magnesium	6110		mg/kg
Manganese	2.9		mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.3		mg/kg
Potassium	3450		mg/kg
Selenium	2.2		mg/kg
Silver	0.28	U	mg/kg
Sodium	5890		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.78	U	mg/kg
Zinc	43.9		mg/kg

Sample Number: I1C-4
Sample Date: 9/17/96
Laboratory ID: S685597A-10
QC Type: CS
% Moisture: 0
Location: I1C-4

	RESULT	QUAL	UNITS
Aluminum	5.6	U	mg/kg
Antimony	1.1	U	mg/kg
Arsenic	12.6		mg/kg
Barium	2.7		mg/kg
Beryllium	0.01	U	mg/kg
Cadmium	0.08	U	mg/kg
Calcium	57500		mg/kg
Chromium	0.51	U	mg/kg
Cobalt	0.11	U	mg/kg
Copper	39.5		mg/kg
Iron	104		mg/kg
Lead	0.77	U	mg/kg
Magnesium	6030		mg/kg
Manganese	3.1		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.33		mg/kg
Potassium	2610		mg/kg
Selenium	2.2		mg/kg
Silver	0.16	U	mg/kg
Sodium	4520		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.79	U	mg/kg
Zinc	36.3		mg/kg

Sample Number: I1CH-1
Sample Date: 9/17/96
Laboratory ID: S685597A-7
QC Type: CS
% Moisture: 0
Location: I1CH-1

	RESULT	QUAL	UNIT
Aluminum	3.5	U	mg/
Antimony	1.1	U	mg/
Arsenic	110		mg/
Barium	0.09	U	mg/k
Beryllium	0.01	U	mg/k
Cadmium	0.08	U	mg/k
Calcium	10200		mg/k
Chromium	0.22	U	mg/k
Cobalt	0.11	U	mg/k
Copper	9.2		mg/k
Iron	33.1		mg/k
Lead	0.4	U	mg/k
Magnesium	2080		mg/k
Manganese	2.1		mg/k
Mercury	0.01	U	mg/k
Nickel	10.5		mg/k
Potassium	2830		mg/k
Selenium	1	U	mg/k
Silver	0.16	U	mg/k
Sodium	3550		mg/k
Thallium	0.92	U	mg/k
Vanadium	0.19	U	mg/k
Zinc	19.7		mg/k

ORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**FEBRUARY 4, 1997**
FROM:	**TERESA M. HUDSON**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA REVIEW – PEST/PCB ORGANICS**
CTO 007 – NAS KEY WEST, KEY WEST, FLORIDA
SDG – BR015

SAMPLES: 12/TISSUE/

I1L-11	I1L-14	I1CH-1	I1C-4
I1L-12	I1L-15	I1CH-2	I1C-27
I1L-13	I1L-16	I1CH-3	I1CH-17

The sample set for the CTO 007 NAS Key West site, SDG BR015, consists of twelve (12) tissue samples. All samples were analyzed for Target Compound List (TCL) pesticide/PCB organic compounds.

The samples were collected by Brown & Root Environmental on September 17 and 18, 1996 and analyzed by Savannah Laboratories & Environmental Services, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Method 8080 analytical and reporting protocols. The data was evaluated according to the following parameters:

- Holding times
- Initial and continuing calibrations
- * Laboratory and field blank analyses
- Surrogate spike recoveries
- * Compound Quantitation

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Pesticide/PCBs

The following pesticide compound was detected in the laboratory method blank at the maximum concentration indicated below:

Compound	Maximum Concentration	Action Level
Endosulfan sulfate	0.6 ug/Kg	3.0 ug/Kg
4,4'-DDD	0.1 ug/Kg	0.5 ug/Kg

Samples Affected: All except I1L-16.

Percent moisture, sample aliquot size, and dilution factors were considered prior to the application of the action level. Positive results in the affected samples for these compounds reported at concentrations below the detection limit were replaced with revised detection limits. Positive results below the detection limit and above the action level were qualified estimated, "J." Positive results below the action level were qualified nondetect, "U."

The laboratory qualifier "P" was removed from all target compound data with a %D above 25% and less than 100% between positive results on columns 1 and 2. The affected target compounds and samples are listed in the table below.

SAMPLE	AFFECTED COMPOUNDS
I1L-11	Aldrin, Methoxychlor
I1L-12	Beta-BHC, Endrin aldehyde
I1L-15	4,4'-DDT
I1L-16	Dieldrin
I1CH-1	4,4'-DDE, 4,4'-DDD
I1CH-2	4,4'-DDD
I1CH-3	Heptachlor
I1C-4	4,4'-DDE, 4,4'-DDD, Aroclor-1260
I1C-27	4,4'-DDE
I1CH-17	4,4'-DDD, Aroclor-1260

The laboratory qualifier "P" was removed from the target compound data for those compounds with a %D between columns 1 and 2 greater than 100%. Positive hits were estimated "J." The affected samples and target compounds are listed in the table below.

SAMPLE	AFFECTED COMPOUNDS
I1L-11	Heptachlor, Endrin aldehyde
I1L-13	Endrin aldehyde
I1CH-1	Aldrin
I1CH-2	Aldrin, 4,4'-DDE, Endrin, Endrin aldehyde, Isodrin
I1CH-3	Endosulfan I, Dieldrin
I1CH-17	Dieldrin

Due to coelution matrix interference on one of the GC columns, confirmation of Delta-BHC in sample I1CH-3 was not feasible. Thus, the Delta-BHC concentration reported for this sample is based on a single column. The laboratory qualifier "X" was removed and the estimated "J" was left to indicate estimated concentrations.

High %Ds between positive results in columns 1 and 2 were reported for Endosulfan sulfate and 4,4'-DDD in some samples, however no action was taken to qualify since this data was previously qualified for laboratory control method contamination.

No other problems were noted.

Executive Summary

Laboratory Performance: Endosulfan sulfate and 4,4'-DDD were detected in a laboratory method blank. Some pesticide/PCB compounds reported %Ds above the quality control limit of 25%, but not over 100%. Some pesticide/PCB compounds reported %Ds above 100%. Due to coeluting matrix interference on one of the GC columns, confirmation of multiple compounds was not feasible for some samples. Thus, the concentrations reported for these samples are based on a single column.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program" (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Brown & Root Environmental
Teresa M. Hudson
Environmental Scientist/Data Validator

for
Brown & Root Environmental
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

NAS KEY WEST
SDG – BR015

TABLE 1 - RECOMMENDATION SUMMARY

Sample Number	PEST/PCB
I1L-11	$A^{1,2}$ $J^{1,2,3,4,21}$
I1L-12	$A^{1,2}$ $J^{5,6,21}$
I1L-13	$A^{1,2}$ $J^{4,21}$
I1L-14	$A^{2,21}$
I1L-15	$A^{1,2}$ $J^{7,21}$
I1L-16	$J^{8,21}$
I1CH-1	A^{2} $J^{9,10,11,21}$
I1CH-2	A^{2} $J^{4,9,11,12,13,14,21}$
I1CH-3	A^{1} $J^{15,16,17,18,21}$
I1C-4	$J^{10,11,19,21}$
I1C-27	A^{1} $J^{10,20,21}$
I1CH-17	$J^{11,18,19,21}$

If the field is left blank, the qualifier is A - Accept all data.

A^1 Accept data, but change positive results for 4,4'-DDD to a revised detection limit and qualify as non-detected, (U) for blank contamination.

A^2 Accept data, but change positive results for endosulfan sulfate to a revised detection limit and qualify as non-detected, (U) for blank contamination.

J^1 Removed the laboratory qualifier (P) for heptachlor and qualified as estimated (J), as result of %D above 100%.

J^2 Removed laboratory qualifier (P) for aldrin, used to indicate a high %D. No further action was taken.

J^3 Removed laboratory qualifier (P) for methoxychlor, used to indicate a high %D. No further action was taken.

J^4 Removed the laboratory qualifier (P) for endrin aldehyde and qualified as estimated (J), as result of %D above 100%.

J^5 Removed laboratory qualifier (P) for beta-BHC, used to indicate a high %D. No further action was taken.

J^6 Removed laboratory qualifier (P) for endrin aldehyde , used to indicate a high %D. No further action was taken.

J^7 Removed laboratory qualifier (P) for 4,4'-DDT , used to indicate a high %D. No further action was taken.

J^8 Removed laboratory qualifier (P) for dieldrin , used to indicate a high %D. No further action was taken.

J^9 Removed the laboratory qualifier (P) for aldrin and qualified as estimated (J), as result of %D above 100%.

J^{10} Removed laboratory qualifier (P) for 4,4'-DDE , used to indicate a high %D. No further action was taken.

J^{11} Accept result for 4,4'-DDD, but qualify positive result as estimated (J) because it is below MDL.

J^{12} Removed the laboratory qualifier (P) for 4,4'-DDE and qualified as estimated (J), as result of %D above 100%.

J[13] Removed the laboratory qualifier (P) for endrin and qualified as estimated (J), as result of %D above 100%.

J[14] Removed the laboratory qualifier (P) for isodrin and qualified as estimated (J), as result of %D above 100%.

J[15] Removed the laboratory qualifier (X) which indicates that the results for delta-BHC are based on one column. Qualified as estimate (J).

J[16] Removed the laboratory qualifier (P) for heptachlor, used to indicate a high %D. No further action was taken.

J[17] Removed the laboratory qualifier (P) for endosulfan I and qualified as estimated (J), as result of %D above 100%.

J[18] Removed the laboratory qualifier (P) for dieldrin and qualified as estimated (J), as result of %D above 100%.

J[19] Removed the laboratory qualifier (P) for aroclor-1260, used to indicate a high %D. No further action was taken.

J[20] Estimate positive and nondetect (J) and (UJ) as a result of zero percent recovery for tetrachloro-m-xylene in column 2.

J[21] Positive results reported below CRQL were estimated (J).

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR015

PESTICIDES/PCBs

Sample Number: I1C-27
Sample Date: 9/18/96
Laboratory ID: S685597A-11
QC Type: CS
% Moisture: 0
Location: I1C-27

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	UJ	ug/kg
4,4'-DDE	0.99	J	ug/kg
4,4'-DDT	3.3	UJ	ug/kg
Aldrin	1.7	UJ	ug/kg
alpha-BHC	1.7	UJ	ug/kg
Aroclor-1016	33	UJ	ug/kg
Aroclor-1221	67	UJ	ug/kg
Aroclor-1232	33	UJ	ug/kg
Aroclor-1242	33	UJ	ug/kg
Aroclor-1248	33	UJ	ug/kg
Aroclor-1254	33	UJ	ug/kg
Aroclor-1260	33	UJ	ug/kg
beta-BHC	1.7	UJ	ug/kg
Chlordane	17	UJ	ug/kg
Chlorobenzilate	17	UJ	ug/kg
delta-BHC	1.7	UJ	ug/kg
Dieldrin	3.3	UJ	ug/kg
Endosulfan I	1.7	UJ	ug/kg
Endosulfan II	3.3	UJ	ug/kg
Endosulfan sulfate	3.3	UJ	ug/kg
Endrin	3.3	UJ	ug/kg
Endrin aldehyde	3.3	UJ	ug/kg
gamma-BHC	1.7	UJ	ug/kg
Heptachlor	1.7	UJ	ug/kg
Heptachlor epoxide	1.7	UJ	ug/kg
Isodrin	3.3	UJ	ug/kg
Methoxychlor	17	UJ	ug/kg
Toxaphene	170	UJ	ug/kg

Sample Number: I1C-4
Sample Date: 9/17/96
Laboratory ID: S685597A-10
QC Type: CS
% Moisture: 0
Location: I1C-4

	RESULT	QUAL	UNITS
4,4'-DDD	1.7	J	ug/kg
4,4'-DDE	17		ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	260		ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.2	J	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I1CH-1
Sample Date: 9/17/96
Laboratory ID: S685597A-7
QC Type: CS
% Moisture: 0
Location: I1CH-1

	RESULT	QUAL	UNI
4,4'-DDD	1	J	ug/
4,4'-DDE	0.49	J	ug/
4,4'-DDT	3.3	U	ug/
Aldrin	0.19	J	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	28	J	ug/
beta-BHC	1.7	U	ug/
Chlordane	17	U	ug/
Chlorobenzilate	17	U	ug/
delta-BHC	1.7	U	ug/
Dieldrin	3.3	U	ug/
Endosulfan I	1.7	U	ug/
Endosulfan II	3.3	U	ug/
Endosulfan sulfate	3.3	U	ug/
Endrin	3.3	U	ug/
Endrin aldehyde	3.3	U	ug/
gamma-BHC	1.7	U	ug/
Heptachlor	1.7	U	ug/
Heptachlor epoxide	1.7	U	ug/
Isodrin	3.3	U	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/kg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

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PESTICIDES/PCBs

Sample Number: I1CH-17
Sample Date: 9/18/96
Laboratory ID: S685597A-12
QC Type: CS
% Moisture: 0
Location: I1CH-17

	RESULT	QUAL	UNITS
4,4'-DDD	0.69	J	ug/kg
4,4'-DDE	2.2	J	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33		ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	0.11	J	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	0.57	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I1CH-2
Sample Date: 9/17/96
Laboratory ID: S685597A-8
QC Type: CS
% Moisture: 0
Location: I1CH-2

	RESULT	QUAL	UNITS
4,4'-DDD	1.3	J	ug/kg
4,4'-DDE	2.5	J	ug/kg
4,4'-DDT	3.4	U	ug/kg
Aldrin	0.86	J	ug/kg
alpha-BHC	1.8	U	ug/kg
Aroclor-1016	34	U	ug/kg
Aroclor-1221	70	U	ug/kg
Aroclor-1232	34	U	ug/kg
Aroclor-1242	34	U	ug/kg
Aroclor-1248	34	U	ug/kg
Aroclor-1254	34	U	ug/kg
Aroclor-1260	53		ug/kg
beta-BHC	1.8	U	ug/kg
Chlordane	18	U	ug/kg
Chlorobenzilate	34		ug/kg
delta-BHC	1.8	U	ug/kg
Dieldrin	3.4	U	ug/kg
Endosulfan I	1.8	U	ug/kg
Endosulfan II	1.2	J	ug/kg
Endosulfan sulfate	3.4	U	ug/kg
Endrin	1.2	J	ug/kg
Endrin aldehyde	2.1	J	ug/kg
gamma-BHC	0.35	J	ug/kg
Heptachlor	0.96	J	ug/kg
Heptachlor epoxide	1.8	U	ug/kg
Isodrin	0.35	J	ug/kg
Methoxychlor	18	U	ug/kg
Toxaphene	180	U	ug/kg

Sample Number: I1CH-3
Sample Date: 9/17/96
Laboratory ID: S685597A-9
QC Type: CS
% Moisture: 0
Location: I1CH-3

	RESULT	QUAL	UN
4,4'-DDD	3.3	U	ug
4,4'-DDE	4.8		ug
4,4'-DDT	3.3	U	ug
Aldrin	1.7	U	ug
alpha-BHC	1.7	U	ug
Aroclor-1016	33	U	ug
Aroclor-1221	67	U	ug
Aroclor-1232	33	U	ug
Aroclor-1242	33	U	ug
Aroclor-1248	33	U	ug
Aroclor-1254	33	U	ug
Aroclor-1260	33		ug
beta-BHC	1.7	U	ug
Chlordane	17	U	ug
Chlorobenzilate	17	U	ug
delta-BHC	0.27	J	ug
Dieldrin	0.1	J	ug
Endosulfan I	0.24	J	ug
Endosulfan II	3.3	U	ug
Endosulfan sulfate	3.3	U	ug
Endrin	3.3	U	ug
Endrin aldehyde	3.3	U	ug
gamma-BHC	1.7	U	ug
Heptachlor	0.11	J	ug
Heptachlor epoxide	1.7	U	ug
Isodrin	3.3	U	ug
Methoxychlor	17	U	ug
Toxaphene	170	U	ug

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Sample Number: I1L-11
Sample Date: 9/18/96
Laboratory ID: S685597A-1
QC Type: CS
% Moisture: 0
Location: I1L-11

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	0.057	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	0.2	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.13	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	0.74	J	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I1L-12
Sample Date: 9/18/96
Laboratory ID: S685597A-2
QC Type: CS
% Moisture: 0
Location: I1L-12

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	0.11	J	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	0.27	J	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.088	J	ug/kg
Endrin aldehyde	0.3	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I1L-13
Sample Date: 9/18/96
Laboratory ID: S685597A-3
QC Type: CS
% Moisture: 0
Location: I1L-13

	RESULT	QUAL	UN
4,4'-DDD	3.3	U	ug
4,4'-DDE	3.3	U	ug
4,4'-DDT	3.3	U	ug
Aldrin	1.7	U	ug
alpha-BHC	1.7	U	ug
Aroclor-1016	33	U	ug
Aroclor-1221	67	U	ug
Aroclor-1232	33	U	ug
Aroclor-1242	33	U	ug
Aroclor-1248	33	U	ug
Aroclor-1254	33	U	ug
Aroclor-1260	33	U	ug
beta-BHC	1.7	U	ug
Chlordane	17	U	ug
Chlorobenzilate	17	U	ug
delta-BHC	1.7	U	ug
Dieldrin	3.3	U	ug
Endosulfan I	1.7	U	ug
Endosulfan II	3.3	U	ug
Endosulfan sulfate	3.3	U	ug
Endrin	3.3	U	ug
Endrin aldehyde	0.2	J	ug
gamma-BHC	1.7	U	ug
Heptachlor	1.7	U	ug
Heptachlor epoxide	1.7	U	ug
Isodrin	3.3	U	ug
Methoxychlor	17	U	ug
Toxaphene	170	U	ug

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SAVANNAH LABORATORIES

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PESTICIDES/PCBs

Sample Number: I1L-14
Sample Date: 9/18/96
Laboratory ID: S685597A-4
QC Type: CS
% Moisture: 0
Location: I1L-14

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	0.12	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I1L-15
Sample Date: 9/18/96
Laboratory ID: S685597A-5
QC Type: CS
% Moisture: 0
Location: I1L-15

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	0.29	J	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I1L-16
Sample Date: 9/18/96
Laboratory ID: S685597A-6
QC Type: CS
% Moisture: 0
Location: I1L-16

	RESULT	QUAL	UNI
4,4'-DDD	3.3	U	ug/
4,4'-DDE	3.3	U	ug/
4,4'-DDT	3.3	U	ug/
Aldrin	1.7	U	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	7	J	ug/
beta-BHC	1.7	U	ug/
Chlordane	17	U	ug/
Chlorobenzilate	17	U	ug/
delta-BHC	1.7	U	ug/
Dieldrin	0.18	J	ug/
Endosulfan I	0.12	J	ug/
Endosulfan II	3.3	U	ug/
Endosulfan sulfate	3.3	U	ug/
Endrin	3.3	U	ug/
Endrin aldehyde	3.3	U	ug/
gamma-BHC	1.7	U	ug/
Heptachlor	1.7	U	ug/
Heptachlor epoxide	1.7	U	ug/
Isodrin	3.3	U	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/

INORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 9, 1997**
FROM:	**TERESA M. HUDSON**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA REVIEW – TAL METALS**
CTO 007 – KEY WEST, FLORIDA
SDG – BR016

SAMPLES: 20/TISSUE/

590201	590206	590211	590216
590202	590207	590212	590217
590203	590208	590213	590218
590204	590209	590214	590219
590205	590210	590215	590220

Introduction

A data review was performed on the inorganic analytical data from CTO 007, NAS Key West, SDG No. BR016. Twenty (20) tissue samples were included for TAL metals. No field duplicates were included within this SDG.

All samples were analyzed for Target Analyte List (TAL) metals. The samples were collected by Brown & Root Environmental on September 26, 27, 29, 30, and October 2 1996 and analyzed by Savannah Laboratories and Environmental Services, Inc. under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- Calibration Verifications
- * Laboratory Blank Analyses
- Matrix Spike Results

* Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/preparation/field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level (soil)
aluminum	20.5 ug/L	20.5 MG/KG
barium	3.0 ug/L	3.0 MG/KG
beryllium	0.7 ug/L	0.7 MG/KG
calcium[1]	7.461 MG/KG	37.3 MG/KG
cobalt	4.0 ug/L	4.0 MG/KG
copper	5.5 ug/L	5.5 MG/KG
iron	56.0 ug/L	56.0 MG/KG
magnesium	32.1 ug/L	32.1 MG/KG
manganese	3.1 ug/L	3.1 MG/KG
sodium	31.4 ug/L	31.4 MG/KG
vanadium	2.7 ug/L	2.7 MG/KG
zinc	5.5 ug/L	5.5 MG/KG

Samples affected: All.

[1] Maximum concentration found in a soil preparation blank.

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for aluminum, barium, cobalt, copper, iron, manganese, vanadium, and zinc have been qualified as nondetected "U." No action was taken for the remaining analytes since the results were either greater than the action level or nondetected.

Notes

It was noted that all samples met the contract holding time limit criteria of six (6) months.

It was noted that calibration verifications for ICP CRDL standards were below the quality control limits for selenium. However, no validation actions were taken.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method blank.

Other Factors Affecting Data Quality: None.

No other problems were encountered in this case.

The data for these analyses were reviewed in accordance with the "National Functional Guidelines for Inorganic Review," February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Teresa M. Hudson

Brown & Root Environmental
Teresa M. Hudson
Environmental Scientist/Data Validator

Julia F. Bradley for

Brown & Root Environmental
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

KEY WEST
SDG BR016

TABLE 1 - RECOMMENDATION SUMMARY

Aluminum	A[1]	Magnesium	
Antimony		Manganese	A[1]
Arsenic		Mercury	
Barium	A[1]	Nickel	
Beryllium		Potassium	
Cadmium		Selenium	
Calcium		Silver	
Chromium		Sodium	
Cobalt	A[1]	Thallium	
Copper	A[1]	Vanadium	A[1]
Iron	A[1]	Zinc	A[1]
Lead			

If the field is left blank, the qualifier is A – Accept all data.

A[1] – Accept data but qualify positive results < Action Level as nondetected, "U," as a result of laboratory blank contamination.

APPENDIX A
Qualified Analytical Results

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR016

INORGANICS

Sample Number: B6V-1
Sample Date: 10/2/96
Laboratory ID: S685902-9
QC Type: CS
% Moisture: 0
Location: B6V-1

	RESULT	QUAL	UNITS
Aluminum	1.6	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	0.94	U	mg/kg
Barium	0.04	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	1690		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	1.6	U	mg/kg
Iron	5.6	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	1260		mg/kg
Manganese	1.6	U	mg/kg
Mercury	0.01		mg/kg
Nickel	0.72	U	mg/kg
Potassium	3780		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	11300		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.42	U	mg/kg
Zinc	3.9	U	mg/kg

Sample Number: B6V-2
Sample Date: 10/2/96
Laboratory ID: S685902-10
QC Type: CS
% Moisture: 0
Location: B6V-2

	RESULT	QUAL	UNITS
Aluminum	9.2	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	0.94	U	mg/kg
Barium	0.91	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	1380		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	1.1	U	mg/kg
Iron	40.1	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	1340		mg/kg
Manganese	4		mg/kg
Mercury	0.01		mg/kg
Nickel	1.1		mg/kg
Potassium	3130		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	2730		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.42	U	mg/kg
Zinc	12.8		mg/kg

Sample Number: B6V-3
Sample Date: 10/2/96
Laboratory ID: S685902-11
QC Type: CS
% Moisture: 0
Location: B6V-3

	RESULT	QUAL	UNIT
Aluminum	1.6	U	mg/
Antimony	1.9	U	mg/
Arsenic	0.94	U	mg/
Barium	0.06	U	mg/k
Beryllium	0.03	U	mg/k
Cadmium	0.61	U	mg/k
Calcium	3260		mg/k
Chromium	0.72	U	mg/k
Cobalt	0.24	U	mg/k
Copper	1.7	U	mg/k
Iron	5.3	U	mg/k
Lead	0.32	U	mg/k
Magnesium	2380		mg/k
Manganese	6.7		mg/k
Mercury	0.02		mg/k
Nickel	0.72	U	mg/k
Potassium	2090		mg/k
Selenium	1	U	mg/k
Silver	0.3	U	mg/k
Sodium	7790		mg/k
Thallium	0.92	U	mg/k
Vanadium	0.42	U	mg/kg
Zinc	2	U	mg/kg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR016

INORGANICS

Sample Number: B7V-35
Sample Date: 9/27/96
Laboratory ID: S685902-18
QC Type: CS
% Moisture: 0
Location: B7V-35

	RESULT	QUAL	UNITS
Aluminum	3	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	0.94	U	mg/kg
Barium	0.16	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	1990		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	1.4	U	mg/kg
Iron	3.4	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	1120		mg/kg
Manganese	1.2	U	mg/kg
Mercury	0.01		mg/kg
Nickel	0.72	U	mg/kg
Potassium	3240		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	6730		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.42	U	mg/kg
Zinc	4.9	U	mg/kg

Sample Number: B7V-36
Sample Date: 9/27/96
Laboratory ID: S685902-19
QC Type: CS
% Moisture: 0
Location: B7V-36

	RESULT	QUAL	UNITS
Aluminum	1.7	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	0.94	U	mg/kg
Barium	3.5		mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	1920		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	2.3	U	mg/kg
Iron	34.7	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	1370		mg/kg
Manganese	3.6		mg/kg
Mercury	0.02		mg/kg
Nickel	0.72	U	mg/kg
Potassium	4610		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	3210		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.42	U	mg/kg
Zinc	55.5		mg/kg

Sample Number: B7V-37
Sample Date: 9/27/96
Laboratory ID: S685902-20
QC Type: CS
% Moisture: 0
Location: B7V-37

	RESULT	QUAL	UNIT
Aluminum	1.8	U	mg/k
Antimony	1.9	U	mg/k
Arsenic	0.94	U	mg/k
Barium	0.07	U	mg/k
Beryllium	0.03	U	mg/k
Cadmium	0.61	U	mg/k
Calcium	3690		mg/k
Chromium	0.72	U	mg/k
Cobalt	0.24	U	mg/k
Copper	1.5	U	mg/k
Iron	11.2	U	mg/k
Lead	0.32	U	mg/k
Magnesium	1840		mg/kg
Manganese	6.1		mg/kg
Mercury	0.01		mg/kg
Nickel	0.72	U	mg/kg
Potassium	3270		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	7160		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.42	U	mg/kg
Zinc	1.6	U	mg/kg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

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INORGANICS

Sample Number: I1V-30
Sample Date: 9/29/96
Laboratory ID: S685902-14
QC Type: CS
% Moisture: 0
Location: I1V-30

	RESULT	QUAL	UNITS
Aluminum	5.4	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	0.94	U	mg/kg
Barium	0.57	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	20700		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	1.2	U	mg/kg
Iron	47.6	U	mg/kg
Lead	1.2		mg/kg
Magnesium	3730		mg/kg
Manganese	8		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.72	U	mg/kg
Potassium	2890		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	11700		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.81	U	mg/kg
Zinc	26.2		mg/kg

Sample Number: I1V-31
Sample Date: 9/29/96
Laboratory ID: S685902-15
QC Type: CS
% Moisture: 0
Location: I1V-31

	RESULT	QUAL	UNITS
Aluminum	4.3	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	0.94	U	mg/kg
Barium	0.39	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	7330		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.3	U	mg/kg
Copper	1.8	U	mg/kg
Iron	54.7	U	mg/kg
Lead	0.72		mg/kg
Magnesium	2370		mg/kg
Manganese	6.5		mg/kg
Mercury	0.02		mg/kg
Nickel	0.79		mg/kg
Potassium	3170		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	11300		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.76	U	mg/kg
Zinc	24.8		mg/kg

Sample Number: I1V-32
Sample Date: 10/2/96
Laboratory ID: S685902-16
QC Type: CS
% Moisture: 0
Location: I1V-32

	RESULT	QUAL	UNI
Aluminum	3.1	U	mg/
Antimony	1.9	U	mg/
Arsenic	0.94	U	mg/
Barium	0.42	U	mg/
Beryllium	0.03	U	mg/
Cadmium	0.61	U	mg/
Calcium	13900		mg/
Chromium	0.72	U	mg/
Cobalt	0.24	U	mg/
Copper	1.9	U	mg/
Iron	37.6	U	mg/
Lead	1		mg/
Magnesium	3070		mg/
Manganese	10.9		mg/
Mercury	0.01		mg/
Nickel	0.9		mg/
Potassium	3560		mg/
Selenium	1	U	mg/
Silver	0.3	U	mg/
Sodium	12000		mg/
Thallium	0.92	U	mg/
Vanadium	0.42	U	mg/
Zinc	25.4		mg/

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SAVANNAH LABORATORIES

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INORGANICS

Sample Number: I1V-33
Sample Date: 10/2/96
Laboratory ID: S685902-17
QC Type: CS
% Moisture: 0
Location: I1V-33

	RESULT	QUAL	UNITS
Aluminum	2.1	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	0.94	U	mg/kg
Barium	0.19	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	6410		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.27	U	mg/kg
Copper	1.3	U	mg/kg
Iron	20.2	U	mg/kg
Lead	0.61		mg/kg
Magnesium	2300		mg/kg
Manganese	8.3		mg/kg
Mercury	0.01		mg/kg
Nickel	0.72	U	mg/kg
Potassium	3070		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	11100		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.42	U	mg/kg
Zinc	18.7		mg/kg

Sample Number: I7C-11
Sample Date: 9/26/96
Laboratory ID: S685902-13
QC Type: CS
% Moisture: 0
Location: I7C-11

	RESULT	QUAL	UNITS
Aluminum	1.9	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	4.5		mg/kg
Barium	2.5	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	59300		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	7.7		mg/kg
Iron	53.8	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	9010		mg/kg
Manganese	2.2	U	mg/kg
Mercury	0.02		mg/kg
Nickel	0.72	U	mg/kg
Potassium	1590		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	8170		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.88	U	mg/kg
Zinc	7.1		mg/kg

Sample Number: I7L-10
Sample Date: 9/26/96
Laboratory ID: S685902-12
QC Type: CS
% Moisture: 0
Location: I7L-10

	RESULT	QUAL	UNI
Aluminum	1.6	U	mg/
Antimony	1.9	U	mg/
Arsenic	20.7		mg/
Barium	0.9	U	mg/l
Beryllium	0.03	U	mg/l
Cadmium	0.61	U	mg/l
Calcium	30900		mg/l
Chromium	0.72	U	mg/l
Cobalt	0.24	U	mg/k
Copper	21.9		mg/k
Iron	14.7	U	mg/k
Lead	0.32	U	mg/k
Magnesium	3720		mg/k
Manganese	0.78	U	mg/k
Mercury	0.14		mg/k
Nickel	0.72	U	mg/k
Potassium	2480		mg/k
Selenium	1	U	mg/k
Silver	0.3	U	mg/k
Sodium	6850		mg/k
Thallium	0.92	U	mg/k
Vanadium	0.42	U	mg/k
Zinc	16.6		mg/k

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SAVANNAH LABORATORIES

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INORGANICS

Sample Number: I7V-18
Sample Date: 9/30/96
Laboratory ID: S685902-1
QC Type: CS
% Moisture: 0
Location: I7V-18

	RESULT	QUAL	UNITS
Aluminum	8	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	0.94	U	mg/kg
Barium	0.84	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	4390		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	0.66	U	mg/kg
Iron	21.1	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	1800		mg/kg
Manganese	4.7		mg/kg
Mercury	0.01	U	mg/kg
Nickel	0.72	U	mg/kg
Potassium	3780		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	12500		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.42	U	mg/kg
Zinc	4.4	U	mg/kg

Sample Number: I7V-19
Sample Date: 9/30/96
Laboratory ID: S685902-2
QC Type: CS
% Moisture: 0
Location: I7V-19

	RESULT	QUAL	UNITS
Aluminum	2	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	0.94	U	mg/kg
Barium	0.2	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	2460		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	0.3	U	mg/kg
Iron	19.5	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	1560		mg/kg
Manganese	7.1		mg/kg
Mercury	0.01		mg/kg
Nickel	0.72	U	mg/kg
Potassium	4800		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	12000		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.42	U	mg/kg
Zinc	7.6		mg/kg

Sample Number: I7V-20
Sample Date: 9/30/96
Laboratory ID: S685902-3
QC Type: CS
% Moisture: 0
Location: I7V-20

	RESULT	QUAL	UNI
Aluminum	7.6	U	mg/
Antimony	1.9	U	mg/
Arsenic	0.94	U	mg/
Barium	0.73	U	mg/
Beryllium	0.03	U	mg/
Cadmium	0.61	U	mg/
Calcium	24700		mg/
Chromium	0.72	U	mg/
Cobalt	0.24	U	mg/
Copper	0.47	U	mg/
Iron	37.5	U	mg/
Lead	0.48		mg/
Magnesium	3980		mg/
Manganese	9.4		mg/
Mercury	0.01		mg/
Nickel	0.72	U	mg/
Potassium	3530		mg/
Selenium	1	U	mg/
Silver	0.3	U	mg/
Sodium	11000		mg/
Thallium	0.92	U	mg/
Vanadium	0.55	U	mg/
Zinc	6.8		mg/

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INORGANICS

Sample Number: I7V-21
Sample Date: 9/30/96
Laboratory ID: S685902-4
QC Type: CS
% Moisture: 0
Location: I7V-21

	RESULT	QUAL	UNITS
Aluminum	4.8	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	0.94	U	mg/kg
Barium	0.6	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	22100		mg/kg
Chromium	1.6		mg/kg
Cobalt	0.24	U	mg/kg
Copper	0.81	U	mg/kg
Iron	47.5	U	mg/kg
Lead	0.72		mg/kg
Magnesium	3360		mg/kg
Manganese	6.3		mg/kg
Mercury	0.01		mg/kg
Nickel	0.72	U	mg/kg
Potassium	3030		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	8790		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.75	U	mg/kg
Zinc	6.3		mg/kg

Sample Number: I8V-30
Sample Date: 9/26/96
Laboratory ID: S685902-5
QC Type: CS
% Moisture: 0
Location: I8V-30

	RESULT	QUAL	UNITS
Aluminum	19.7	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	0.94	U	mg/kg
Barium	1	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	17400		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	0.72	U	mg/kg
Iron	97.2		mg/kg
Lead	1.6		mg/kg
Magnesium	2690		mg/kg
Manganese	8.2		mg/kg
Mercury	0.01		mg/kg
Nickel	0.72	U	mg/kg
Potassium	3930		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	11200		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.78	U	mg/kg
Zinc	10.8		mg/kg

Sample Number: I8V-31
Sample Date: 9/26/96
Laboratory ID: S685902-6
QC Type: CS
% Moisture: 0
Location: I8V-31

	RESULT	QUAL	UNI
Aluminum	31.9		mg/l
Antimony	1.9	U	mg/l
Arsenic	0.94	U	mg/l
Barium	1.3	U	mg/l
Beryllium	0.03	U	mg/l
Cadmium	0.61	U	mg/l
Calcium	25400		mg/l
Chromium	0.72	U	mg/k
Cobalt	0.24	U	mg/k
Copper	1.1	U	mg/k
Iron	176		mg/k
Lead	2.5		mg/k
Magnesium	2700		mg/k
Manganese	11.3		mg/k
Mercury	0.01		mg/k
Nickel	0.72	U	mg/k
Potassium	3100		mg/k
Selenium	1	U	mg/k
Silver	0.3	U	mg/k
Sodium	8380		mg/k
Thallium	0.92	U	mg/k
Vanadium	1	U	mg/k
Zinc	15		mg/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

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INORGANICS

Sample Number: I8V-32
Sample Date: 9/26/96
Laboratory ID: S685902-7
QC Type: CS
% Moisture: 0
Location: I8V-32

	RESULT	QUAL	UNITS
Aluminum	12	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	1.8		mg/kg
Barium	1.2	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	6900		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	0.63	U	mg/kg
Iron	55	U	mg/kg
Lead	1.2		mg/kg
Magnesium	1650		mg/kg
Manganese	10.1		mg/kg
Mercury	0.01		mg/kg
Nickel	0.72	U	mg/kg
Potassium	3380		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	9710		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	1.4	U	mg/kg
Zinc	9		mg/kg

Sample Number: I8V-33
Sample Date: 9/26/96
Laboratory ID: S685902-8
QC Type: CS
% Moisture: 0
Location: I8V-33

	RESULT	QUAL	UNITS
Aluminum	10.5	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	2.1		mg/kg
Barium	0.82	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	8050		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	0.41	U	mg/kg
Iron	47	U	mg/kg
Lead	1.1		mg/kg
Magnesium	1910		mg/kg
Manganese	9.5		mg/kg
Mercury	0.02		mg/kg
Nickel	0.72	U	mg/kg
Potassium	3170		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	11400		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.49	U	mg/kg
Zinc	8.7		mg/kg

ORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 23, 1997**
FROM:	**JULEA F. BRADLEY**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA REVIEW – PEST/PCB ORGANICS**
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG BR016/S685902

SAMPLES: 20/TISSUE

B6V-1	B6V-2	B6V-3	B7V-35
B7V-36	B7V-37	I1V-30	I1V-31
I1V-32	I1V-33	I7C-11	I7L-10
I7V-18	I7V-19	I7V-20	I7V-21
I8V-30	I8V-31	I8V-32	I8V-33

The sample set for the CTO 007 NAS Key West site, SDG BR016, consists of twenty (20) tissue samples. All samples were analyzed for Target Compound List (TCL) pesticide/PCB organic compounds. No field duplicate pairs were included in this SDG.

The samples were collected by Brown & Root Environmental on September 26, 27, 29, 30, and October 2, 1996 and analyzed by Savannah Laboratories & Environmental Services, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Method 8080 analytical and reporting protocols. The data was evaluated according to the following parameters:

Holding times
Initial and continuing calibrations
*Laboratory and field blank analyses
Surrogate spike recoveries
*Compound Quantitation

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Pesticide/PCBs

The following pesticide compounds were detected in the laboratory method blank at the maximum concentrations indicated below:

Compound	Maximum Concentration	Action Level
4, 4' - DDD	0.10 µg/kg	0.5 µg/kg
Endosulfan sulfate	0.90 µg/kg	4.5 µg/kg

Samples Affected: All samples were affected except for sample I1V-33.

Percent moisture, sample aliquot size, and dilution factors were considered prior to the application of the action level. Positive results in the affected samples for these compounds reported at concentrations below the detection limit were replaced with revised detection limits. Positive results below MDL and above the action level were qualified estimated, "J". Positive results below the action level were qualified nondetect, "U".

The holding time from date of collection to date of extraction exceeded 14 days for all samples. However, due to the absence of technical holding time requirements for tissue samples, no action was taken.

The laboratory qualifier "P" was removed from all target compound data with a %D above 25% and less than 100% between positive results on columns 1 and 2. The affected target compounds and samples are listed in the table below.

SAMPLE	AFFECTED COMPOUNDS
I7V-18	Endosulfan Sufate
I7V-19	4,4'-DDD
I7V-20	4,4'-DDE
I8V-30	Endosulfan Sulfate
I8V-31	delta-BHC, 4, 4' - DDE, 4,4' - DDD
I8V-32	Chlorobenzilate
I8V-33	delta-BHC, Dieldrin
B6V-3	Dieldrin, Endosulfan sulfate
I7L-10	beta-BHC, Dieldrin
I7C-11	Endrin
I1V-31	4, 4' - DDT
I1V-32	Aldrin, 4, 4' - DDD
B7V-36	Endosulfan sulfate, 4, 4' - DDT

The laboratory qualifier "P" was removed from the target compound data for those compounds with a %D between columns 1 and 2 greater than 100%. Positive hits were estimated "J". The affected samples and target compounds are listed in the table below.

SAMPLE	AFFECTED COMPOUNDS
I7V-18	delta-BHC, gamma-BHC, Heptachlor
I7V-19	gamma-BHC, Heptachlor, Endrin Aldehyde
I1V-20	gamma-BHC, Endrin Aldehyde
I7V-21	delta-BHC, gamma-BHC, Heptachlor, 4, 4'-DDE, 4, 4'-DDD, Endosulfan Sulfate, 4, 4'-DDT
I8V-30	Delta-BHC, gamma-BHC, Heptachlor, 4, 4'-DDD
I8V-31	Heptachlor, Endrin Aldehyde
IV8-32	gamma-BHC, Dieldrin
IV8-33	gamma-BHC, Chlorobenzilate
B6V-1	delta-BHC, Endosulfan Sulfate
B6V-2	beta-BHC, gamma-BHC, Endosulfan II, 4, 4'-DDD, Endosulfan sulfate, Endrin Aldehyde
B6V-3	beta-BHC, gamma-BHC, Aldrin, Endosulfan I, Endrin
I7L-10	gamma-BHC, Heptachlor, Aldrin
I7C-11	Endrin Aldehyde
I1V-30	Aldrin, Endosulfan I, Endrin
I1V-31	Endrin Aldehyde
I1V-32	gamma-BHC, Endosulfan I, Methoxychlor

(Table continued from page 2.)

SAMPLE	AFFECTED COMPOUNDS
B7V-35	Endrin
B7V-36	Endosulfan I, 4, 4'-DDD, Endrin Aldehyde
B7V-37	beta-BHC, 4, 4'-DDD, Endosulfan Sulfate

High %Ds between positive results in columns 1 and 2 were reported for 4, 4'-DDD and Endosulfan Sulfate in many samples, however no action was taken to qualify where this data was previously qualified for laboratory method blank contamination.

No other problems were noted.

Executive Summary

Laboratory Performance: 4,4'-DDD and Endosulfan Sulfate were detected in the laboratory method blank. Holding times between the date of collection and the date of extraction were greater than 14 days for all samples, however, no action was taken due to the lack of holding time requirements for tissue samples. Numerous pesticide/PCB compounds reported %Ds above the quality control limit of 25% but not over 100%. Numerous pesticide/PCB compounds reported %Ds between positive results in columns 1 and 2 above 100%.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Julea F Bradley

Brown & Root Environmental
Julea F. Bradley
Environmental Scientist/Data Validator

for

Brown & Root Environmental
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

NAS KEY WEST
SDG BR017

TABLE 1 – RECOMMENDATION SUMMARY

Sample No.	PEST/PCB
I1V-33	
I7V-18	A^2, A^3, J^1, J^2, J^3, J^{17}, J^{27}
I7V-19	A^1, A^3, J^2, J^3, J^4, J^{18}, J^{27}
I1V-20	A^2, A^3, J^2, J^4, J^{19}, J^{27}
I7V-21	A^2, A^3, J^1, J^2, J^3, J^5, J^6, J^7, J^8, J^{27}
I8V-30	A^1, J^2, J^3, J^6, J^{17}, J^{27}
I8V-31	A^2, A^3, J^3, J^4, J^{18}, J^{19}, J^{20}, J^{27}
I8V-32	A^2, A^3, J^2, J^9, J^{21}, J^{27}
I8V-33	A^1, A^3, J^2, J^{10}, J^{22}, J^{27}
B6V-1	A^3, J^1, J^7, J^{27}
B6V-2	A^1, A^3, J^2, J^4, J^6, J^7, J^{11}, J^{12}, J^{27}
B6V-3	A^2, A^3, J^2, J^{11}, J^{13}, J^{14}, J^{16}, J^{17}, J^{22}, J^{27}
I7L-10	A^1, A^3, J^2, J^3, J^{14}, J^{22}, J^{23}, J^{27}
I7C-11	A^1, A^3, J^4, J^{24}, J^{27}
I1V-30	A^1, A^3, J^{13}, J^{14}, J^{16}, J^{27}
I1V-31	A^1, A^3, J^4, J^{25}, J^{27}
I1V-32	A^1, A^3, J^2, J^{13}, J^{15}, J^{26}, J^{27}
B7V-35	A^3, J^{16}, J^{27}
B7V-36	A^1, A^3, J^4, J^6, J^{13}, J^{17}, J^{25}, J^{27}
B7V-37	A^1, A^3, J^6, J^7, J^{11}, J^{27}

If the field is left blank, the qualifier is A - Accept all data.

A^1 – Accept data, but change positive results for 4,4'-DDD to a revised detection limit and qualify as non-detected, (U).

A^2 – Accept data, qualify positive results as estimated, "J", as result of laboratory blank contamination for 4,4'-DDD where results are less than the MDL and greater than the set action level.

A^3 – Accept data, but change positive results for endosulfan sulfate to a revised detection limit and qualify as non-detected, (U).

J^1 – Removed the laboratory qualifier (P) for delta-BHC and estimated (J), as result of %D above 100%.

J^2 – Removed the laboratory qualifier (P) for gamma-BHC (Lindane) and estimated (J), as result of %D above 100%.

J^3 – Removed the laboratory qualifier (P) for heptachlor and estimated (J), as result of %D above 100%.

J^4 – Removed the laboratory qualifier (P) for endrin aldehyde and estimated (J), as result of %D above 100%.

J^5 – Removed the laboratory qualifier (P) for 4,4'-DDE and estimated (J), as result of %D above 100%.

J^6 – Removed the laboratory qualifier (P) for 4,4'-DDD and estimated ((J), as result of %D above 100%.

J^7 – Removed the laboratory qualifier (P) for endosulfan sulfate and estimated (J), as result of %D above 100%.

J^{8} – Removed the laboratory qualifier (P) for 4,4'-DDT and estimated (J), as result of %D above 100%.

J^{9} – Removed the laboratory qualifier (P) for dieldrin and estimated (J), as result of %D above 100%.

J^{10} – Removed the laboratory qualifier (P) for chlorobenzilate and estimated (J), as result of %D above 100%.

J^{11} – Removed the laboratory qualifier (P) for beta-BHC and estimated (J), as result of %D above 100%.

J^{12} – Removed the laboratory qualifier (P) for endosulfan II and estimated (J), as result of %D above 100%.

J^{13} – Removed the laboratory qualifier (P) for endosulfan I and estimated (J), as result of %D above 100%.

J^{14} – Removed the laboratory qualifier (P) for aldrin and estimated (J), as result of %D above 100%.

J^{15} – Removed the laboratory qualifier (P) for methoxychlor and estimated (J), as result of %D above 100%.

J^{16} – Removed the laboratory qualifier (P) for endrin and estimated (J), as result of %D above 100%.

J^{17} – Removed laboratory qualifier (P) for endosulfan sulfate, used to indicate a %D greater than 25% but less than 10%.

J^{18} – Removed laboratory qualifier (P) for 4,4'-DDD, used to indicate a %D greater than 25% but less than 10%.

J^{19} – Removed laboratory qualifier (P) for 4,4'-DDE, used to indicate a %D greater than 25% but less than 10%.

J^{20} – Removed laboratory qualifier (P) for delta-BHC, used to indicate a %D greater than 25% but less than 10%.

J^{21} – Removed laboratory qualifier (P) for chlorobenzilate, used to indicate a %D greater than 25% but less than 10%.

J^{22} – Removed laboratory qualifier (P) for dieldrin, used to indicate a %D greater than 25% but less than 10%.

J^{23} – Removed laboratory qualifier (P) for beta-BHC, used to indicate a %D greater than 25% but less than 10%.

J^{24} – Removed laboratory qualifier (P) for endrin, used to indicate a %D greater than 25% but less than 10%.

J^{25} – Removed laboratory qualifier (P) for 4,4'-DDT, used to indicate a %D greater than 25% but less than 10%.

J^{26} – Removed laboratory qualifier (P) for aldrin, used to indicate a %D greater than 25% but less than 10%.

J^{27} – Accept data, but qualify positive results reported below the CRQL as estimated (J).

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

APPENDIX C

SUPPORT DOCUMENTATION

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR016

PESTICIDES/PCBs

Sample Number: B6V-1
Sample Date: 10/2/96
Laboratory ID: S685902-9
QC Type: CS
% Moisture: 0
Location: B6V-1

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.21	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.38	J	ug/kg
Endrin aldehyde	1.2	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B6V-2
Sample Date: 10/2/96
Laboratory ID: S685902-10
QC Type: CS
% Moisture: 0
Location: B6V-2

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	0.23	J	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	0.34	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	0.37	J	ug/kg
gamma-BHC	0.047	J	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B6V-3
Sample Date: 10/2/96
Laboratory ID: S685902-11
QC Type: CS
% Moisture: 0
Location: B6V-3

	RESULT	QUAL	UNI
4,4'-DDD	1.1	J	ug/
4,4'-DDE	3.2	U	ug/
4,4'-DDT	3.2	U	ug/
Aldrin	0.23	J	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	32	U	ug/
Aroclor-1221	66	U	ug/
Aroclor-1232	32	U	ug/
Aroclor-1242	32	U	ug/
Aroclor-1248	32	U	ug/
Aroclor-1254	32	U	ug/
Aroclor-1260	32	U	ug/
beta-BHC	0.72	J	ug/
Chlordane	17	U	ug/
Chlorobenzilate	17	U	ug/
delta-BHC	1.7	U	ug/
Dieldrin	0.43	J	ug/
Endosulfan I	0.24	J	ug/
Endosulfan II	3.2	U	ug/
Endosulfan sulfate	3.2	U	ug/
Endrin	0.16	J	ug/
Endrin aldehyde	1.2	J	ug/
gamma-BHC	0.21	J	ug/
Heptachlor	1.7	U	ug/
Heptachlor epoxide	1.7	U	ug/
Isodrin	3.2	U	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR016

PESTICIDES/PCBs

Sample Number: B7V-35
Sample Date: 9/27/96
Laboratory ID: S685902-18
QC Type: CS
% Moisture: 0
Location: B7V-35

	RESULT	QUAL	UNITS
4,4'-DDD	3.2	U	ug/kg
4,4'-DDE	3.2	U	ug/kg
4,4'-DDT	3.2	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	0.58	J	ug/kg
Aroclor-1016	32	U	ug/kg
Aroclor-1221	66	U	ug/kg
Aroclor-1232	32	U	ug/kg
Aroclor-1242	32	U	ug/kg
Aroclor-1248	32	U	ug/kg
Aroclor-1254	32	U	ug/kg
Aroclor-1260	32	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.2	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.2	U	ug/kg
Endosulfan sulfate	3.2	U	ug/kg
Endrin	0.23	J	ug/kg
Endrin aldehyde	0.74	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.29	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.2	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B7V-36
Sample Date: 9/27/96
Laboratory ID: S685902-19
QC Type: CS
% Moisture: 0
Location: B7V-36

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	0.2	J	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	66	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	0.28	J	ug/kg
Endosulfan I	0.13	J	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	0.26	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B7V-37
Sample Date: 9/27/96
Laboratory ID: S685902-20
QC Type: CS
% Moisture: 0
Location: B7V-37

	RESULT	QUAL	UNI
4,4'-DDD	3.2	U	ug/
4,4'-DDE	3.2	U	ug/
4,4'-DDT	3.2	U	ug/
Aldrin	1.7	U	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	32	U	ug/
Aroclor-1221	66	U	ug/
Aroclor-1232	32	U	ug/
Aroclor-1242	32	U	ug/
Aroclor-1248	32	U	ug/
Aroclor-1254	32	U	ug/
Aroclor-1260	32	U	ug/
beta-BHC	0.8	J	ug/
Chlordane	17	U	ug/
Chlorobenzilate	17	U	ug/
delta-BHC	1.7	U	ug/
Dieldrin	3.2	U	ug/
Endosulfan I	1.7	U	ug/
Endosulfan II	3.2	U	ug/
Endosulfan sulfate	3.2	U	ug/
Endrin	3.2	U	ug/
Endrin aldehyde	0.74	J	ug/
gamma-BHC	1.7	U	ug/
Heptachlor	1.7	U	ug/
Heptachlor epoxide	1.7	U	ug/
Isodrin	3.2	U	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR016

PESTICIDES/PCBs

Sample Number: I1V-30
Sample Date: 9/29/96
Laboratory ID: S685902-14
QC Type: CS
% Moisture: 0
Location: I1V-30

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	0.38	J	ug/kg
Aldrin	0.074	J	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	68	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	0.38	J	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.26	J	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I1V-31
Sample Date: 9/29/96
Laboratory ID: S685902-15
QC Type: CS
% Moisture: 0
Location: I1V-31

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	0.35	J	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.48	J	ug/kg
Endrin aldehyde	0.15	J	ug/kg
gamma-BHC	0.21	J	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I1V-32
Sample Date: 10/2/96
Laboratory ID: S685902-16
QC Type: CS
% Moisture: 0
Location: I1V-32

	RESULT	QUAL	UNIT
4,4'-DDD	3.3	U	ug/k
4,4'-DDE	3.3	U	ug/k
4,4'-DDT	3.3	U	ug/k
Aldrin	0.22	J	ug/k
alpha-BHC	1.7	U	ug/k
Aroclor-1016	33	U	ug/k
Aroclor-1221	68	U	ug/k
Aroclor-1232	33	U	ug/k
Aroclor-1242	33	U	ug/k
Aroclor-1248	33	U	ug/k
Aroclor-1254	33	U	ug/k
Aroclor-1260	33	U	ug/k
beta-BHC	1.7	U	ug/k
Chlordane	17	U	ug/k
Chlorobenzilate	17	U	ug/k
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	0.28	J	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	0.082	J	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	0.53	J	ug/kg
Toxaphene	170	U	ug/kg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR016

PESTICIDES/PCBs

Sample Number: I1V-33
Sample Date: 10/2/96
Laboratory ID: S685902-17
QC Type: CS
% Moisture: 0
Location: I1V-33

	RESULT	QUAL	UNITS
4,4'-DDD	16	U	ug/kg
4,4'-DDE	16	U	ug/kg
4,4'-DDT	16	U	ug/kg
Aldrin	8.4	U	ug/kg
alpha-BHC	8.4	U	ug/kg
Aroclor-1016	160	U	ug/kg
Aroclor-1221	330	U	ug/kg
Aroclor-1232	160	U	ug/kg
Aroclor-1242	160	U	ug/kg
Aroclor-1248	160	U	ug/kg
Aroclor-1254	160	U	ug/kg
Aroclor-1260	760		ug/kg
beta-BHC	8.4	U	ug/kg
Chlordane	84	U	ug/kg
Chlorobenzilate	84	U	ug/kg
delta-BHC	8.4	U	ug/kg
Dieldrin	16	U	ug/kg
Endosulfan I	8.4	U	ug/kg
Endosulfan II	16	U	ug/kg
Endosulfan sulfate	16	U	ug/kg
Endrin	16	U	ug/kg
Endrin aldehyde	16	U	ug/kg
gamma-BHC	8.4	U	ug/kg
Heptachlor	8.4	U	ug/kg
Heptachlor epoxide	8.4	U	ug/kg
Isodrin	16	U	ug/kg
Methoxychlor	84	U	ug/kg
Toxaphene	840	U	ug/kg

Sample Number: I7C-11
Sample Date: 9/26/96
Laboratory ID: S685902-13
QC Type: CS
% Moisture: 0
Location: I7C-11

	RESULT	QUAL	UNITS
4,4'-DDD	3.2	U	ug/kg
4,4'-DDE	3.2	U	ug/kg
4,4'-DDT	3.2	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	32	U	ug/kg
Aroclor-1221	66	U	ug/kg
Aroclor-1232	32	U	ug/kg
Aroclor-1242	32	U	ug/kg
Aroclor-1248	32	U	ug/kg
Aroclor-1254	32	U	ug/kg
Aroclor-1260	32	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.2	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.2	U	ug/kg
Endosulfan sulfate	3.2	U	ug/kg
Endrin	0.092	J	ug/kg
Endrin aldehyde	0.54	J	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.2	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I7L-10
Sample Date: 9/26/96
Laboratory ID: S685902-12
QC Type: CS
% Moisture: 0
Location: I7L-10

	RESULT	QUAL	UNIT
4,4'-DDD	3.2	U	ug/k
4,4'-DDE	3.2	U	ug/k
4,4'-DDT	3.2	U	ug/k
Aldrin	0.052	J	ug/k
alpha-BHC	1.7	U	ug/k
Aroclor-1016	32	U	ug/k
Aroclor-1221	66	U	ug/k
Aroclor-1232	32	U	ug/k
Aroclor-1242	32	U	ug/kg
Aroclor-1248	32	U	ug/kg
Aroclor-1254	32	U	ug/kg
Aroclor-1260	32	U	ug/kg
beta-BHC	0.15	J	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	0.32	J	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.2	U	ug/kg
Endosulfan sulfate	3.2	U	ug/kg
Endrin	3.2	U	ug/kg
Endrin aldehyde	3.2	U	ug/kg
gamma-BHC	0.13	J	ug/kg
Heptachlor	0.34	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.2	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

SDG: BR016

PESTICIDES/PCBs

Sample Number: I7V-18
Sample Date: 9/30/96
Laboratory ID: S685902-1
QC Type: CS
% Moisture: 0
Location: I7V-18

	RESULT	QUAL	UNITS
4,4'-DDD	0.51	J	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	68	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.3	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	0.078	J	ug/kg
Heptachlor	0.11	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I7V-19
Sample Date: 9/30/96
Laboratory ID: S685902-2
QC Type: CS
% Moisture: 0
Location: I7V-19

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	0.26	J	ug/kg
gamma-BHC	0.1	J	ug/kg
Heptachlor	0.094	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I7V-20
Sample Date: 9/30/96
Laboratory ID: S685902-3
QC Type: CS
% Moisture: 0
Location: I7V-20

	RESULT	QUAL	UNIT
4,4'-DDD	0.82	J	ug/k
4,4'-DDE	0.3	J	ug/k
4,4'-DDT	3.3	U	ug/k
Aldrin	0.37	J	ug/k
alpha-BHC	1.7	U	ug/k
Aroclor-1016	33	U	ug/k
Aroclor-1221	68	U	ug/k
Aroclor-1232	33	U	ug/k
Aroclor-1242	33	U	ug/k
Aroclor-1248	33	U	ug/k
Aroclor-1254	33	U	ug/k
Aroclor-1260	33	U	ug/k
beta-BHC	1.7	U	ug/k
Chlordane	17	U	ug/k
Chlorobenzilate	17	U	ug/k
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	0.27	J	ug/kg
gamma-BHC	0.23	J	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR016

PESTICIDES/PCBs

Sample Number: I7V-21
Sample Date: 9/30/96
Laboratory ID: S685902-4
QC Type: CS
% Moisture: 0
Location: I7V-21

	RESULT	QUAL	UNITS
4,4'-DDD	0.66	J	ug/kg
4,4'-DDE	0.32	J	ug/kg
4,4'-DDT	0.2	J	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.97	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	0.86	J	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	0.3	J	ug/kg
Heptachlor	0.33	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I8V-30
Sample Date: 9/26/96
Laboratory ID: S685902-5
QC Type: CS
% Moisture: 0
Location: I8V-30

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	0.37	J	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.92	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	0.048	J	ug/kg
Heptachlor	0.29	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I8V-31
Sample Date: 9/26/96
Laboratory ID: S685902-6
QC Type: CS
% Moisture: 0
Location: I8V-31

	RESULT	QUAL	UNI
4,4'-DDD	0.65	J	ug/
4,4'-DDE	0.45	J	ug/
4,4'-DDT	3.3	U	ug/
Aldrin	1.7	U	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	33	U	ug/
beta-BHC	1.7	U	ug/
Chlordane	17	U	ug/
Chlorobenzilate	17	U	ug/
delta-BHC	1.1	J	ug/
Dieldrin	3.3	U	ug/
Endosulfan I	1.7	U	ug/
Endosulfan II	3.3	U	ug/
Endosulfan sulfate	3.3	U	ug/
Endrin	3.3	U	ug/
Endrin aldehyde	0.44	J	ug/
gamma-BHC	1.7	U	ug/
Heptachlor	0.15	J	ug/
Heptachlor epoxide	1.7	U	ug/
Isodrin	3.3	U	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/

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PESTICIDES/PCBs

Sample Number: I8V-32
Sample Date: 9/26/96
Laboratory ID: S685902-7
QC Type: CS
% Moisture: 0
Location: I8V-32

	RESULT	QUAL	UNITS
4,4'-DDD	0.94	J	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	24		ug/kg
delta-BHC	0.86	J	ug/kg
Dieldrin	0.75	J	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	0.1	J	ug/kg
Heptachlor	0.36	J	ug/kg
Heptachlor epoxide	0.67	J	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I8V-33
Sample Date: 9/26/96
Laboratory ID: S685902-8
QC Type: CS
% Moisture: 0
Location: I8V-33

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	7.7	J	ug/kg
delta-BHC	0.88	J	ug/kg
Dieldrin	0.42	J	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	0.14	J	ug/kg
Heptachlor	0.22	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

INORGANIC DATA VALIDATION

Brown & Root Environmental INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 23, 1997**
FROM:	**MIGNON J. CLARKE**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA REVIEW – TAL METALS**
CTO 007 – KEY WEST, FLORIDA
SDG – BR017

SAMPLES: 17/Tissue/

B4CH-16	I7L-15	I7V-13	S4V-23
B5CH-29	I7L-16	I7V-14	S4V-24
B5CH-30	I7L-22	I7V-17	
Composite	I7L-23	I8L-29	
I7L-12	I7L-9	S4V-22	

Introduction

A data review was performed on the inorganic analytical data from CTO 007, Key West, SDG-BR017, which consists of seventeen (17) environmental tissue samples.

All samples were analyzed for Target Analyte List (TAL) metals. The samples were collected by Brown & Root Environmental on September 26, 27, 29, 30, 1996, and October 3, 1996, and analyzed by Savannah Laboratories under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- * Calibration Verifications
- * Laboratory Blank Analyses
- Laboratory Duplicate Results
- * Matrix Spike Analysis

* Quality control criteria were not met for this parameter.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analysis

The following contaminants were detected in the laboratory method/preparation/field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration		Action Level	
Barium	1.0	ug/L	1.0	mg/kg
Beryllium	0.6	ug/L	0.6	mg/kg
Calcium[1]	12.118	mg/kg	60.59	mg/kg
Cobalt	3.8	ug/L	3.8	mg/kg
Copper	8.8	ug/L	8.8	mg/kg
Iron	47.5	ug/L	47.5	mg/kg
Manganese	1.3	ug/L	1.3	mg/kg
Mercury[1]	0.011	mg/kg	0.055	mg/kg
Sodium	24.0	ug/L	24.0	mg/kg
Zinc	1.8	ug/L	1.8	mg/kg

Samples affected: All

[1] Maximum concentration found in a preparation blank.

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for barium, beryllium, cobalt, copper, iron, manganese, mercury, and zinc have been qualified as nondetected "U." No action was taken for the remaining analytes since either the results were greater than the action level or were nondetects.

Notes

It was noted that all samples met the contract holding time limit criteria of six (6) months.

It was noted that the percent recovery (%R) for selenium for Contract Required Detection Limit (CRDL) was below the quality control limit. However, no validation actions were taken for CRDL %R.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method blank.

No problems were encountered in this case.

The data for these analysis were reviewed in accordance with the "National Functional Guidelines for Inorganic Data Validation," as amended for use within USEPA Region I; and the NEESA document entitled "Sampling and Chemical Analysis Quality Assurance requirements for the Navy Installation Restoration Program" (NEESA 20.2-047B; 6/88).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Julia F Bradley
Brown & Root Environmental
for Mignon J. Clarke
Environmental Scientist/Data Validator Officer

Teresa M Hudson
Brown & Root Environmental
for Joseph A. Samchuk
Data Validation Quality Assurance

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

Appendix A - Qualified Analytical Results

TO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR017

INORGANICS

Sample Number: B4CH-16
Sample Date: 10/3/96
Laboratory ID: S685902A-16
QC Type: CS
% Moisture: 0
Location: B4CH-16

	RESULT	QUAL	UNITS
Aluminum	1.6	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	36.2		mg/kg
Barium	0.04	U	mg/kg
Beryllium	0.06	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	1870		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.28	U	mg/kg
Copper	10.6		mg/kg
Iron	10.9	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	1980		mg/kg
Manganese	1.9		mg/kg
Mercury	0.05	U	mg/kg
Nickel	0.72	U	mg/kg
Potassium	2460		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	3430		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.42	U	mg/kg
Zinc	15.1		mg/kg

Sample Number: B4CH-COMP 1
Sample Date: 10/3/96
Laboratory ID: S685902A-20
QC Type: CS
% Moisture: 0
Location: B4CH-COMP 1

	RESULT	QUAL	UNITS
Aluminum	1.6	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	44.1		mg/kg
Barium	0.04	U	mg/kg
Beryllium	0.06	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	2270		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	9		mg/kg
Iron	22.7	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	2180		mg/kg
Manganese	5		mg/kg
Mercury	0.02		mg/kg
Nickel	0.72		mg/kg
Potassium	2890		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	2850		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.58		mg/kg
Zinc	15.1		mg/kg

Sample Number: B5CH-29
Sample Date: 9/29/96
Laboratory ID: S685902A-8
QC Type: CS
% Moisture: 0
Location: B5CH-29

	RESULT	QUAL	UNIT
Aluminum	1.6	U	mg/k
Antimony	1.9	U	mg/k
Arsenic	3.5		mg/k
Barium	0.04	U	mg/k
Beryllium	0.03	U	mg/k
Cadmium	0.61	U	mg/k
Calcium	1260		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	12.8		mg/kg
Iron	3.6	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	3340		mg/kg
Manganese	3		mg/kg
Mercury	0.03	U	mg/kg
Nickel	0.72	U	mg/kg
Potassium	3340		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	3280		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.42	U	mg/kg
Zinc	12.8		mg/kg

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR017

INORGANICS

Sample Number: B5CH-30
Sample Date: 9/29/96
Laboratory ID: S685902A-9
QC Type: CS
% Moisture: 0
Location: B5CH-30

	RESULT	QUAL	UNITS
Aluminum	1.7		mg/kg
Antimony	1.9	U	mg/kg
Arsenic	93		mg/kg
Barium	0.04	U	mg/kg
Beryllium	0.06	U	mg/kg
Cadmium	1.5		mg/kg
Calcium	1180		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	15.6		mg/kg
Iron	12	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	1600		mg/kg
Manganese	2.6		mg/kg
Mercury	0.07		mg/kg
Nickel	0.72	U	mg/kg
Potassium	2500		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	5140		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.42	U	mg/kg
Zinc	17.8		mg/kg

Sample Number: I7C-15
Sample Date: 9/29/96
Laboratory ID: S685902A-12
QC Type: CS
% Moisture: 0
Location: I7L-15

	RESULT	QUAL	UNITS
Aluminum	1.6	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	11.7		mg/kg
Barium	0.77	U	mg/kg
Beryllium	0.06	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	34100		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	17		mg/kg
Iron	7.1	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	3450		mg/kg
Manganese	0.77	U	mg/kg
Mercury	0.06		mg/kg
Nickel	0.72	U	mg/kg
Potassium	1480		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	8310		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.42	U	mg/kg
Zinc	17.7		mg/kg

Sample Number: I7C-16
Sample Date: 9/30/96
Laboratory ID: S685902A-13
QC Type: CS
% Moisture: 0
Location: I7L-16

	RESULT	QUAL	UN
Aluminum	6.2		mg
Antimony	1.9	U	mg
Arsenic	5.3		mg
Barium	5		mg
Beryllium	0.05	U	mg
Cadmium	0.61	U	mg
Calcium	75800		mg
Chromium	0.72	U	mg
Cobalt	0.24	U	mg
Copper	10.9		mg
Iron	68.7		mg
Lead	0.32	U	mg/
Magnesium	10600		mg/
Manganese	2.6		mg/
Mercury	0.02	U	mg/
Nickel	0.72	U	mg/
Potassium	2090		mg/
Selenium	1	U	mg/
Silver	0.3	U	mg/
Sodium	6370		mg/
Thallium	0.92	U	mg/
Vanadium	0.88		mg/
Zinc	11.1		mg/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR017

INORGANICS

Sample Number: I7L-12
Sample Date: 9/29/96
Laboratory ID: S685902A-11
QC Type: CS
% Moisture: 0
Location: I7L-12

	RESULT	QUAL	UNITS
Aluminum	9.9		mg/kg
Antimony	1.9	U	mg/kg
Arsenic	18.8		mg/kg
Barium	0.88	U	mg/kg
Beryllium	0.05	U	mg/kg
Cadmium	0.81		mg/kg
Calcium	22500		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	32.9		mg/kg
Iron	5.6	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	2860		mg/kg
Manganese	0.79	U	mg/kg
Mercury	0.08		mg/kg
Nickel	0.72	U	mg/kg
Potassium	2700		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	4170		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.42	U	mg/kg
Zinc	27.2		mg/kg

Sample Number: I7L-22
Sample Date: 10/1/96
Laboratory ID: S685902A-14
QC Type: CS
% Moisture: 0
Location: I7L-22

	RESULT	QUAL	UNITS
Aluminum	2.6		mg/kg
Antimony	1.9	U	mg/kg
Arsenic	17.9		mg/kg
Barium	0.92	U	mg/kg
Beryllium	0.06	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	24000		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	38.6		mg/kg
Iron	4.3	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	2820		mg/kg
Manganese	0.7	U	mg/kg
Mercury	0.05	U	mg/kg
Nickel	0.72	U	mg/kg
Potassium	3000		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	3860		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.42	U	mg/kg
Zinc	28.9		mg/kg

Sample Number: I7L-23
Sample Date: 10/1/96
Laboratory ID: S685902A-15
QC Type: CS
% Moisture: 0
Location: I7L-23

	RESULT	QUAL	UNI
Aluminum	1.6	U	mg
Antimony	1.9	U	mg/
Arsenic	12.2		mg/
Barium	0.78	U	mg/
Beryllium	0.07	U	mg/
Cadmium	0.61	U	mg/
Calcium	20400		mg/
Chromium	0.72	U	mg/
Cobalt	0.25	U	mg/
Copper	24.4		mg/
Iron	3.6	U	mg/
Lead	0.32	U	mg/l
Magnesium	2570		mg/l
Manganese	0.71	U	mg/l
Mercury	0.11		mg/l
Nickel	0.72	U	mg/l
Potassium	2970		mg/l
Selenium	1	U	mg/l
Silver	0.3	U	mg/l
Sodium	4770		mg/l
Thallium	0.92	U	mg/l
Vanadium	0.42	U	mg/l
Zinc	20.6		mg/l

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR017

INORGANICS

Sample Number: I7L-9
Sample Date: 9/26/96
Laboratory ID: S685902A-10
QC Type: CS
% Moisture: 0
Location: I7L-9

	RESULT	QUAL	UNITS
Aluminum	1.6	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	16.2		mg/kg
Barium	1.3		mg/kg
Beryllium	0.05	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	48500		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	29.8		mg/kg
Iron	5.2	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	4920		mg/kg
Manganese	0.94	U	mg/kg
Mercury	0.05	U	mg/kg
Nickel	0.72	U	mg/kg
Potassium	2530		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	6910		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.42	U	mg/kg
Zinc	24.4		mg/kg

Sample Number: I7V-13
Sample Date: 9/29/96
Laboratory ID: S685902A-4
QC Type: CS
% Moisture: 0
Location: I7V-13

	RESULT	QUAL	UNITS
Aluminum	2		mg/kg
Antimony	1.9	U	mg/kg
Arsenic	0.94	U	mg/kg
Barium	0.57	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	22500		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	0.95	U	mg/kg
Iron	47.1	U	mg/kg
Lead	0.32		mg/kg
Magnesium	3530		mg/kg
Manganese	9.8		mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.72	U	mg/kg
Potassium	2900		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	10100		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.42	U	mg/kg
Zinc	7.3		mg/kg

Sample Number: I7V-14
Sample Date: 9/29/96
Laboratory ID: S685902A-5
QC Type: CS
% Moisture: 0
Location: I7V-14

	RESULT	QUAL	UNI
Aluminum	3.7		mg
Antimony	1.9	U	mg/
Arsenic	0.94	U	mg/
Barium	3.1		mg/
Beryllium	0.03	U	mg/
Cadmium	0.61	U	mg/
Calcium	11000		mg/l
Chromium	0.72	U	mg/l
Cobalt	0.24	U	mg/l
Copper	1.2	U	mg/l
Iron	53.2		mg/l
Lead	0.32	U	mg/k
Magnesium	2470		mg/k
Manganese	11.9		mg/k
Mercury	0.02	U	mg/k
Nickel	0.72	U	mg/k
Potassium	3470		mg/k
Selenium	1	U	mg/k
Silver	0.3	U	mg/k
Sodium	9980		mg/k
Thallium	0.92	U	mg/k
Vanadium	0.42	U	mg/k
Zinc	12.7		mg/k

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR017

INORGANICS

Sample Number: I7V-17
Sample Date: 9/30/96
Laboratory ID: S685902A-6
QC Type: CS
% Moisture: 0
Location: I7V-17

	RESULT	QUAL	UNITS
Aluminum	1.6	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	0.94	U	mg/kg
Barium	0.2	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	1510		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	0.3	U	mg/kg
Iron	26.1	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	1270		mg/kg
Manganese	6		mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.72	U	mg/kg
Potassium	4380		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	11500		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.42	U	mg/kg
Zinc	3.1		mg/kg

Sample Number: I8L-29
Sample Date: 9/26/96
Laboratory ID: S685902A-7
QC Type: CS
% Moisture: 0
Location: I8L-29

	RESULT	QUAL	UNITS
Aluminum	1.6	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	10.9		mg/kg
Barium	0.86	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	29200		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	39.8		mg/kg
Iron	13.6	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	3440		mg/kg
Manganese	1.2	U	mg/kg
Mercury	0.03	U	mg/kg
Nickel	0.72	U	mg/kg
Potassium	2200		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	5590		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.57		mg/kg
Zinc	18.9		mg/kg

Sample Number: S4V-22
Sample Date: 9/27/96
Laboratory ID: S685902A-1
QC Type: CS
% Moisture: 0
Location: S4V-22

	RESULT	QUAL	UNI
Aluminum	1.6	U	mg
Antimony	1.9	U	mg/
Arsenic	0.94	U	mg/
Barium	0.18	U	mg/
Beryllium	0.03	U	mg/
Cadmium	0.61	U	mg/
Calcium	5670		mg/
Chromium	0.72	U	mg/
Cobalt	0.24	U	mg/
Copper	1.2	U	mg/
Iron	9.6	U	mg/
Lead	0.32	U	mg/
Magnesium	3300		mg/
Manganese	24.7		mg/
Mercury	0.01	U	mg/
Nickel	0.72	U	mg/
Potassium	4960		mg/
Selenium	1	U	mg/
Silver	0.3	U	mg/
Sodium	2380		mg/
Thallium	0.92	U	mg/
Vanadium	0.42	U	mg/
Zinc	1.6	U	mg/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR017

INORGANICS

Sample Number: S4V-23
Sample Date: 9/27/96
Laboratory ID: S685902A-2
QC Type: CS
% Moisture: 0
Location: S4V-23

	RESULT	QUAL	UNITS
Aluminum	1.6	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	0.94	U	mg/kg
Barium	0.21	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	4510		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	2.6	U	mg/kg
Iron	10.1	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	2340		mg/kg
Manganese	7.1		mg/kg
Mercury	0.02	U	mg/kg
Nickel	0.72	U	mg/kg
Potassium	4840		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	3210		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.42	U	mg/kg
Zinc	2.2		mg/kg

Sample Number: S4V-24
Sample Date: 9/27/96
Laboratory ID: S685902A-3
QC Type: CS
% Moisture: 0
Location: S4V-24

	RESULT	QUAL	UNITS
Aluminum	1.6	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	0.94	U	mg/kg
Barium	0.18	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	4920		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	1.5	U	mg/kg
Iron	8.4	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	2020		mg/kg
Manganese	8.4		mg/kg
Mercury	0.03	U	mg/kg
Nickel	0.72	U	mg/kg
Potassium	5870		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	3060		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.42	U	mg/kg
Zinc	1.6	U	mg/kg

ORGANIC DATA VALIDATION

Brown & Root Environmental

INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 23, 1997**
FROM:	**TERESA M. HUDSON**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – PEST/PCB ORGANICS**
CTO 007 – NAS KEY WEST, KEY WEST, FLORIDA
SDG – BR017

SAMPLES: 17/TISSUE/

85902A-1	85902A-6	85902A-10	85902A-14
85902A-2	85902A-7	85902A-11	85902A-15
85902A-3	85902A-8	85902A-12	85902A-16
85902A-4	85902A-9	85902A-13	85902A-20
85902A-5			

The sample set for the CTO 007 NAS Key West site, SDG BR017, consists of seventeen (17) tissue samples. All samples were analyzed for Target Compound List (TCL) pesticide/PCB organic compounds. No field duplicate pairs were included in this SDG.

The samples were collected by Brown & Root Environmental on September 26, 27, 29, 30, and October 1, and 3, 1996 and analyzed by Savannah Laboratories & Environmental Services, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using EPA SW-846 Method 8080 analytical and reporting protocols. The data was evaluated according to the following parameters:

- Holding times
- Initial and continuing calibrations
- * Laboratory and field blank analyses
- Surrogate spike recoveries
- * Compound Quantitation

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Pesticide/PCBs

The following pesticide compound was detected in the laboratory method blank at the maximum concentration indicated below:

Compound	Maximum Concentration	Action Level
Chlorobenzilate	3 ug/Kg	15 ug/Kg
Endrin	0.1 ug/Kg	0.5 ug/Kg
Methoxychlor	1 ug/Kg	5 ug/Kg

Samples Affected: 85902A-1, -2, -3, -4, -6, -8, -10, -12, -13, and -16.

Percent moisture, sample aliquot size, and dilution factors were considered prior to the application of the action level. Positive results in the affected samples for these compounds reported at concentrations below the detection limit were replaced with revised detection limits. Positive results below the detection limit and above the action level were qualified estimated, "J." Positive results below the action level were qualified nondetect, "U."

The holding time from date of collection to date of extraction exceeded 14 days for all samples. However, due to the absence of technical holding time requirements for tissue samples, no action was taken.

The laboratory qualifier "P" was removed from all target compound data with a %D above 25% and less than 100% between positive results on columns 1 and 2. The affected target compounds and samples are listed in the table below.

SAMPLE	AFFECTED COMPOUNDS
85902A-2	Methoxychlor, Endrin aldehyde
85902A-6	Dieldrin, Methoxychlor
85902A-7	4,4'-DDD
85902A-10	Delta-BHC, Endosulfan II, Methoxychlor
85902A-11	Endosulfan II
85902A-13	Gamma-BHC (lindane), Endrin aldehyde
85902A-14	4,4'-DDT
85902A-16	Dieldrin, Chlorobenzilate

The laboratory qualifier "P" was removed from the target compound data for those compounds with a %D between columns 1 and 2 greater than 100%. Positive hits were estimated "J." The affected samples and target compounds are listed in the table below.

SAMPLE	AFFECTED COMPOUNDS
85902A-1	Gamma-BHC (lindane), Methoxychlor
85902A-2	Gamma-BHC (lindane), 4,4'-DDD
85902A-3	Gamma-BHC (lindane), Methoxychlor
85902A-4	Delta-BHC, Methoxychlor
85902A-5	Delta-BHC
85902A-6	Delta-BHC
85902A-7	Delta-BHC
85902A-10	4,4'-DDD, Endrin aldehyde
85902A-11	Heptachlor, 4,4'-DDD
85902A-12	Delta-BHC, Endrin, 4,4'-DDD
85902A-13	Delta-BHC, Endrin
85902A-14	Delta-BHC
85902A-15	Delta-BHC
85902A-16	Aldrin, Endosulfan I, Endrin, 4,4'-DDD, 4,4'-DDT, Endrin aldehyde

Due to coelution matrix interference on one of the GC columns, confirmation of Gamma-BHC (lindane) in samples 85902A-7, 85902A-10, and 85902A-16 was not feasible. Thus, the Gamma-BHC (lindane) concentrations reported for these samples are based on a single column. The laboratory qualifier "X" was removed and the estimated "J" was left to indicate estimated concentrations.

Due to coeluting matrix interference on one of the GC columns, confirmation of Delta-BHC in 85902A-11 was not feasible. Thus, the Delta-BHC concentration reported for this sample is based on a single column. The laboratory qualifier "X" was removed and the estimated "J" was left to indicate an estimated concentration.

Due to coeluting matrix interference on one of the GC columns, confirmation of Endosulfan II in 85902A-12 was not feasible. Thus, the Endosulfan II concentration reported for this sample is based on a single column. The laboratory qualifier "X" was removed and it was estimated "J" to indicate an estimated concentration.

Due to coeluting matrix interference on one of the GC columns, confirmation of 4,4'-DDT in 85902A-13 was not feasible. Thus, the 4,4'-DDT concentration reported for this sample is based on a single column. The laboratory qualifier "X" was removed and the estimated "J" was left to indicate an estimated concentration.

High %Ds between positive results in columns 1 and 2 were reported for Endrin and Methoxychlor in some samples, however no action was taken to qualify since this data was previously qualified for laboratory method blank contamination.

No other problems were noted.

Executive Summary

Laboratory Performance: Chlorobenzilate, Endrin, and Methoxychlor were detected in the laboratory method blank. Holding times between the date of collection and the date of extraction exceeded 14 days for all samples, however, no action was taken due to the lack of holding time requirements for tissue samples. Some pesticide/PCB compounds reported %Ds above the quality control limit of 25%, but not over 100%. Some pesticide/PCB compounds reported %Ds above 100%. Due to coeluting matrix interference on one of the GC columns, confirmation of multiple compounds was not feasible for some samples. Thus, the concentrations reported for these samples are based on a single column.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program" (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Teresa M. Hudson

Brown & Root Environmental
Teresa M. Hudson
Environmental Scientist/Data Validator

E. A. Anderson for

Brown & Root Environmental
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

NAS KEY WEST
SDG – BR017

TABLE 1 - RECOMMENDATION SUMMARY

Sample Number	PEST/PCB
85902A-1	A^1 J^1
85902A-2	A^1 J^1 J^2 J^3 J^{21}
85902A-3	A^1 J^1 J^{21}
85902A-4	A^1 J^4 J^{21}
85902A-5	J^4 J^{21}
85902A-6	A^1 J^4 J^5 J^{21}
85902A-7	J^4 J^6 J^7 J^{21}
85902A-8	A^1
85902A-9	
85902A-10	A^1 J^2 J^7 J^8 J^9 J^{10}
85902A-11	J^2 J^9 J^{11} J^{12} J^{21}
85902A-12	A^2 J^2 J^4 J^{13} J^{21}
85902A-13	A^2 J^3 J^4 J^{14} J^{15} J^{21}
85902A-14	J^4 J^{16} J^{21}
85902A-15	J^4
85902A-16	A^2 J^2 J^5 J^7 J^{10} J^{17} J^{18} J^{19} J^{20} J^{21}
85902A-20	

If the field is left blank, the qualifier is A - Accept all data.

A^1 Accept data, but change positive results for methoxychlor to a revised detection limit and qualify as non-detected, (U) for blank contamination.

A^2 Accept data, but change positive results for endrin to a revised detection limit and qualify as non-detected, (U) for blank contamination.

J^1 Removed the laboratory qualifier (P) for gamma-BHC (lindane) and estimated (J), as result of %D above 100%.

J^2 Removed the laboratory qualifier (P) for 4,4'-DDD and estimated (J), as result of %D above 100%.

J^3 Removed laboratory qualifier (P) for endrin aldehyde, used to indicate a high %D. No further action was taken.

J^4 Removed the laboratory qualifier (P) for delta-BHC and estimated (J), as result of %D above 100%.

J^5 Removed laboratory qualifier (P) for dieldrin, used to indicate a high %D. No further action was taken.

J^6 Removed laboratory qualifier (P) for 4,4'-DDD, used to indicate a high %D. No further action was taken.

J^7 Removed the laboratory qualifier (X) which indicates that the results for gamma-BHC (lindane) are based on one column. Qualified as estimate (J).

J^8 Removed laboratory qualifier (P) for delta-BHC, used to indicate a high %D. No further action was taken.

J^9 Removed laboratory qualifier (P) for endosulfan II, used to indicate a high %D. No further action was taken.

J^{10} Removed the laboratory qualifier (P) for endrin aldehyde and estimated (J), as result of %D above 100%.

J^{11} Removed the laboratory qualifier (X) which indicates that the results for delta-BHC are based on one column. Qualified as estimate (J).

J^{12} Removed the laboratory qualifier (P) for heptachlor and estimated (J), as result of %D above 100%.

J^{13} Removed the laboratory qualifier (X) which indicates that the results for endosulfan II are based on one column. Qualified as estimate (J).

J^{14} Removed laboratory qualifier (P) for gamma-BHC (lindane), used to indicate a high %D. No further action was taken.

J^{15} Removed the laboratory qualifier (X) which indicates that the results for endosulfan sulfate are based on one column. Qualified as estimate (J).

J^{16} Removed laboratory qualifier (P) for 4,4'-DDT, used to indicate a high %D. No further action was taken.

J^{17} Removed the laboratory qualifier (P) for aldrin and estimated (J), as result of %D above 100%.

J^{18} Removed the laboratory qualifier (P) for endosulfan I and estimated (J), as result of %D above 100%.

J^{19} Removed the laboratory qualifier (P) for 4,4'-DDT and estimated (J), as result of %D above 100%.

J^{20} Removed laboratory qualifier (P) for chlorobenzilate, used to indicate a high %D. No further action was taken.

J^{21} Positive results reported less than the CRQL were estimated (J).

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

TO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR017

PESTICIDES/PCBs

Sample Number: B4CH-16
Sample Date: 10/3/96
Laboratory ID: S685902A-16
QC Type: CS
% Moisture: 0
Location: B4CH-16

	RESULT	QUAL	UNITS
4,4'-DDD	0.12	J	ug/kg
4,4'-DDE	4.2	U	ug/kg
4,4'-DDT	1.7	J	ug/kg
Aldrin	0.26	J	ug/kg
alpha-BHC	2.2	U	ug/kg
Aroclor-1016	42	U	ug/kg
Aroclor-1221	85	U	ug/kg
Aroclor-1232	42	U	ug/kg
Aroclor-1242	42	U	ug/kg
Aroclor-1248	42	U	ug/kg
Aroclor-1254	42	U	ug/kg
Aroclor-1260	42	U	ug/kg
beta-BHC	0.8	J	ug/kg
Chlordane	22	U	ug/kg
Chlorobenzilate	54		ug/kg
delta-BHC	2.2	U	ug/kg
Dieldrin	0.58	J	ug/kg
Endosulfan I	0.33	J	ug/kg
Endosulfan II	4.2	U	ug/kg
Endosulfan sulfate	4.2	U	ug/kg
Endrin	4.2	U	ug/kg
Endrin aldehyde	0.64	J	ug/kg
gamma-BHC	0.25	J	ug/kg
Heptachlor	2.2	U	ug/kg
Heptachlor epoxide	2.2	U	ug/kg
Isodrin	4.2	U	ug/kg
Methoxychlor	22	U	ug/kg
Toxaphene	220	U	ug/kg

Sample Number: B4CH-COMP 1
Sample Date: 10/3/96
Laboratory ID: S685902A-20
QC Type: CS
% Moisture: 0
Location: B4CH-COMP 1

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	66	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: B5CH-29
Sample Date: 9/29/96
Laboratory ID: S685902A-8
QC Type: CS
% Moisture: 0
Location: B5CH-29

	RESULT	QUAL	UNI
4,4'-DDD	3.3	U	ug/
4,4'-DDE	3.3	U	ug/
4,4'-DDT	3.3	U	ug/
Aldrin	1.7	U	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	67	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	33	U	ug/
beta-BHC	1.7	U	ug/
Chlordane	17	U	ug/
Chlorobenzilate	17	U	ug/
delta-BHC	1.7	U	ug/
Dieldrin	3.3	U	ug/
Endosulfan I	1.7	U	ug/
Endosulfan II	3.3	U	ug/
Endosulfan sulfate	3.3	U	ug/
Endrin	3.3	U	ug/
Endrin aldehyde	3.3	U	ug/
gamma-BHC	1.7	U	ug/
Heptachlor	1.7	U	ug/
Heptachlor epoxide	1.7	U	ug/
Isodrin	3.3	U	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/

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Sample Number: B5CH-30
Sample Date: 9/29/96
Laboratory ID: S685902A-9
QC Type: CS
% Moisture: 0
Location: B5CH-30

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	0.19	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I7C-15
Sample Date: 9/29/96
Laboratory ID: S685902A-12
QC Type: CS
% Moisture: 0
Location: I7L-15

	RESULT	QUAL	UNITS
4,4'-DDD	0.16	J	ug/kg
4,4'-DDE	3.2	U	ug/kg
4,4'-DDT	0.16	J	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	32	U	ug/kg
Aroclor-1221	66	U	ug/kg
Aroclor-1232	32	U	ug/kg
Aroclor-1242	32	U	ug/kg
Aroclor-1248	32	U	ug/kg
Aroclor-1254	32	U	ug/kg
Aroclor-1260	32	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.07	J	ug/kg
Dieldrin	0.19	J	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	0.14	J	ug/kg
Endosulfan sulfate	3.2	U	ug/kg
Endrin	3.2	U	ug/kg
Endrin aldehyde	3.2	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.2	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I7C-16
Sample Date: 9/30/96
Laboratory ID: S685902A-13
QC Type: CS
% Moisture: 0
Location: I7L-16

	RESULT	QUAL	UN
4,4'-DDD	3.3	U	ug
4,4'-DDE	3.3	U	ug
4,4'-DDT	0.46	J	ug
Aldrin	1.7	U	ug
alpha-BHC	1.7	U	ug
Aroclor-1016	33	U	ug
Aroclor-1221	67	U	ug
Aroclor-1232	33	U	ug
Aroclor-1242	33	U	ug
Aroclor-1248	33	U	ug
Aroclor-1254	33	U	ug
Aroclor-1260	33	U	ug
beta-BHC	1.7	U	ug
Chlordane	17	U	ug
Chlorobenzilate	17	U	ug
delta-BHC	0.079	J	ug
Dieldrin	3.3	U	ug
Endosulfan I	1.7	U	ug
Endosulfan II	3.3	U	ug
Endosulfan sulfate	3.3	U	ug
Endrin	3.3	U	ug
Endrin aldehyde	0.99	J	ug
gamma-BHC	0.17	J	ug
Heptachlor	1.7	U	ug
Heptachlor epoxide	1.7	U	ug
Isodrin	3.3	U	ug
Methoxychlor	17	U	ug
Toxaphene	170	U	ug

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Sample Number: I7L-12
Sample Date: 9/29/96
Laboratory ID: S685902A-11
QC Type: CS
% Moisture: 0
Location: I7L-12

	RESULT	QUAL	UNITS
4,4'-DDD	0.13	J	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.6	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	0.11	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	0.069	J	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I7L-22
Sample Date: 10/1/96
Laboratory ID: S685902A-14
QC Type: CS
% Moisture: 0
Location: I7L-22

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	0.12	J	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.062	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I7L-23
Sample Date: 10/1/96
Laboratory ID: S685902A-15
QC Type: CS
% Moisture: 0
Location: I7L-23

	RESULT	QUAL	UNIT
4,4'-DDD	3.3	U	ug/k
4,4'-DDE	3.3	U	ug/k
4,4'-DDT	3.3	U	ug/k
Aldrin	1.7	U	ug/k
alpha-BHC	1.7	U	ug/k
Aroclor-1016	33	U	ug/k
Aroclor-1221	68	U	ug/k
Aroclor-1232	33	U	ug/k
Aroclor-1242	33	U	ug/k
Aroclor-1248	33	U	ug/k
Aroclor-1254	33	U	ug/k
Aroclor-1260	33	U	ug/k
beta-BHC	1.7	U	ug/k
Chlordane	17	U	ug/k
Chlorobenzilate	17	U	ug/k
delta-BHC	0.053	J	ug/k
Dieldrin	3.3	U	ug/k
Endosulfan I	1.7	U	ug/k
Endosulfan II	3.3	U	ug/k
Endosulfan sulfate	3.3	U	ug/k
Endrin	3.3	U	ug/k
Endrin aldehyde	3.3	U	ug/k
gamma-BHC	1.7	U	ug/k
Heptachlor	1.7	U	ug/k
Heptachlor epoxide	1.7	U	ug/k
Isodrin	3.3	U	ug/k
Methoxychlor	17	U	ug/k
Toxaphene	170	U	ug/k

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Sample Number: I7L-9
Sample Date: 9/26/96
Laboratory ID: S685902A-10
QC Type: CS
% Moisture: 0
Location: I7L-9

	RESULT	QUAL	UNITS
4,4'-DDD	0.18	J	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.098	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	0.16	J	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	0.1	J	ug/kg
gamma-BHC	0.12	J	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I7V-13
Sample Date: 9/29/96
Laboratory ID: S685902A-4
QC Type: CS
% Moisture: 0
Location: I7V-13

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.73	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	6		ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I7V-14
Sample Date: 9/29/96
Laboratory ID: S685902A-5
QC Type: CS
% Moisture: 0
Location: I7V-14

	RESULT	QUAL	UNI
4,4'-DDD	3.4	U	ug/l
4,4'-DDE	3.4	U	ug/l
4,4'-DDT	3.4	U	ug/l
Aldrin	1.7	U	ug/l
alpha-BHC	1.7	U	ug/l
Aroclor-1016	34	U	ug/
Aroclor-1221	68	U	ug/
Aroclor-1232	34	U	ug/l
Aroclor-1242	34	U	ug/l
Aroclor-1248	34	U	ug/l
Aroclor-1254	34	U	ug/l
Aroclor-1260	34	U	ug/l
beta-BHC	1.7	U	ug/l
Chlordane	17	U	ug/l
Chlorobenzilate	17	U	ug/l
delta-BHC	0.22	J	ug/l
Dieldrin	3.4	U	ug/l
Endosulfan I	1.7	U	ug/l
Endosulfan II	3.4	U	ug/l
Endosulfan sulfate	3.4	U	ug/l
Endrin	3.4	U	ug/l
Endrin aldehyde	3.4	U	ug/l
gamma-BHC	1.7	U	ug/l
Heptachlor	1.7	U	ug/l
Heptachlor epoxide	1.7	U	ug/l
Isodrin	3.4	U	ug/l
Methoxychlor	17	U	ug/l
Toxaphene	170	U	ug/l

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Sample Number: I7V-17
Sample Date: 9/30/96
Laboratory ID: S685902A-6
QC Type: CS
% Moisture: 0
Location: I7V-17

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.1	J	ug/kg
Dieldrin	0.54	J	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.7	U	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: I8L-29
Sample Date: 9/26/96
Laboratory ID: S685902A-7
QC Type: CS
% Moisture: 0
Location: I8L-29

	RESULT	QUAL	UNITS
4,4'-DDD	0.18	J	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	66	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	0.038	J	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	0.15	J	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: S4V-22
Sample Date: 9/27/96
Laboratory ID: S685902A-1
QC Type: CS
% Moisture: 0
Location: S4V-22

	RESULT	QUAL	UNIT
4,4'-DDD	3.3	U	ug/k
4,4'-DDE	3.3	U	ug/k
4,4'-DDT	3.3	U	ug/k
Aldrin	1.7	U	ug/k
alpha-BHC	1.7	U	ug/k
Aroclor-1016	33	U	ug/k
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/k
Aroclor-1242	33	U	ug/k
Aroclor-1248	33	U	ug/k
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	1.8	J	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

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Sample Number: S4V-23
Sample Date: 9/27/96
Laboratory ID: S685902A-2
QC Type: CS
% Moisture: 0
Location: S4V-23

	RESULT	QUAL	UNITS
4,4'-DDD	0.064	J	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	0.11	J	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	68	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	0.16	J	ug/kg
gamma-BHC	1.2	J	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

Sample Number: S4V-24
Sample Date: 9/27/96
Laboratory ID: S685902A-3
QC Type: CS
% Moisture: 0
Location: S4V-24

	RESULT	QUAL	UNITS
4,4'-DDD	3.3	U	ug/kg
4,4'-DDE	3.3	U	ug/kg
4,4'-DDT	3.3	U	ug/kg
Aldrin	1.7	U	ug/kg
alpha-BHC	1.7	U	ug/kg
Aroclor-1016	33	U	ug/kg
Aroclor-1221	67	U	ug/kg
Aroclor-1232	33	U	ug/kg
Aroclor-1242	33	U	ug/kg
Aroclor-1248	33	U	ug/kg
Aroclor-1254	33	U	ug/kg
Aroclor-1260	33	U	ug/kg
beta-BHC	1.7	U	ug/kg
Chlordane	17	U	ug/kg
Chlorobenzilate	17	U	ug/kg
delta-BHC	1.7	U	ug/kg
Dieldrin	3.3	U	ug/kg
Endosulfan I	1.7	U	ug/kg
Endosulfan II	3.3	U	ug/kg
Endosulfan sulfate	3.3	U	ug/kg
Endrin	3.3	U	ug/kg
Endrin aldehyde	3.3	U	ug/kg
gamma-BHC	0.83	J	ug/kg
Heptachlor	1.7	U	ug/kg
Heptachlor epoxide	1.7	U	ug/kg
Isodrin	3.3	U	ug/kg
Methoxychlor	17	U	ug/kg
Toxaphene	170	U	ug/kg

INORGANIC DATA VALIDATION

Brown & Root Environmental INTERNAL CORRESPONDENCE

TO:	**C. BRYAN**	**DATE:**	**JANUARY 23, 1997**
FROM:	**MIGNON J. CLARKE**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA REVIEW – TAL METALS**
CTO 007 – KEY WEST, FLORIDA
SDG – BR018

SAMPLES: 4/Tissue/

B4CH-22
B4CH-23
B4CH-34
Composite

Introduction

A data review was performed on the inorganic analytical data from CTO 007, Key West, SDG-BR018, which consists of four (4) environmental tissue samples.

All samples were analyzed for Target Analyte List (TAL) metals. The samples were collected by Brown & Root Environmental on October 3, 1996 and analyzed by Savannah Laboratories under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory (CLP) Statement of Work (SOW) ILM03.0 analytical and reporting protocols.

- Data Completeness
- Holding Times
- * Calibration Verifications
- * Laboratory Blank Analyses
- Matrix Spike Analysis

* Quality control criteria were not met for these parameters.

The attached Table 1 summarizes the review recommendations which were based on the following information:

Laboratory Blank Analysis

The following contaminants were detected in the laboratory method/preparation/field quality control blanks at the following maximum concentrations:

Analyte	Maximum Concentration		Action Level	
Aluminum	22.6	ug/L	22.6	mg/kg
Barium	1.4	ug/L	1.4	mg/kg
Beryllium	0.6	ug/L	0.6	mg/kg
Calcium[1]	6.095	mg/kg	30.475	mg/kg
Cobalt	3.8	ug/L	3.8	mg/kg
Copper	8.8	ug/L	8.8	mg/kg
Iron	47.5	ug/L	47.5	mg/kg
Magnesium	30.5	ug/L	30.5	mg/kg
Manganese[1]	0.309	mg/kg	1.545	mg/kg
Mercury	0.08	mg/kg	0.08	mg/kg
Sodium	33.4	ug/L	33.4	mg/kg
Vanadium	2.8	ug/L	2.8	mg/kg
Zinc	1.8	ug/L	1.8	mg/kg

Samples affected: All

[1] Maximum concentration found in an aqueous preparation blank.

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample percent solids and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the action level for aluminum, barium, beryllium, iron, manganese, mercury, and vanadium have been qualified as nondetected "U." No action was taken for the remaining analytes since either the results were greater than the action level or were nondetects.

Notes

It was noted that all samples met the contract holding time limit criteria of six (6) months.

It was noted that silver was below the quality control limits for Contract Required Detection Level (CRDL) Percent Recovery (%R). However, no validation actions were taken for CRDL %R.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method blank.

No problems were encountered in this case.

The data for these analysis were reviewed in accordance with the "National Functional Guidelines for inorganic Data Validation," as amended for use within USEPA Region I; and the NEESA document entitled "Sampling and Chemical Analysis Quality Assurance requirements for the Navy Installation Restoration Program" (NEESA 20.2-047B; 6/88).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon review criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Julie F Bradley
Brown & Root Environmental
for Mignon J. Clarke
Environmental Scientist/Data Validator

Teresa M Hudson
Brown & Root Environmental
for Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A – Qualified Analytical Results
2. Appendix B – Results as reported by the Laboratory
3. Appendix C – Support Documentation

Appendix A - Qualified Analytical Results

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR018

INORGANICS

Sample Number: B4CH-22
Sample Date: 10/3/96
Laboratory ID: S685902B-2
QC Type: CS
% Moisture: 0
Location: B4CH-22

	RESULT	QUAL	UNITS
Aluminum	1.6	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	28.6		mg/kg
Barium	0.2	U	mg/kg
Beryllium	0.03	U	mg/kg
Cadmium	5.4		mg/kg
Calcium	2120		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	81.7		mg/kg
Iron	57.1		mg/kg
Lead	0.32	U	mg/kg
Magnesium	4980		mg/kg
Manganese	2.2		mg/kg
Mercury	0.03	U	mg/kg
Nickel	0.72	U	mg/kg
Potassium	2080		mg/kg
Selenium	2.4		mg/kg
Silver	4.3		mg/kg
Sodium	2180		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	98.3		mg/kg
Zinc	477		mg/kg

Sample Number: B4CH-23
Sample Date: 10/3/96
Laboratory ID: S685902B-3
QC Type: CS
% Moisture: 0
Location: B4CH-23

	RESULT	QUAL	UNITS
Aluminum	2	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	30.1		mg/kg
Barium	0.04	U	mg/kg
Beryllium	0.04	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	1460		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	11.4		mg/kg
Iron	23.9	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	2350		mg/kg
Manganese	1.8		mg/kg
Mercury	0.03	U	mg/kg
Nickel	0.72	U	mg/kg
Potassium	2750		mg/kg
Selenium	1	U	mg/kg
Silver	0.3	U	mg/kg
Sodium	2410		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	3.7		mg/kg
Zinc	13.8		mg/kg

Sample Number: B4CH-24
Sample Date: 10/3/96
Laboratory ID: S685902B-4
QC Type: CS
% Moisture: 0
Location: B4CH-24

	RESULT	QUAL	UNI
Aluminum	1.6	U	mg/
Antimony	1.9	U	mg/
Arsenic	5.4		mg/
Barium	0.12	U	mg/
Beryllium	0.17	U	mg/
Cadmium	0.61	U	mg/
Calcium	1070		mg/
Chromium	0.72	U	mg/
Cobalt	0.24	U	mg/
Copper	10.5		mg/
Iron	7.6	U	mg/
Lead	0.32	U	mg/
Magnesium	2980		mg/
Manganese	4.2		mg/
Mercury	0.05	U	mg/
Nickel	0.72	U	mg/
Potassium	3480		mg/
Selenium	1	U	mg/
Silver	0.3	U	mg/
Sodium	3840		mg/
Thallium	0.92	U	mg/
Vanadium	0.42	U	mg/
Zinc	12.8		mg/

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR018

INORGANICS

Sample Number: B4CH-COMP 2
Sample Date: 10/3/96
Laboratory ID: S685902B-1
QC Type: CS
% Moisture: 0
Location: B4CH-COMP 2

	RESULT	QUAL	UNITS
Aluminum	1.9	U	mg/kg
Antimony	1.9	U	mg/kg
Arsenic	46.7		mg/kg
Barium	0.06	U	mg/kg
Beryllium	0.06	U	mg/kg
Cadmium	0.61	U	mg/kg
Calcium	1430		mg/kg
Chromium	0.72	U	mg/kg
Cobalt	0.24	U	mg/kg
Copper	11.8		mg/kg
Iron	18	U	mg/kg
Lead	0.32	U	mg/kg
Magnesium	2430		mg/kg
Manganese	0.9	U	mg/kg
Mercury	0.03	U	mg/kg
Nickel	0.72	U	mg/kg
Potassium	3160		mg/kg
Selenium	1	U	mg/kg
Silver	0.4		mg/kg
Sodium	2900		mg/kg
Thallium	0.92	U	mg/kg
Vanadium	0.83	U	mg/kg
Zinc	15.1		mg/kg

ORGANIC DATA VALIDATION

INTERNAL CORRESPONDENCE

TO:	CHUCK BRYAN	DATE:	JANUARY 22, 1997
FROM:	EDWARD A. INABINETT	COPIES:	DV FILE

SUBJECT: ORGANIC DATA REVIEW - PEST/PCB
CTO 007, NAS KEY WEST, KEY WEST, FLORIDA
SDG BR018

SAMPLES: 4/Tissue:

B4CH-17,-18,-21
B4CH-22
B4CH-23
B4CH-24

The sample set for the CTO 007 NAS Key West site, SDG BR018, consists of four (4) tissue environmental samples. All samples were analyzed for Target Compound List (TCL) pesticide/PCB organic compounds.

The samples were collected by Brown and Root Environmental on October 3th, 1996 and analyzed by Savannah Laboratories & Environmental Services, Inc. under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. Analyses were conducted using EPA SW-846 Method 8080 analytical and reporting protocols. The data were evaluated according to the following parameters:

*	•	Holding times
	•	Surrogate recoveries
*	•	Initial and continuing calibrations
	•	Laboratory and field blank analyses
*	•	Compound quantitation

The symbol (*) indicates that quality control criteria were not met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the review qualifications.

Pesticide/PCBs

The holding time from date of collection to date of extraction exceeded 14 days in all samples. Since there are no holding time requirements for tissue data, no action was taken.

The continuing calibration %Ds for acroclor 1260 were greater than 25%. Failure to meet this quality control criteria indicates that the laboratory's instruments could not achieve satisfactory sensitivity for these compounds, and therefore, the associated positive and nondetected results for these compounds could be compromised. No qualifying action was taken in this review.

The laboratory qualifier "P" was removed from all target compound data with a %D above 25% and less than 100% between positive results on columns 1 and 2.

All samples had high %Ds (greater than 100%) between positive results on columns 1 and 2 for several pesticide compounds. Positive results for these compounds were qualified as estimated "J".

No other problems were noted.

Additional Comments

None.

Executive Summary

Laboratory Performance: The continuing calibration %Ds for acroclor 1260 and chlorobenzilate were greater than 25%.

Other Factors Affecting Data Quality: Several pesticide/PCB compounds had high %Ds between positive results on columns 1 and 2.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/94), and the NEESA guidelines entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B; 6/88).

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Edward A. Inabinett

Brown and Root Environmental

Edward A. Inabinett
Engineer/Data Validator

R. Mark Kay for

Brown and Root Environmental

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

NAS KEY WEST

SDG BR018

TABLE 1 - RECOMMENDATION SUMMARY

Sample No.	PEST/PCB		
B4CH-17,-18,-21		$J^{1,6,8,9,10,11,15}$	
B4CH-22		$J^{1,2,3,4,5,6,7,8,15}$	
B4CH-23		$J^{3,6,8,12,15}$	
B4CH-24		$J^{10,13,14,15}$	

If the field is left blank, the qualifier is A - Accept all data.

J^1 - Accept data, but remove the laboratory qualifier "P" for beta-BHC as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^2 - Accept data, but remove the laboratory qualifier "P" for gamma-BHC as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^3 - Accept data, but qualify positive results for aldrin as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^4 - Accept data, but remove the laboratory qualifier "P" for endosulfan I as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^5 - Accept data, but qualify positive results for endrin as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^6 - Accept data, but qualify positive results for endosulfan II as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^7 - Accept data, but remove the laboratory qualifier "P" for methoxychlor as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^8 - Accept data, but qualify positive results for endrin aldehyde as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^9 - Accept data, but remove the laboratory qualifier "P" for heptachlor as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{10} - Accept data, but remove the laboratory qualifier "P" for endrin as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{11} - Accept data, but qualify positive results for 4,4'-DDT as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{12} - Accept data, but qualify positive results for methoxychlor as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{13} - Accept data, but remove the laboratory qualifier "P" for endosulfan II as a result of the %D between positive results on columns 1 and 2 being above 25% but less than 100%.

J^{14} - Accept data, but qualify positive results for 4,4'-DDD as estimated "J" as a result of %D greater than 100% between positive results on columns 1 and 2.

J^{15} - Positive results reported below the CRQL were estimated "J".

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO 007 - KEY WEST
SAVANNAH LABORATORIES

SDG: BR018

PESTICIDES/PCBs

Sample Number: B4CH-22
Sample Date: 10/3/96
Laboratory ID: S685902B-2
QC Type: CS
% Moisture: 0
Location: B4CH-22

	RESULT	QUAL	UNITS
4,4'-DDD	5.8	U	ug/kg
4,4'-DDE	5.8	U	ug/kg
4,4'-DDT	5.8	U	ug/kg
Aldrin	0.23	J	ug/kg
alpha-BHC	3	U	ug/kg
Aroclor-1016	58	U	ug/kg
Aroclor-1221	120	U	ug/kg
Aroclor-1232	58	U	ug/kg
Aroclor-1242	58	U	ug/kg
Aroclor-1248	58	U	ug/kg
Aroclor-1254	58	U	ug/kg
Aroclor-1260	58	U	ug/kg
beta-BHC	0.61	J	ug/kg
Chlordane	30	U	ug/kg
Chlorobenzilate	11	J	ug/kg
delta-BHC	3	U	ug/kg
Dieldrin	5.8	U	ug/kg
Endosulfan I	0.31	J	ug/kg
Endosulfan II	0.94	J	ug/kg
Endosulfan sulfate	5.8	U	ug/kg
Endrin	0.22	J	ug/kg
Endrin aldehyde	1.2	J	ug/kg
gamma-BHC	0.2	J	ug/kg
Heptachlor	0.23	J	ug/kg
Heptachlor epoxide	3	U	ug/kg
Isodrin	5.8	U	ug/kg
Methoxychlor	2.6	J	ug/kg
Toxaphene	300	U	ug/kg

Sample Number: B4CH-23
Sample Date: 10/3/96
Laboratory ID: S685902B-3
QC Type: CS
% Moisture: 0
Location: B4CH-23

	RESULT	QUAL	UNITS
4,4'-DDD	6.3	U	ug/kg
4,4'-DDE	6.3	U	ug/kg
4,4'-DDT	6.3	U	ug/kg
Aldrin	0.13	J	ug/kg
alpha-BHC	3.2	U	ug/kg
Aroclor-1016	63	U	ug/kg
Aroclor-1221	130	U	ug/kg
Aroclor-1232	63	U	ug/kg
Aroclor-1242	63	U	ug/kg
Aroclor-1248	63	U	ug/kg
Aroclor-1254	63	U	ug/kg
Aroclor-1260	63	U	ug/kg
beta-BHC	0.98	J	ug/kg
Chlordane	32	U	ug/kg
Chlorobenzilate	32	U	ug/kg
delta-BHC	3.2	U	ug/kg
Dieldrin	6.3	U	ug/kg
Endosulfan I	3.2	U	ug/kg
Endosulfan II	0.65	J	ug/kg
Endosulfan sulfate	6.3	U	ug/kg
Endrin	6.3	U	ug/kg
Endrin aldehyde	0.42	J	ug/kg
gamma-BHC	3.2	U	ug/kg
Heptachlor	3.2	U	ug/kg
Heptachlor epoxide	3.2	U	ug/kg
Isodrin	6.3	U	ug/kg
Methoxychlor	1.2	J	ug/kg
Toxaphene	320	U	ug/kg

Sample Number: B4CH-24
Sample Date: 10/3/96
Laboratory ID: S685902B-4
QC Type: CS
% Moisture: 0
Location: B4CH-24

	RESULT	QUAL	UN
4,4'-DDD	0.2	J	ug
4,4'-DDE	3.3	U	ug/
4,4'-DDT	3.3	U	ug/
Aldrin	1.7	U	ug/
alpha-BHC	1.7	U	ug/
Aroclor-1016	33	U	ug/
Aroclor-1221	66	U	ug/
Aroclor-1232	33	U	ug/
Aroclor-1242	33	U	ug/
Aroclor-1248	33	U	ug/
Aroclor-1254	33	U	ug/
Aroclor-1260	33	U	ug/
beta-BHC	1.7	U	ug/
Chlordane	17	U	ug/
Chlorobenzilate	17	U	ug/
delta-BHC	1.7	U	ug/
Dieldrin	3.3	U	ug/
Endosulfan I	1.7	U	ug/
Endosulfan II	0.18	J	ug/
Endosulfan sulfate	3.3	U	ug/
Endrin	0.081	J	ug/
Endrin aldehyde	3.3	U	ug/
gamma-BHC	1.7	U	ug/
Heptachlor	1.7	U	ug/
Heptachlor epoxide	1.7	U	ug/
Isodrin	3.3	U	ug/
Methoxychlor	17	U	ug/
Toxaphene	170	U	ug/