



CAFB 96

DEPARTMENT OF THE AIR FORCE

HEADQUARTERS 27th FIGHTER WING (ACC)
CANNON AIR FORCE BASE, NEW MEXICO

W. P. Ard, Colonel, USAF
Commander, 27th Support Group
100 S DL Ingram Blvd Suite 200
Cannon AFB NM 88103-5217

121 AUG 1996

Mr. Benito J. Garcia, Chief
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
2044 Galisteo Street
P O Box 26110
Santa Fe NM 87502



Dear Mr. Garcia

Enclosed are three ground water monitoring reports for Landfills 3 & 4, (Solid Waste Management Units SWMU 104 & 105), monitoring Well Q, and the sewage lagoons and monitoring Well P.

We are voluntarily monitoring wells N & O at Landfills 3 & 4 quarterly for a period of one year at which time we plan to go to twice a year if no chemicals of concern are found. We would like to point out that this quarter volatiles and semi-volatiles were non-detect. These had been of concern because of previous low levels of gasoline and diesel range organics.

Monitoring Well Q is a new upgradient well for Landfill 5, SWMU 113 screened across the water table. We are monitoring it on a quarterly basis to establish new background levels for Cell 3 of Landfill 5. No chemicals of concern were detected during this monitoring period.

The sewage lagoon wells, SWMUs 101 & 102, and Well P were sampled out of sequence to check on a lead and nitrate problem. The lead problem disappeared this time except for a very low level in the upgradient well. Nitrate remains a problem showing up at levels above the MCL in one sewage lagoon well and again in Well P. This nitrate problem may eventually disappear when our new sewage treatment plant is on line.

If you have any questions, please contact Mr. Sanford Hutsell at (505) 784-6378.

Sincerely

A handwritten signature in black ink, appearing to read 'W. P. ARD', written in a cursive style.

W. P. ARD, Colonel, USAF
Commander, 27th Support Group

Attachment:

Ground Water Monitoring Reports

cc:

NMED w/o encl (R. Kern)
NMED w/o encl (B. Hoditschek)
NMED GW Bureau (J. Jacobs)
EPA Region VI (D. Neleigh)
HQ ACC CES/ESVW w/o encl (M. Calvert)
HQ ACC CES/CEVC w/o encl (R. Shannon)

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Cannon Air Force Base, New Mexico

**RCRA Ground-Water Sampling at Sewage Lagoons
and Well P of Playa Lake**

Data Report for April 16-17, 1996 Sampling

Prepared for

**United States Air Force Air Combat Command
Cannon Air Force Base, New Mexico 88103**

June 20, 1996

Prepared by

**U.S. Geological Survey, Water Resources Division
4501 Indian School Road NE
Suite 200
Albuquerque, New Mexico 87110**

LIBRARY COPY



**FINAL ASSESSMENT MONITORING
QUARTERLY REPORT
FIRST QUARTER 1996**

FOR

**LONG-TERM MONITORING
LANDFILL NOs. 3 AND 4**

**CANNON AIR FORCE BASE
Clovis, New Mexico**

**Contract Number DACW45-94-D-0031
Project Number 95-321**

Prepared for

*U.S. Army Corps of Engineers
Omaha District*

Prepared by

*Foothill Engineering Consultants, Inc.
350 Indiana Street, Suite 415
Golden, Colorado 80401
(303) 278-0622*

June 1996



ACEC

LIBRARY COPY

**Assessment Monitoring
Quarterly Report
First Quarter 1996
Monitoring Well Q, Landfill No. 5
Cannon Air Force Base
Clovis, New Mexico**

Prepared for

U.S. Army Corps of Engineers
Omaha District

HLA Project No. 33364 3.4
Contract No. DACW45-94D-0044
Delivery Order No. 0007

June 18, 1996



Harding Lawson Associates
Engineering and Environmental Services
707 Seventeenth Street, Suite 2400
Denver, CO 80202 - (303) 292-5365

Cannon Air Force Base, New Mexico

RCRA Ground-Water Sampling at Sewage Lagoons
and Well P of Playa Lake

Data Report for April 16-17, 1996 Sampling

Prepared for

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Albuquerque, New Mexico 87110

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EXECUTIVE SUMMARY

The U.S. Geological Survey (USGS), Water Resources Division and the U.S. Air Force Air Combat Command (ACC) have a memorandum of understanding that addresses the USGS assisting any ACC base in their hydrology or environmental programs. The USGS has agreed to assist Cannon Air Force Base (CAFB), an ACC base, in their RCRA ground-water sampling program. Cannon AFB is located in east-central New Mexico about 7 miles west of Clovis as shown on Figure 1. The ground-water sampling is at the sewage lagoons and at the Playa Lake on the east side of the base as shown on Figure 2. The monitoring is conducted as part of the July 13, 1990 Compliance Agreement between CAFB and the New Mexico Environment Department (NMED).

This report presents the data resulting from sampling four wells around the sewage lagoons and one well at the Playa lake (figure 2), CAFB during April 16-17, 1996. The monitoring wells sampled at the sewage lagoons are well E (upgradient), and downgradient wells F, G, and H as shown in figure 3. Only one well (Well P) was sampled near the Playa Lake. All five wells were sampled for Nitrate (Method E353.2/ E354.1), Total and dissolved metals for twenty-three metals (Methods SW3005/SW6010-Trace). Concentrations of detected analytes in ground-water for the monitoring wells around the sewage lagoons and for the Playa Lake are summarized in table 1. The monitoring well identification report are presented in appropriate NMED forms following table 1. Quanterra Environmental Services is the USGS contract laboratory in Arvada, Colorado. The analytical results from Quanterra Environmental Services Laboratory are listed in Appendix I. The Quality Control Report for the analytical results from Quanterra is in Appendix II. Field activities, observations, and water-quality measurements for the April 16-17, 1996 ground-water monitoring are in Appendix III.

As shown in table 1, the largest concentration (25.8 mg/L) of nitrate was detected in water from well P (downgradient from the sewage lagoons). Water from well G had 15 mg/L, and water from well F had 9.2 mg/L of nitrate. The maximum contaminant level (MCL) for EPA National Primary Drinking Water Regulation for nitrate is 10 mg/L. Lead (total) was detected in water from well E only at concentration of 0.0045 mg/L. The MCL for lead is 0.015 mg/L.

As part of the quality assurance and quality control (QA/QC) procedures for the sewage lagoons and the Playa Lake sites, equipment blank, duplicate, matrix spike, and matrix spike duplicate samples were collected. 0.0042 mg/L of lead (total) and 0.014 mg/L of zinc (total) were detected in an equipment blank for this sampling

period. The data results of associated samples that are similar to the equipment blank should be used with caution and note that similar results were detected also in the equipment blank. No other target parameters other than the parameters associated with the duplicate analysis were detected in the QA/QC samples mentioned above.

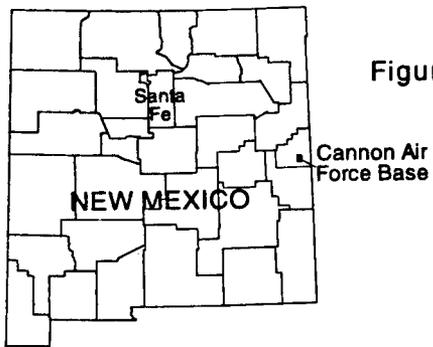
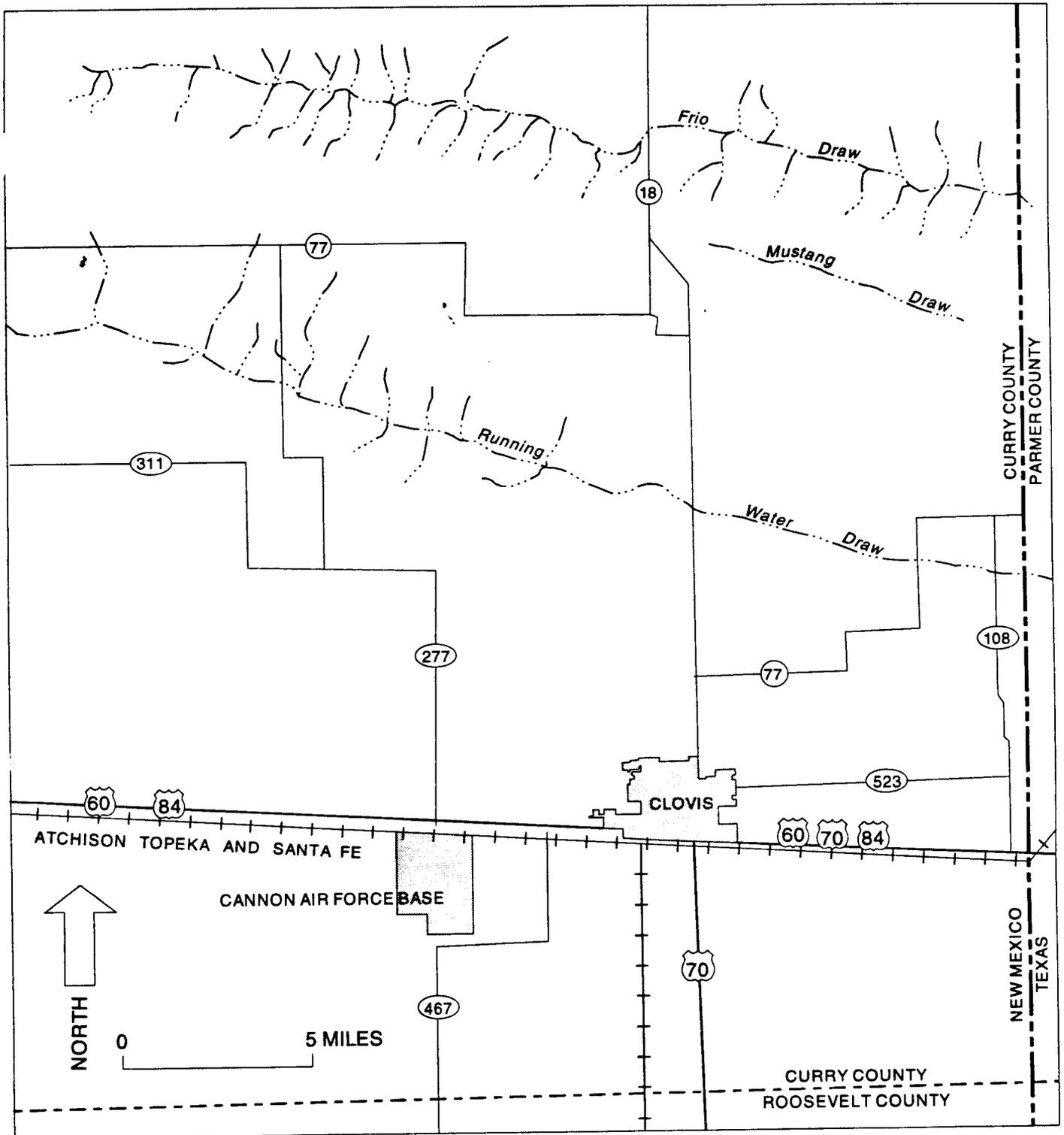


Figure 1.--Location of Cannon Air Force Base, New Mexico.

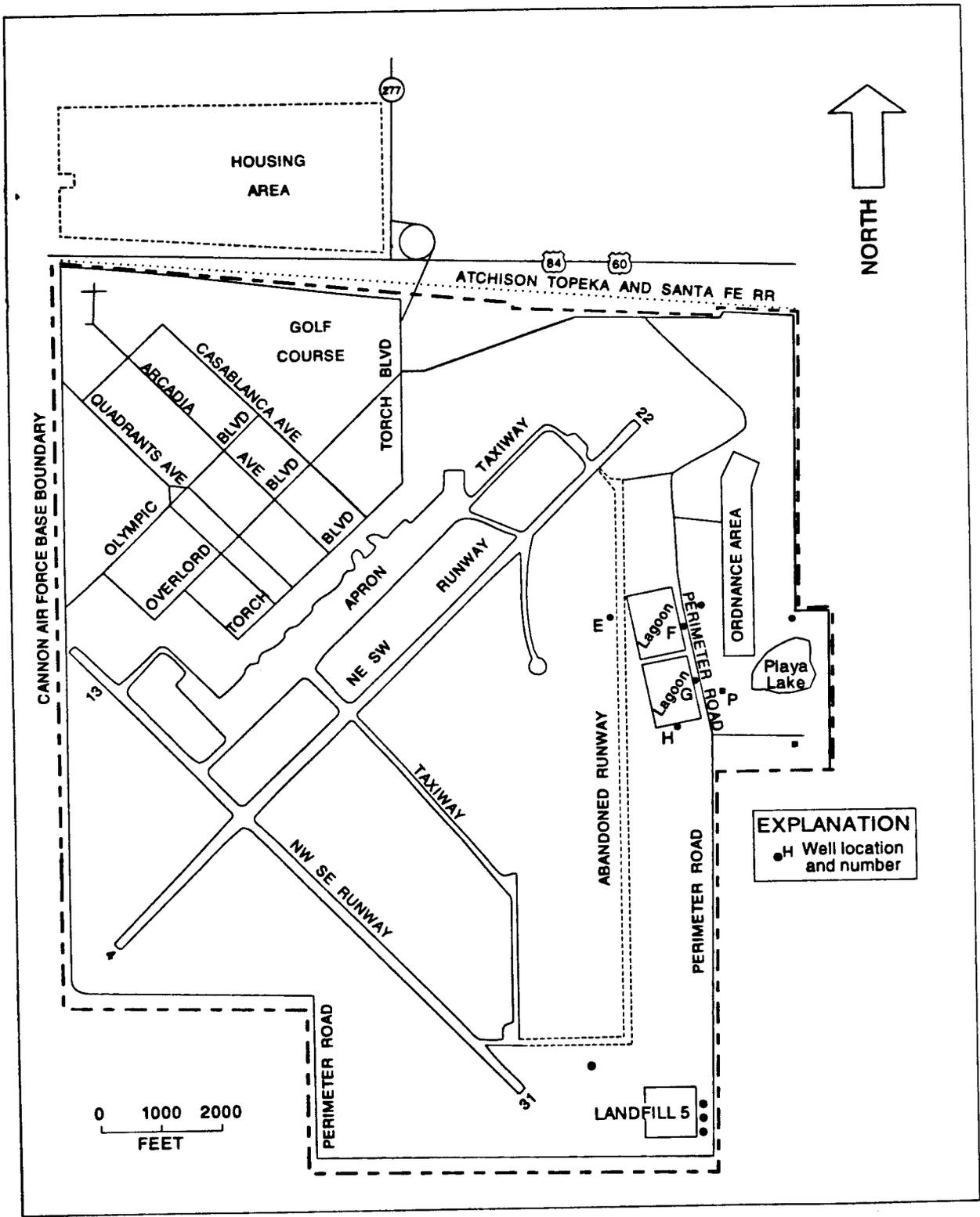


Figure 2.--Cannon Air Force Base and location of sewage lagoons and Playa Lake.

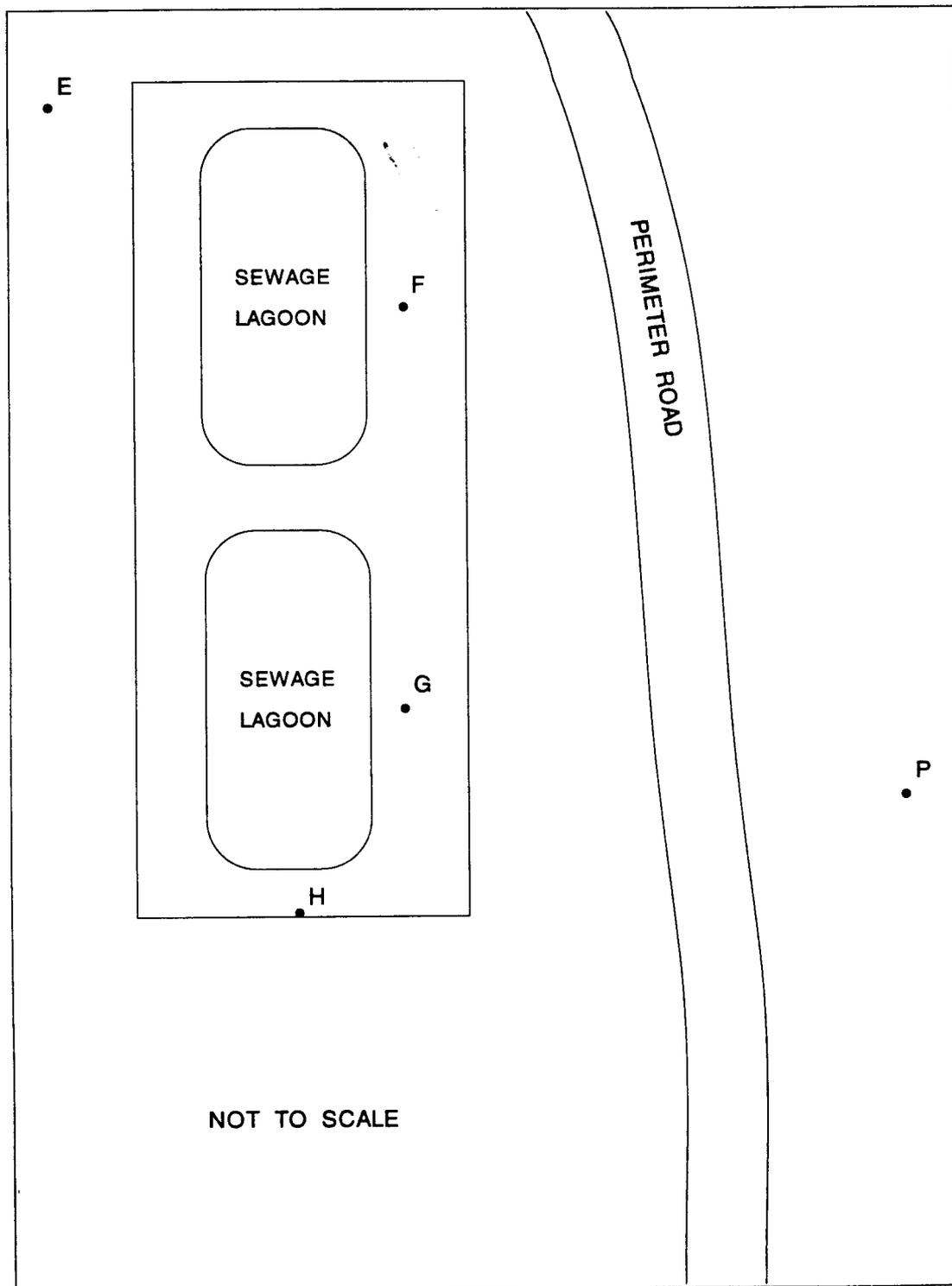


Figure 3.--Location of monitoring wells around the sewage lagoons and well P of Playa Lake.

Table 1. Summary of concentrations of analytes in ground-water from wells E, F, G, H around the sewage lagoons, and well P at Playa Lake for samples collected on April 16-17, 1996, Cannon Air Force Base, New Mexico. [ND, Not Detected; RL, Reporting Limit; t, Sample diluted due to the concentration of target compounds.]

Well/sample ID: Date sampled:	E/CAFB-E-0496-1 4-16-96		F/CAFB-F-0496-1 4-16-96		G/CAFB-G-0496-1 4-17-96		G/CAFB-G-0496-2 4-17-96 Duplicate		H/CAFB-H-0496-1 4-17-96		P/CAFB-P-0496-1 4-16-96	
Analytes and Method	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Metals, Total (mg/L)												
Calcium SW6010	42.3	5.0	84.0	5.0	95.0	5.0	98.1	5.0	47.1	5.0	102	5.0
Iron SW6010	0.1	0.04	ND	0.04	0.079	0.04	0.097	0.04	1.2	0.04	ND	0.04
Lead SW6010-Trace	0.0045	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003
Magnesium SW6010	36.9	5.0	78.3	5.0	87.7	5.0	91.8	5.0	43.1	5.0	100	5.0
Manganese SW6010	ND	0.01	ND	0.01	ND	0.01	ND	0.01	0.023	0.01	ND	0.01
Potassium SW6010	6.2	5.0	9.4	5.0	9.9	5.0	10.3	5.0	7.5	5.0	9.8	5.0
Selenium SW6010-Trace	ND	0.005	0.0085	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
Sodium SW6010	53.1	5.0	47.0	5.0	66.1	5.0	67.9	5.0	53.8	5.0	139	5.0
Zinc SW6010	0.017	0.01	ND	0.01	0.018	0.01	0.022	0.01	0.051	0.01	0.02	0.01
Metals, Dissolved (mg/L)												
Calcium SW6010	43.7	5.0	89.0	5.0	100	5.0	101	5.0	48.4	5.0	107	5.0
Magnesium SW6010	38.3	5.0	81.1	5.0	97.6	5.0	98.5	5.0	46.3	5.0	103	5.0
Potassium SW6010	7.2	5.0	10.2	5.0	12.4	5.0	10.9	5.0	8.0	5.0	10.0	5.0
Selenium SW6010-Trace	ND	0.005	0.008	0.005	0.0088	0.005	0.0068	0.005	0.0064	0.005	ND	0.005
Sodium SW6010	57.7	5.0	50.5	5.0	73.4	5.0	71.2	5.0	56.3	5.0	137	5.0
General Inorganics (mg/L)												
Nitrate + Nitrite E353.2	2.1	0.1	9.2 t	0.5	15.0 t	1.0	14.7 t	2.0	1.2	0.1	25.8 t	2.0
Nitrate E353.2/354	2.1	0.1	9.2	0.5	15.0	1.0	14.7	2.0	1.2	0.1	25.8	2.0

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
 HAZARDOUS & RADIOACTIVE MATERIALS BUREAU
 525 CAMINO de LOS MARQUEZ, SUITE #4
 SANTA FE, NEW MEXICO 87502

FACILITY NAME Cannon Air Force Base

EPA I.D. NUMBER NM 7572124454

COUNTY Curry

WELL NUMBER E

WELL LOCATION (LONGITUDE) 103 ° 18 ' 24.5 ''

WELL LOCATION (LATITUDE) 34 ° 23 ' 28.8 ''

AQUIFER NAME Ogallala

AQUIFER CONFINED UNCONFINED X

WELL INSTALLATION DATE 111785

DRILLING METHOD HYDRT

INNER CASING DIAMETER 4"

BOREHOLE DIAMETER 8"

CASING MATERIAL PVC

METHOD OF DEVELOPMENT AIRFT

ELEV BOTTOM OF BOREHOLE 3908.12

ELEV BOTTOM OF WELL CASING 3911.12

ELEV BOTTOM OF SCREENED INT 3911.12

ELEV OF TOP OF SCREENED INT 3926.12

SURVEYED ELEV OF CASING TOP 4281.12

DATE OF REPORT 14 Feb 89 SIGNATURE _____

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
 HAZARDOUS & RADIOACTIVE MATERIALS BUREAU
 525 CAMINO de LOS MARQUEZ, SUITE #4
 SANTA FE, NEW MEXICO 87502

FACILITY NAME Cannon Air Force Base

EPÄ I.D. NUMBER Nm 7572124454

COUNTY Curry

WELL NUMBER G

WELL LOCATION (LONGITUDE) 103 ° 18 ' 08 ''

WELL LOCATION (LATITUDE) 34 ° 23 ' 13.4 ''

AQUIFER NAME Ogallala

AQUIFER CONFINED UNCONFINED X

WELL INSTALLATION DATE 111085

DRILLING METHOD HYDRT

INNER CASING DIAMETER 4"

BOREHOLE DIAMETER 8"

CASING MATERIAL PVC

METHOD OF DEVELOPMENT AIRFT

ELEV BOTTOM OF BOREHOLE 3907.99

ELEV BOTTOM OF WELL CASING 3907.90

ELEV BOTTOM OF SCREENED INT 3907.99

ELEV OF TOP OF SCREENED INT 3922.99

SURVEYED ELEV OF CASING TOP 4279.99

DATE OF REPORT 24 Feb 89 SIGNATURE _____

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
 HAZARDOUS & RADIOACTIVE MATERIALS BUREAU
 525 CAMINO de LOS MARQUEZ, SUITE #4
 SANTA FE, NEW MEXICO 87502

FACILITY NAME Cannon Air Force Base

EPÀ I.D. NUMBER NM 7572124454

COUNTY Curry

WELL NUMBER H

WELL LOCATION (LONGITUDE) 103 ° 18 ' 16.8 ''

WELL LOCATION (LATITUDE) 34 ° 23 ' 07 ''

AQUIFER NAME Ogallala

AQUIFER CONFINED UNCONFINED X

WELL INSTALLATION DATE 111885

DRILLING METHOD HYDRT

INNER CASING DIAMETER 4"

BOREHOLE DIAMETER 8"

CASING MATERIAL PVC

METHOD OF DEVELOPMENT AIRFT

ELEV BOTTOM OF BOREHOLE 3901.15

ELEV BOTTOM OF WELL CASING 3901.15

ELEV BOTTOM OF SCREENED INT 3901.15

ELEV OF TOP OF SCREENED INT 3921.15

SURVEYED ELEV OF CASING TOP 4276.15

DATE OF REPORT 24 Feb 89 SIGNATURE _____

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS AND RADIOACTIVE MATERIALS BUREAU
525 CAMINO DE LOS MARQUES, SUITE 4
SANTA FE, NEW MEXICO 87502

FACILITY NAME Cannon Air Force Base

EPA I.D. NUMBER _____

COUNTY Curry

WELL NUMBER P

WELL LOCATION (LONGITUDE) 103° 18' 06"

WELL LOCATION (LATITUDE) 34° 23' 09"

AQUIFER NAME Ogalalla

AQUIFER CONFINED _____ UNCONFINED X

WELL INSTALLATION DATE 07-16-95

DRILLING METHOD HYDRT

INNER CASING DIAMETER 4"

BOREHOLE DIAMETER 8"

CASING MATERIAL PVC

METHOD OF DEVELOPMENT BALD

ELEV BOTTOM OF BOREHOLE 3971.90

ELEV BOTTOM OF WELL CASING 3976.90

ELEV BOTTOM OF SCREENED INT 3981.90

ELEV OF TOP OF SCREENED INT 4001.90

SURVEYED ELEV OF CASING TOP 4273.39

DATE OF REPORT 10-30-95 SIGNATURE *Jerry D. Larson*

NAME (TYPED) Jerry D. Larson

APPENDIX - I

Quanterra Incorporated
4955 Yarrow Street
Arvada, Colorado 80002

303 421-6611 Telephone
303 431-7171 Fax

ANALYTICAL RESULTS
FOR
U.S. GEOLOGICAL SURVEY
QUANTERRA NO. 048350

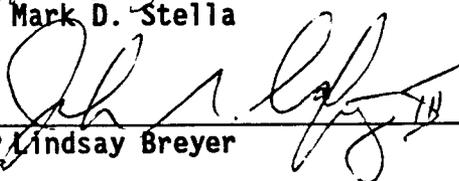
MAY 23, 1996

Prepared by:



Mark D. Stella

Reviewed by:



Lindsay Breyer

I. OVERVIEW

On April 17, 1996, Quanterra Environmental Services, Denver received four aqueous samples from the U.S. Geological Survey.

This report presents the analytical results as well as supporting information to aid in the evaluation and interpretation of the data and is arranged in the following order:

- I. Overview
- II. Sample Description Information/Analytical Test Requests
- III. Analytical Results
- IV. Quality Control Report

With the exceptions noted on the data sheets, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory QC samples analyzed in conjunction with the samples in this project were within established control limits.

II. SAMPLE DESCRIPTION INFORMATION/ANALYTICAL TEST REQUESTS

Sample Description Information:

The Sample Description Information lists all of the samples received in this project together with the internal laboratory identification number assigned for each sample. Each project received at Quanterra's Denver laboratory is assigned a unique six digit number. Samples within the project are numbered sequentially. The laboratory identification number is a combination of the six digit project code and the sample sequence number.

Also given in the Sample Description Information is the Sample Type (matrix), Date of Sampling (if known) and Date of Receipt at the laboratory.

Analytical Test Requests:

The Analytical Test Requests lists the analyses that were performed on each sample. The Custom Test column indicates where tests have been modified to conform to the specific requirements of this project.

SAMPLE DESCRIPTION INFORMATION
for
U.S. Geological Survey

Lab ID	Client ID	Matrix	Sampled Date	Time	Received Date
048350-0001-SA	CAFB-E-0496-1	AQUEOUS	16 APR 96	09:05	17 APR 96
048350-0002-SA	CAFB-F-0496-1	AQUEOUS	16 APR 96	12:40	17 APR 96
048350-0003-EB	CAFB-F-0496-2	AQUEOUS	16 APR 96	10:00	17 APR 96
048350-0004-SA	CAFB-P-0496-1	AQUEOUS	16 APR 96	14:20	17 APR 96

ANALYTICAL TEST REQUESTS
for
U.S. Geological Survey

Lab ID: 048350	Group Code	Analysis Description	Custom Test?
0001 - 0004	A	Nitrate Plus Nitrite	N
		Nitrite, as Nitrogen	N
		ICP Suite: Air Force	Y
		Prep - Total Metals, ICP	N
		ICP Metals (Total) by Trace ICP	N
		ICP Suite: Air Force	Y
		ICP Metals (Dissolved) by Trace ICP	N
		Nitrate, as Nitrogen by Calculation	N
		ICP Metals (Dissolved by Digestion) by Trace ICP	N
		Prep - Filtered/Dissolved, ICP	N

III. ANALYTICAL RESULTS

The analytical results for this project are presented in the following data tables. Each data table includes sample identification information, and when available and appropriate, dates sampled, received, authorized, prepared and analyzed. The authorization date is the date when the project was defined by the client such that laboratory work could begin. The date prepared is typically the date an extraction or digestion was initiated. For volatile organic compounds in water, the date prepared is the date the screening of the sample was performed.

Data sheets contain a listing of the parameters measured in each test, the analytical results and the Quanterra reporting limit. Reporting limits are adjusted to reflect dilution of the sample, when appropriate. Solid and waste samples are reported on an "as received" basis, i.e. no correction is made for moisture content.

Quanterra does not routinely blank-correct analytical data. Uncorrected analytical results are reported, along with associated blank results, for all organic and metals analyses. Analytical results and blank results are reported for conventional inorganic parameters as specified in the method.

The analytical data reported are subject to the following limitations of the analytical methodology:

Metals:

All nominal reporting limits for metals have been established from instrument detection limit (IDL) and method detection limit (MDL) evaluations and represent the level above which reliable data can be routinely obtained. On a periodic basis, low-level standards are analyzed seven times on three non-consecutive days on each instrument. The standard deviations of the three runs are summed to yield the IDL. MDL studies are performed on an annual basis in accordance with 40 CFR 136 Appendix B. Nominal reporting limits are generally 2-5 times the IDL or MDL (consistent with the American Chemical Society definition for the Limit of Quantification). IDL and MDL studies for metals are necessarily performed on reagent water and do not account for matrix effects. Elevation of the reporting limits above the nominal levels are sometimes required as discussed below.

Reporting limits for metals analyzed by Inductively Coupled Plasma (ICP) are typically raised only for dilution due to an analyte exceeding the instrument linear range. Background and interelement interferences are corrected automatically and do not require dilution.

Metals analyzed by Graphite Furnace Atomic Absorption (GFAA) are subject to matrix interferences. Consequently, Quanterra Environmental Services, Denver laboratory's protocol is to analyze a spiked aliquot with every sample. The severity of the interference, based upon analyte level and spike recovery, is assessed against specific criteria and the need for an elevated reporting limit or dilution is determined.

The analysis of mercury by Cold Vapor Atomic Absorption (CVAA) is generally free from matrix interferences. As with ICP, reporting limits are raised only for dilution due to a sample concentration exceeding the linear range of the instrument.

Footnotes and Data Qualifiers

The data sheets contained in this report may contain a variety of footnotes and data qualifiers. Those used to indicate the confidence level for Tentatively Identified Compounds (GC/MS methods) are described above. Other footnotes are used with specific tests; for example, footnotes used with the GC/FID Petroleum Hydrocarbon methods to indicate (in the analysts judgment) the product that appears to be present. Finally, there are a number of general qualifiers that serve to identify problems and pertinent observations made during sample analysis that are not discussed in the Overview. These are described below:

B Compound is also detected in the blank.

The indicated compound was detected in the sample as well as the method blank. Please note that the B flag is not used when the sample result is ND (Not Detected).

G Reporting limit raised due to the matrix of the sample.

Indicates that reporting limits were raised due to the presence of non-target compounds or other matrix interferences. The sample may or may not have been diluted. For inorganic methods, the footnote applies only to the flagged analyte. For organic methods, the footnote pertains to all analytes determined by the method.

T Preferred values unless footnoted on secondary column test.

This footnote is used with GC tests to indicate the primary column results. The footnote will be listed only for the first compound but pertains to all analytes determined by the method. It is used in conjunction the footnote V.

V Secondary column is the preferred value.

This footnote is used for GC tests in conjunction the T footnote. It indicates that the value from the second column is preferred over the primary column result and pertains only to the indicated compound.

t Sample diluted due to the concentration of target compounds.

Indicates that reporting limits were raised due to the presence of target analytes outside the calibration range of the method. For multi-analyte methods, the footnote will appear only for the first analyte but pertains to all analytes determined by the method.

**Metals
Total Metals**

Client Name: U.S. Geological Survey
 Contract ID: CAFB-E-0496-1
 Case ID: 048350-0001-SA
 Matrix: AQUEOUS
 Authorized: 17 APR 96

Sampled: 16 APR 96
 Prepared: See Below

Received: 17 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Aluminum	ND		1.0	0.20	mg/L	6010	18 APR 96	19 APR 96
Barium	ND		1.0	0.10	mg/L	6010	18 APR 96	19 APR 96
Beryllium	ND		1.0	0.0020	mg/L	6010	18 APR 96	19 APR 96
Calcium	42.3		1.0	5.0	mg/L	6010	18 APR 96	19 APR 96
Chromium	ND		1.0	0.030	mg/L	6010	18 APR 96	19 APR 96
Cobalt	ND		1.0	0.040	mg/L	6010	18 APR 96	19 APR 96
Copper	ND		1.0	0.030	mg/L	6010	18 APR 96	19 APR 96
Iron	0.10		1.0	0.040	mg/L	6010	18 APR 96	19 APR 96
Magnesium	36.9		1.0	5.0	mg/L	6010	18 APR 96	19 APR 96
Manganese	ND		1.0	0.010	mg/L	6010	18 APR 96	19 APR 96
Molybdenum	ND		1.0	0.040	mg/L	6010	18 APR 96	19 APR 96
Nickel	ND		1.0	0.040	mg/L	6010	18 APR 96	19 APR 96
Potassium	6.2		1.0	5.0	mg/L	6010	18 APR 96	19 APR 96
Silver	ND		1.0	0.030	mg/L	6010	18 APR 96	19 APR 96
Sodium	53.1		1.0	5.0	mg/L	6010	18 APR 96	19 APR 96
Vanadium	ND		1.0	0.040	mg/L	6010	18 APR 96	19 APR 96
Zinc	0.017		1.0	0.010	mg/L	6010	18 APR 96	19 APR 96

ND = Not Detected

Reported By: Mark Woolley

Approved By: Richard Persichitte

Trace ICP Metals
Total Metals

Client Name: U.S. Geological Survey
 ID: CAFB-E-0496-1
 L.O.D.: 048350-0001-SA
 Matrix: AQUEOUS
 Authorized: 17 APR 96

Sampled: 16 APR 96
 Prepared: See Below

Received: 17 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Antimony	ND		1.0	0.010	mg/L	6010	18 APR 96	06 MAY 96
Arsenic	ND		1.0	0.010	mg/L	6010	18 APR 96	06 MAY 96
Cadmium	ND		1.0	0.0050	mg/L	6010	18 APR 96	06 MAY 96
Lead	0.0045		1.0	0.0030	mg/L	6010	18 APR 96	06 MAY 96
Selenium	ND		1.0	0.0050	mg/L	6010	18 APR 96	06 MAY 96
Thallium	ND		1.0	0.010	mg/L	6010	18 APR 96	06 MAY 96

ND = Not Detected

Reported By: Mark Woolley

Approved By: Richard Persichitte

**Metals
Dissolved Metals**

Client Name: U.S. Geological Survey
 ID: CAFB-E-0496-1
 ID: 048350-0001-SA
 Matrix: AQUEOUS
 Authorized: 17 APR 96

Sampled: 16 APR 96
 Prepared: See Below

Received: 17 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Aluminum	ND		1.0	0.20	mg/L	6010	NA	07 MAY 96
Barium	ND		1.0	0.10	mg/L	6010	NA	07 MAY 96
Beryllium	ND		1.0	0.0020	mg/L	6010	NA	07 MAY 96
Calcium	43.7		1.0	5.0	mg/L	6010	NA	07 MAY 96
Chromium	ND		1.0	0.030	mg/L	6010	NA	07 MAY 96
Cobalt	ND		1.0	0.040	mg/L	6010	NA	07 MAY 96
Copper	ND		1.0	0.030	mg/L	6010	NA	07 MAY 96
Iron	ND		1.0	0.040	mg/L	6010	NA	07 MAY 96
Magnesium	38.3		1.0	5.0	mg/L	6010	NA	07 MAY 96
Manganese	ND		1.0	0.010	mg/L	6010	NA	07 MAY 96
Molybdenum	ND		1.0	0.040	mg/L	6010	NA	07 MAY 96
Nickel	ND		1.0	0.040	mg/L	6010	NA	07 MAY 96
Potassium	7.2		1.0	5.0	mg/L	6010	NA	07 MAY 96
Silver	ND		1.0	0.030	mg/L	6010	NA	07 MAY 96
Sodium	57.7		1.0	5.0	mg/L	6010	NA	07 MAY 96
Vanadium	ND		1.0	0.040	mg/L	6010	NA	07 MAY 96
Zinc	ND		1.0	0.010	mg/L	6010	NA	07 MAY 96

ND = Not Detected

Reported By: Mark Woolley

Approved By: Richard Persichitte

Trace ICP Metals
Dissolved Metals

Client Name: U.S. Geological Survey
 Project ID: CAFB-E-0496-1
 Location: 048350-0001-SA
 Matrix: AQUEOUS
 Authorized: 17 APR 96

Sampled: 16 APR 96
 Prepared: See Below

Received: 17 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Antimony	ND		1.0	0.010	mg/L	6010	19 MAY 96	20 MAY 96
Arsenic	ND		1.0	0.010	mg/L	6010	19 MAY 96	20 MAY 96
Cadmium	ND		1.0	0.0050	mg/L	6010	19 MAY 96	20 MAY 96
Lead	ND	G	1.0	0.0039	mg/L	6010	19 MAY 96	20 MAY 96
Selenium	ND		1.0	0.0050	mg/L	6010	19 MAY 96	20 MAY 96
Thallium	ND		1.0	0.010	mg/L	6010	19 MAY 96	20 MAY 96

G = Reporting limit raised due to the matrix of the sample.
 ND = Not Detected

Reported By: Gerald Martinez

Approved By: Richard Persichitte

Metals
Total Metals

Client Name: U.S. Geological Survey
 ID: CAFB-F-0496-1
 ID: 048350-0002-SA
 Matrix: AQUEOUS
 Authorized: 17 APR 96

Sampled: 16 APR 96
 Prepared: See Below

Received: 17 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Aluminum	ND		1.0	0.20	mg/L	6010	18 APR 96	19 APR 96
Barium	ND		1.0	0.10	mg/L	6010	18 APR 96	19 APR 96
Beryllium	ND		1.0	0.0020	mg/L	6010	18 APR 96	19 APR 96
Calcium	84.0		1.0	5.0	mg/L	6010	18 APR 96	19 APR 96
Chromium	ND		1.0	0.030	mg/L	6010	18 APR 96	19 APR 96
Cobalt	ND		1.0	0.040	mg/L	6010	18 APR 96	19 APR 96
Copper	ND		1.0	0.030	mg/L	6010	18 APR 96	19 APR 96
Iron	ND		1.0	0.040	mg/L	6010	18 APR 96	19 APR 96
Magnesium	78.3		1.0	5.0	mg/L	6010	18 APR 96	19 APR 96
Manganese	ND		1.0	0.010	mg/L	6010	18 APR 96	19 APR 96
Molybdenum	ND		1.0	0.040	mg/L	6010	18 APR 96	19 APR 96
Nickel	ND		1.0	0.040	mg/L	6010	18 APR 96	19 APR 96
Potassium	9.4		1.0	5.0	mg/L	6010	18 APR 96	19 APR 96
Silver	ND		1.0	0.030	mg/L	6010	18 APR 96	19 APR 96
Sodium	47.0		1.0	5.0	mg/L	6010	18 APR 96	19 APR 96
Vanadium	ND		1.0	0.040	mg/L	6010	18 APR 96	19 APR 96
Zinc	ND		1.0	0.010	mg/L	6010	18 APR 96	19 APR 96

ND = Not Detected

Reported By: Mark Woolley

Approved By: Richard Persichitte

Trace ICP Metals
Total Metals

Client Name: U.S. Geological Survey
 Sample ID: CAFB-F-0496-1
 Lab ID: 048350-0002-SA
 Matrix: AQUEOUS
 Authorized: 17 APR 96

Sampled: 16 APR 96
 Prepared: See Below

Received: 17 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Antimony	ND		1.0	0.010	mg/L	6010	18 APR 96	06 MAY 96
Arsenic	ND		1.0	0.010	mg/L	6010	18 APR 96	06 MAY 96
Cadmium	ND		1.0	0.0050	mg/L	6010	18 APR 96	06 MAY 96
Lead	ND		1.0	0.0030	mg/L	6010	18 APR 96	06 MAY 96
Selenium	0.0085		1.0	0.0050	mg/L	6010	18 APR 96	06 MAY 96
Thallium	ND		1.0	0.010	mg/L	6010	18 APR 96	06 MAY 96

ND = Not Detected

Reported By: Mark Woolley

Approved By: Richard Persichitte

**Metals
Dissolved Metals**

Client Name: U.S. Geological Survey
 Contract ID: CAFB-F-0496-1
 Order ID: 048350-0002-SA
 Matrix: AQUEOUS
 Authorized: 17 APR 96

Sampled: 16 APR 96
 Prepared: See Below

Received: 17 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Aluminum	ND		1.0	0.20	mg/L	6010	NA	07 MAY 96
Barium	ND		1.0	0.10	mg/L	6010	NA	07 MAY 96
Beryllium	ND		1.0	0.0020	mg/L	6010	NA	07 MAY 96
Calcium	89.0		1.0	5.0	mg/L	6010	NA	07 MAY 96
Chromium	ND		1.0	0.030	mg/L	6010	NA	07 MAY 96
Cobalt	ND		1.0	0.040	mg/L	6010	NA	07 MAY 96
Copper	ND		1.0	0.030	mg/L	6010	NA	07 MAY 96
Iron	ND		1.0	0.040	mg/L	6010	NA	07 MAY 96
Magnesium	81.1		1.0	5.0	mg/L	6010	NA	07 MAY 96
Manganese	ND		1.0	0.010	mg/L	6010	NA	07 MAY 96
Molybdenum	ND		1.0	0.040	mg/L	6010	NA	07 MAY 96
Nickel	ND		1.0	0.040	mg/L	6010	NA	07 MAY 96
Potassium	10.2		1.0	5.0	mg/L	6010	NA	07 MAY 96
Silver	ND		1.0	0.030	mg/L	6010	NA	07 MAY 96
Sodium	50.5		1.0	5.0	mg/L	6010	NA	07 MAY 96
Vanadium	ND		1.0	0.040	mg/L	6010	NA	07 MAY 96
Zinc	ND		1.0	0.010	mg/L	6010	NA	07 MAY 96

ND = Not Detected

Reported By: Mark Woolley

Approved By: Richard Persichitte

Trace ICP Metals
Dissolved Metals

Client Name: U.S. Geological Survey
 Contract ID: CAFB-F-0496-1
 Order #: 048350-0002-SA
 Matrix: AQUEOUS
 Authorized: 17 APR 96

Sampled: 16 APR 96
 Prepared: See Below

Received: 17 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Antimony	ND		1.0	0.010	mg/L	6010	19 MAY 96	20 MAY 96
Arsenic	ND		1.0	0.010	mg/L	6010	19 MAY 96	20 MAY 96
Cadmium	ND		1.0	0.0050	mg/L	6010	19 MAY 96	20 MAY 96
Lead	ND	G	1.0	0.0042	mg/L	6010	19 MAY 96	20 MAY 96
Selenium	0.0080		1.0	0.0050	mg/L	6010	19 MAY 96	20 MAY 96
Thallium	ND		1.0	0.010	mg/L	6010	19 MAY 96	20 MAY 96

G = Reporting limit raised due to the matrix of the sample.
 ND = Not Detected

Reported By: Gerald Martinez

Approved By: Richard Persichitte

**Metals
Total Metals**

Client Name: U.S. Geological Survey
 ID: CAFB-F-0496-2
 ID: 048350-0003-EB
 Matrix: AQUEOUS
 Authorized: 17 APR 96

Sampled: 16 APR 96
 Prepared: See Below

Received: 17 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Aluminum	ND		1.0	0.20	mg/L	6010	18 APR 96	19 APR 96
Barium	ND		1.0	0.10	mg/L	6010	18 APR 96	19 APR 96
Beryllium	ND		1.0	0.0020	mg/L	6010	18 APR 96	19 APR 96
Calcium	ND		1.0	5.0	mg/L	6010	18 APR 96	19 APR 96
Chromium	ND		1.0	0.030	mg/L	6010	18 APR 96	19 APR 96
Cobalt	ND		1.0	0.040	mg/L	6010	18 APR 96	19 APR 96
Copper	ND		1.0	0.030	mg/L	6010	18 APR 96	19 APR 96
Iron	ND		1.0	0.040	mg/L	6010	18 APR 96	19 APR 96
Magnesium	ND		1.0	5.0	mg/L	6010	18 APR 96	19 APR 96
Manganese	ND		1.0	0.010	mg/L	6010	18 APR 96	19 APR 96
Molybdenum	ND		1.0	0.040	mg/L	6010	18 APR 96	19 APR 96
Nickel	ND		1.0	0.040	mg/L	6010	18 APR 96	19 APR 96
Potassium	ND		1.0	5.0	mg/L	6010	18 APR 96	19 APR 96
Silver	ND		1.0	0.030	mg/L	6010	18 APR 96	19 APR 96
Sodium	ND		1.0	5.0	mg/L	6010	18 APR 96	19 APR 96
Vanadium	ND		1.0	0.040	mg/L	6010	18 APR 96	19 APR 96
Zinc	0.014		1.0	0.010	mg/L	6010	18 APR 96	19 APR 96

ND = Not Detected

Reported By: Mark Woolley

Approved By: Richard Persichitte

**Trace ICP Metals
Total Metals**

Client Name: U.S. Geological Survey
 Contract ID: CAFB-F-0496-2
 Lab ID: 048350-0003-EB
 Matrix: AQUEOUS
 Authorized: 17 APR 96

Sampled: 16 APR 96
 Prepared: See Below

Received: 17 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Antimony	ND		1.0	0.010	mg/L	6010	18 APR 96	06 MAY 96
Arsenic	ND		1.0	0.010	mg/L	6010	18 APR 96	06 MAY 96
Cadmium	ND		1.0	0.0050	mg/L	6010	18 APR 96	06 MAY 96
Lead	0.0042		1.0	0.0030	mg/L	6010	18 APR 96	06 MAY 96
Selenium	ND		1.0	0.0050	mg/L	6010	18 APR 96	06 MAY 96
Thallium	ND		1.0	0.010	mg/L	6010	18 APR 96	06 MAY 96

ND = Not Detected

Reported By: Mark Woolley

Approved By: Richard Persichitte

**Metals
Dissolved Metals**

Client Name: U.S. Geological Survey
 ID: CAFB-F-0496-2
 ID: 048350-0003-EB
 Matrix: AQUEOUS
 Authorized: 17 APR 96

Sampled: 16 APR 96
 Prepared: See Below

Received: 17 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Aluminum	ND		1.0	0.20	mg/L	6010	NA	07 MAY 96
Barium	ND		1.0	0.10	mg/L	6010	NA	07 MAY 96
Beryllium	ND		1.0	0.0020	mg/L	6010	NA	07 MAY 96
Calcium	ND		1.0	5.0	mg/L	6010	NA	07 MAY 96
Chromium	ND		1.0	0.030	mg/L	6010	NA	07 MAY 96
Cobalt	ND		1.0	0.040	mg/L	6010	NA	07 MAY 96
Copper	ND		1.0	0.030	mg/L	6010	NA	07 MAY 96
Iron	ND		1.0	0.040	mg/L	6010	NA	07 MAY 96
Magnesium	ND		1.0	5.0	mg/L	6010	NA	07 MAY 96
Manganese	ND		1.0	0.010	mg/L	6010	NA	07 MAY 96
Molybdenum	ND		1.0	0.040	mg/L	6010	NA	07 MAY 96
Nickel	ND		1.0	0.040	mg/L	6010	NA	07 MAY 96
Potassium	ND		1.0	5.0	mg/L	6010	NA	07 MAY 96
Silver	ND		1.0	0.030	mg/L	6010	NA	07 MAY 96
Sodium	ND		1.0	5.0	mg/L	6010	NA	07 MAY 96
Vanadium	ND		1.0	0.040	mg/L	6010	NA	07 MAY 96
Zinc	ND		1.0	0.010	mg/L	6010	NA	07 MAY 96

ND = Not Detected

Reported By: Mark Woolley

Approved By: Richard Persichitte

Trace ICP Metals
Dissolved Metals

Client Name: U.S. Geological Survey
 ID: CAFB-F-0496-2
 Location ID: 048350-0003-EB
 Matrix: AQUEOUS
 Authorized: 17 APR 96

Sampled: 16 APR 96
 Prepared: See Below

Received: 17 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Antimony	ND		1.0	0.010	mg/L	6010	19 MAY 96	20 MAY 96
Arsenic	ND		1.0	0.010	mg/L	6010	19 MAY 96	20 MAY 96
Cadmium	ND		1.0	0.0050	mg/L	6010	19 MAY 96	20 MAY 96
Lead	ND		1.0	0.0030	mg/L	6010	19 MAY 96	20 MAY 96
Selenium	ND		1.0	0.0050	mg/L	6010	19 MAY 96	20 MAY 96
Thallium	ND		1.0	0.010	mg/L	6010	19 MAY 96	20 MAY 96

ND = Not Detected

Reported By: Gerald Martinez

Approved By: Richard Persichitte

**Metals
Total Metals**

Client Name: U.S. Geological Survey
 ID: CAFB-P-0496-1
 Location: 048350-0004-SA
 Matrix: AQUEOUS
 Authorized: 17 APR 96

Sampled: 16 APR 96
 Prepared: See Below

Received: 17 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Aluminum	ND		1.0	0.20	mg/L	6010	18 APR 96	19 APR 96
Barium	ND		1.0	0.10	mg/L	6010	18 APR 96	19 APR 96
Beryllium	ND		1.0	0.0020	mg/L	6010	18 APR 96	19 APR 96
Calcium	102		1.0	5.0	mg/L	6010	18 APR 96	19 APR 96
Chromium	ND		1.0	0.030	mg/L	6010	18 APR 96	19 APR 96
Cobalt	ND		1.0	0.040	mg/L	6010	18 APR 96	19 APR 96
Copper	ND		1.0	0.030	mg/L	6010	18 APR 96	19 APR 96
Iron	ND		1.0	0.040	mg/L	6010	18 APR 96	19 APR 96
Magnesium	100		1.0	5.0	mg/L	6010	18 APR 96	19 APR 96
Manganese	ND		1.0	0.010	mg/L	6010	18 APR 96	19 APR 96
Molybdenum	ND		1.0	0.040	mg/L	6010	18 APR 96	19 APR 96
Nickel	ND		1.0	0.040	mg/L	6010	18 APR 96	19 APR 96
Potassium	9.8		1.0	5.0	mg/L	6010	18 APR 96	19 APR 96
Silver	ND		1.0	0.030	mg/L	6010	18 APR 96	19 APR 96
Sodium	139		1.0	5.0	mg/L	6010	18 APR 96	19 APR 96
Vanadium	ND		1.0	0.040	mg/L	6010	18 APR 96	19 APR 96
Zinc	0.020		1.0	0.010	mg/L	6010	18 APR 96	19 APR 96

ND = Not Detected

Reported By: Mark Woolley

Approved By: Richard Persichitte

**Trace ICP Metals
Total Metals**

Client Name: U.S. Geological Survey
 Contract ID: CAFB-P-0496-1
 Lab ID: 048350-0004-SA
 Matrix: AQUEOUS
 Authorized: 17 APR 96

Sampled: 16 APR 96
 Prepared: See Below

Received: 17 APR 96
 Analyzed: See Below

Parameter	Result Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Antimony	ND	1.0	0.010	mg/L	6010	18 APR 96	06 MAY 96
Arsenic	ND	1.0	0.010	mg/L	6010	18 APR 96	06 MAY 96
Cadmium	ND	1.0	0.0050	mg/L	6010	18 APR 96	06 MAY 96
Lead	ND	1.0	0.0030	mg/L	6010	18 APR 96	06 MAY 96
Selenium	ND	1.0	0.0050	mg/L	6010	18 APR 96	06 MAY 96
Thallium	ND	1.0	0.010	mg/L	6010	18 APR 96	06 MAY 96

ND = Not Detected

Reported By: Mark Woolley

Approved By: Richard Persichitte

**Metals
Dissolved Metals**

Client Name: U.S. Geological Survey
 Site ID: CAFB-P-0496-1
 Lab ID: 048350-0004-SA
 Matrix: AQUEOUS
 Authorized: 17 APR 96

Sampled: 16 APR 96
 Prepared: See Below

Received: 17 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Aluminum	ND		1.0	0.20	mg/L	6010	NA	07 MAY 96
Barium	ND		1.0	0.10	mg/L	6010	NA	07 MAY 96
Beryllium	ND		1.0	0.0020	mg/L	6010	NA	07 MAY 96
Calcium	107		1.0	5.0	mg/L	6010	NA	07 MAY 96
Chromium	ND		1.0	0.030	mg/L	6010	NA	07 MAY 96
Cobalt	ND		1.0	0.040	mg/L	6010	NA	07 MAY 96
Copper	ND		1.0	0.030	mg/L	6010	NA	07 MAY 96
Iron	ND		1.0	0.040	mg/L	6010	NA	07 MAY 96
Magnesium	103		1.0	5.0	mg/L	6010	NA	07 MAY 96
Manganese	ND		1.0	0.010	mg/L	6010	NA	07 MAY 96
Molybdenum	ND		1.0	0.040	mg/L	6010	NA	07 MAY 96
Nickel	ND		1.0	0.040	mg/L	6010	NA	07 MAY 96
Potassium	10.0		1.0	5.0	mg/L	6010	NA	07 MAY 96
Silver	ND		1.0	0.030	mg/L	6010	NA	07 MAY 96
Sodium	137		1.0	5.0	mg/L	6010	NA	07 MAY 96
Vanadium	ND		1.0	0.040	mg/L	6010	NA	07 MAY 96
Zinc	ND		1.0	0.010	mg/L	6010	NA	07 MAY 96

ND = Not Detected

Reported By: Mark Woolley

Approved By: Richard Persichitte

Trace ICP Metals
Dissolved Metals

Client Name: U.S. Geological Survey
 Client ID: CAFB-P-0496-1
 ID: 048350-0004-SA
 Matrix: AQUEOUS
 Authorized: 17 APR 96

Sampled: 16 APR 96
 Prepared: See Below

Received: 17 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Antimony	ND		1.0	0.010	mg/L	6010	19 MAY 96	20 MAY 96
Arsenic	ND		1.0	0.010	mg/L	6010	19 MAY 96	20 MAY 96
Cadmium	ND		1.0	0.0050	mg/L	6010	19 MAY 96	20 MAY 96
Lead	ND		1.0	0.0030	mg/L	6010	19 MAY 96	20 MAY 96
Selenium	ND		1.0	0.0050	mg/L	6010	19 MAY 96	20 MAY 96
Thallium	ND		1.0	0.010	mg/L	6010	19 MAY 96	20 MAY 96

ND = Not Detected

Reported By: Gerald Martinez

Approved By: Richard Persichitte

General Inorganics

Client Name: U.S. Geological Survey
 Client ID: CAFB-E-0496-1
 ID: 048350-0001-SA
 Matrix: AQUEOUS
 Authorized: 17 APR 96

Sampled: 16 APR 96
 Prepared: See Below

Received: 17 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Nitrite as N	ND		1.0	0.010	mg/L	354.1	NA	17 APR 96
Nitrate plus Nitrite as N	2.1		1.0	0.10	mg/L	353.2	NA	24 APR 96
Nitrate as N	2.1		1.0	0.10	mg/L	353.2/354	NA	17 MAY 96

ND = Not Detected

Reported By: Roxanne Sullivan

Approved By: Roxanne Sullivan

General Inorganics

Client Name: U.S. Geological Survey
 Client ID: CAFB-F-0496-1
 Location: 048350-0002-SA
 Matrix: AQUEOUS
 Authorized: 17 APR 96

Sampled: 16 APR 96
 Prepared: See Below

Received: 17 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Nitrite as N	ND		1.0	0.010	mg/L	354.1	NA	17 APR 96
Nitrate plus Nitrite as N	9.2	t	5.0	0.50	mg/L	353.2	NA	24 APR 96
Nitrate as N	9.2		1.0	0.50	mg/L	353.2/354	NA	17 MAY 96

t = Sample diluted due to the concentration of target compounds.
 ND = Not Detected

Reported By: Roxanne Sullivan

Approved By: Roxanne Sullivan

General Inorganics

Client Name: U.S. Geological Survey
 Client ID: CAFB-F-0496-2
 : 048350-0003-EB
 Matrix: AQUEOUS
 Authorized: 17 APR 96

Sampled: 16 APR 96
 Prepared: See Below

Received: 17 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Nitrite as N	ND		1.0	0.010	mg/L	354.1	NA	17 APR 96
Nitrate plus Nitrite as N	ND		1.0	0.10	mg/L	353.2	NA	24 APR 96
Nitrate as N	ND		1.0	0.10	mg/L	353.2/354	NA	17 MAY 96

ND = Not Detected

Reported By: Roxanne Sullivan

Approved By: Roxanne Sullivan

General Inorganics

Client Name: U.S. Geological Survey
 Client ID: CAFB-P-0496-1
 D: 048350-0004-SA
 X: AQUEOUS
 Authorized: 17 APR 96

Sampled: 16 APR 96
 Prepared: See Below

Received: 17 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Nitrite as N	ND		1.0	0.010	mg/L	354.1	NA	17 APR 96
Nitrate plus Nitrite as N	25.8	t	20	2.0	mg/L	353.2	NA	24 APR 96
Nitrate as N	25.8		1.0	2.0	mg/L	353.2/354	NA	17 MAY 96

t = Sample diluted due to the concentration of target compounds.
 ND = Not Detected

Reported By: Patrick Carroll

Approved By: Richard Persichitte

Quanterra Incorporated
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303 421-6511 Telephone
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ANALYTICAL RESULTS
FOR
U.S. GEOLOGICAL SURVEY
QUANTERRA NO. 048374

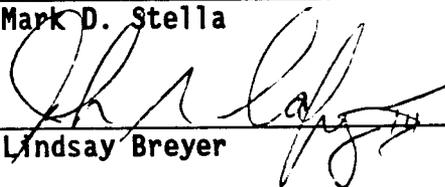
MAY 23, 1996

Prepared by:



Mark D. Stella

Reviewed by:



FOR Lindsay Breyer

I. OVERVIEW

On April 18, 1996, Quanterra Environmental Services, Denver received three aqueous samples from the U.S. Geological Survey.

This report presents the analytical results as well as supporting information to aid in the evaluation and interpretation of the data and is arranged in the following order:

- I. Overview
- II. Sample Description Information/Analytical Test Requests
- III. Analytical Results
- IV. Quality Control Report .

Metals:

Chromium, Iron and Potassium were recovered above the upper control limit in either the matrix spike or the matrix spike duplicate for the dissolved metals by ICP analysis. As a result of the high recoveries, the relative percent difference for these elements exceeded control limits. A matrix effect has been indicated. Since the duplicate control samples (DCS) were within acceptable limits, the data were reported.

With the exceptions noted either above or on the data sheets, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory QC samples analyzed in conjunction with the samples in this project were within established control limits.

II. SAMPLE DESCRIPTION INFORMATION/ANALYTICAL TEST REQUESTS

Sample Description Information:

The Sample Description Information lists all of the samples received in this project together with the internal laboratory identification number assigned for each sample. Each project received at Quanterra's Denver laboratory is assigned a unique six digit number. Samples within the project are numbered sequentially. The laboratory identification number is a combination of the six digit project code and the sample sequence number.

Also given in the Sample Description Information is the Sample Type (matrix), Date of Sampling (if known) and Date of Receipt at the laboratory.

Analytical Test Requests:

The Analytical Test Requests lists the analyses that were performed on each sample. The Custom Test column indicates where tests have been modified to conform to the specific requirements of this project.

SAMPLE DESCRIPTION INFORMATION
for
U.S. Geological Survey

Lab ID	Client ID	Matrix	Sampled		Received
			Date	Time	Date
048374-0001-SA	CAFB-G-0496-1	AQUEOUS	17 APR 96	13:00	18 APR 96
048374-0002-SA	CAFB-G-0496-2	AQUEOUS	17 APR 96	13:00	18 APR 96
048374-0003-SA	CAFB-H-0496-1	AQUEOUS	17 APR 96	10:00	18 APR 96
048374-0003-MS	CAFB-H-0496-2	AQUEOUS	17 APR 96	10:00	18 APR 96
048374-0003-SD	CAFB-H-0496-3	AQUEOUS	17 APR 96	10:00	18 APR 96

ANALYTICAL TEST REQUESTS
for
U.S. Geological Survey

Lab ID: 048374	Group Code	Analysis Description	Custom Test?
0001 - 0003	A	Nitrate Plus Nitrite	N
		Nitrite, as Nitrogen	N
		ICP Suite: Air Force	Y
		Prep - Total Metals, ICP	N
		ICP Metals (Total) by Trace ICP	N
		ICP Suite: Air Force	Y
		ICP Metals (Dissolved) by Trace ICP	N
		Nitrate, as Nitrogen by Calculation	N
		ICP Metals (Dissolved by Digestion) by Trace ICP	N
		Prep - Filtered/Dissolved, ICP	N

III. ANALYTICAL RESULTS

The analytical results for this project are presented in the following data tables. Each data table includes sample identification information, and when available and appropriate, dates sampled, received, authorized, prepared and analyzed. The authorization date is the date when the project was defined by the client such that laboratory work could begin. The date prepared is typically the date an extraction or digestion was initiated. For volatile organic compounds in water, the date prepared is the date the screening of the sample was performed.

Data sheets contain a listing of the parameters measured in each test, the analytical results and the Quanterra reporting limit. Reporting limits are adjusted to reflect dilution of the sample, when appropriate. Solid and waste samples are reported on an "as received" basis, i.e. no correction is made for moisture content.

Quanterra does not routinely blank-correct analytical data. Uncorrected analytical results are reported, along with associated blank results, for all organic and metals analyses. Analytical results and blank results are reported for conventional inorganic parameters as specified in the method.

The analytical data reported are subject to the following limitations of the analytical methodology:

Metals:

All nominal reporting limits for metals have been established from instrument detection limit (IDL) and method detection limit (MDL) evaluations and represent the level above which reliable data can be routinely obtained. On a periodic basis, low-level standards are analyzed seven times on three non-consecutive days on each instrument. The standard deviations of the three runs are summed to yield the IDL. MDL studies are performed on an annual basis in accordance with 40 CFR 136 Appendix B. Nominal reporting limits are generally 2-5 times the IDL or MDL (consistent with the American Chemical Society definition for the Limit of Quantification). IDL and MDL studies for metals are necessarily performed on reagent water and do not account for matrix effects. Elevation of the reporting limits above the nominal levels are sometimes required as discussed below.

Reporting limits for metals analyzed by Inductively Coupled Plasma (ICP) are typically raised only for dilution due to an analyte exceeding the instrument linear range. Background and interelement interferences are corrected automatically and do not require dilution.

Metals analyzed by Graphite Furnace Atomic Absorption (GFAA) are subject to matrix interferences. Consequently, Quanterra Environmental Services, Denver laboratory's protocol is to analyze a spiked aliquot with every sample. The severity of the interference, based upon analyte level and spike recovery, is assessed against specific criteria and the need for an elevated reporting limit or dilution is determined.

The analysis of mercury by Cold Vapor Atomic Absorption (CVAA) is generally free from matrix interferences. As with ICP, reporting limits are raised only for dilution due to a sample concentration exceeding the linear range of the instrument.

Footnotes and Data Qualifiers

The data sheets contained in this report may contain a variety of footnotes and data qualifiers. Those used to indicate the confidence level for Tentatively Identified Compounds (GC/MS methods) are described above. Other footnotes are used with specific tests; for example, footnotes used with the GC/FID Petroleum Hydrocarbon methods to indicate (in the analysts judgment) the product that appears to be present. Finally, there are a number of general qualifiers that serve to identify problems and pertinent observations made during sample analysis that are not discussed in the Overview. These are described below:

B Compound is also detected in the blank.

The indicated compound was detected in the sample as well as the method blank. Please note that the B flag is not used when the sample result is ND (Not Detected).

G Reporting limit raised due to the matrix of the sample.

Indicates that reporting limits were raised due to the presence of non-target compounds or other matrix interferences. The sample may or may not have been diluted. For inorganic methods, the footnote applies only to the flagged analyte. For organic methods, the footnote pertains to all analytes determined by the method.

T Preferred values unless footnoted on secondary column test.

This footnote is used with GC tests to indicate the primary column results. The footnote will be listed only for the first compound but pertains to all analytes determined by the method. It is used in conjunction the footnote V.

V Secondary column is the preferred value.

This footnote is used for GC tests in conjunction the T footnote. It indicates that the value from the second column is preferred over the primary column result and pertains only to the indicated compound.

t Sample diluted due to the concentration of target compounds.

Indicates that reporting limits were raised due to the presence of target analytes outside the calibration range of the method. For multi-analyte methods, the footnote will appear only for the first analyte but pertains to all analytes determined by the method.

**Metals
Total Metals**

Client Name: U.S. Geological Survey
 Client ID: CAFB-G-0496-1
 Lab ID: 048374-0001-SA
 Matrix: AQUEOUS
 Authorized: 18 APR 96

Sampled: 17 APR 96
 Prepared: See Below

Received: 18 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Aluminum	ND		1.0	0.20	mg/L	6010	23 APR 96	29 APR 96
Barium	ND		1.0	0.10	mg/L	6010	23 APR 96	29 APR 96
Beryllium	ND		1.0	0.0020	mg/L	6010	23 APR 96	29 APR 96
Calcium	95.0		1.0	5.0	mg/L	6010	23 APR 96	29 APR 96
Chromium	ND		1.0	0.030	mg/L	6010	23 APR 96	29 APR 96
Cobalt	ND		1.0	0.040	mg/L	6010	23 APR 96	29 APR 96
Copper	ND		1.0	0.030	mg/L	6010	23 APR 96	29 APR 96
Iron	0.079		1.0	0.040	mg/L	6010	23 APR 96	29 APR 96
Magnesium	87.7		1.0	5.0	mg/L	6010	23 APR 96	29 APR 96
Manganese	ND		1.0	0.010	mg/L	6010	23 APR 96	29 APR 96
Molybdenum	ND		1.0	0.040	mg/L	6010	23 APR 96	29 APR 96
Nickel	ND		1.0	0.040	mg/L	6010	23 APR 96	29 APR 96
Potassium	9.9		1.0	5.0	mg/L	6010	23 APR 96	29 APR 96
Silver	ND		1.0	0.030	mg/L	6010	23 APR 96	29 APR 96
Sodium	66.1		1.0	5.0	mg/L	6010	23 APR 96	29 APR 96
Vanadium	ND		1.0	0.040	mg/L	6010	23 APR 96	29 APR 96
Zinc	0.018		1.0	0.010	mg/L	6010	23 APR 96	29 APR 96

ND = Not Detected

Reported By: Mark Woolley

Approved By: Richard Persichitte

Trace ICP Metals
Total Metals

Client Name: U.S. Geological Survey
 Client ID: CAFB-G-0496-1
 Lab ID: 048374-0001-SA
 Matrix: AQUEOUS
 Authorized: 18 APR 96

Sampled: 17 APR 96
 Prepared: See Below

Received: 18 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Antimony	ND		1.0	0.010	mg/L	6010	23 APR 96	06 MAY 96
Arsenic	ND		1.0	0.010	mg/L	6010	23 APR 96	06 MAY 96
Cadmium	ND		1.0	0.0050	mg/L	6010	23 APR 96	06 MAY 96
Lead	ND		1.0	0.0030	mg/L	6010	23 APR 96	06 MAY 96
Selenium	ND		1.0	0.0050	mg/L	6010	23 APR 96	06 MAY 96
Thallium	ND		1.0	0.010	mg/L	6010	23 APR 96	06 MAY 96

ND = Not Detected

Reported By: Mark Woolley

Approved By: Richard Persichitte

**Metals
Dissolved Metals**

Client Name: U.S. Geological Survey
 Client ID: CAFB-G-0496-1
 Lab ID: 048374-0001-SA
 Matrix: AQUEOUS
 Authorized: 18 APR 96

Sampled: 17 APR 96
 Prepared: See Below

Received: 18 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Aluminum	ND		1.0	0.20	mg/L	6010	NA	08 MAY 96
Barium	ND		1.0	0.10	mg/L	6010	NA	08 MAY 96
Beryllium	ND		1.0	0.0020	mg/L	6010	NA	08 MAY 96
Calcium	100		1.0	5.0	mg/L	6010	NA	08 MAY 96
Chromium	ND		1.0	0.030	mg/L	6010	NA	08 MAY 96
Cobalt	ND		1.0	0.040	mg/L	6010	NA	08 MAY 96
Copper	ND		1.0	0.030	mg/L	6010	NA	08 MAY 96
Iron	ND		1.0	0.040	mg/L	6010	NA	08 MAY 96
Magnesium	97.6		1.0	5.0	mg/L	6010	NA	08 MAY 96
Manganese	ND		1.0	0.010	mg/L	6010	NA	08 MAY 96
Molybdenum	ND		1.0	0.040	mg/L	6010	NA	08 MAY 96
Nickel	ND		1.0	0.040	mg/L	6010	NA	08 MAY 96
Potassium	12.4		1.0	5.0	mg/L	6010	NA	08 MAY 96
Silver	ND		1.0	0.030	mg/L	6010	NA	08 MAY 96
Sodium	73.4		1.0	5.0	mg/L	6010	NA	08 MAY 96
Vanadium	ND		1.0	0.040	mg/L	6010	NA	08 MAY 96
Zinc	ND		1.0	0.010	mg/L	6010	NA	08 MAY 96

ND = Not Detected

Reported By: Mark Woolley

Approved By: Richard Persichitte

Trace ICP Metals
Dissolved Metals

Client Name: U.S. Geological Survey
 Client ID: CAFB-G-0496-1
 Lab ID: 048374-0001-SA
 Matrix: AQUEOUS
 Authorized: 18 APR 96

Sampled: 17 APR 96
 Prepared: See Below

Received: 18 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Antimony	ND		1.0	0.010	mg/L	6010	19 MAY 96	20 MAY 96
Arsenic	ND		1.0	0.010	mg/L	6010	19 MAY 96	20 MAY 96
Cadmium	ND		1.0	0.0050	mg/L	6010	19 MAY 96	20 MAY 96
Lead	ND		1.0	0.0030	mg/L	6010	19 MAY 96	20 MAY 96
Selenium	0.0088		1.0	0.0050	mg/L	6010	19 MAY 96	20 MAY 96
Thallium	ND		1.0	0.010	mg/L	6010	19 MAY 96	20 MAY 96

ND = Not Detected

Reported By: Norma Baier

Approved By: Richard Persichitte



**Metals
Total Metals**

Client Name: U.S. Geological Survey
 Client ID: CAFB-G-0496-2
 Lab ID: 048374-0002-SA
 Matrix: AQUEOUS
 Authorized: 18 APR 96

Sampled: 17 APR 96
 Prepared: See Below

Received: 18 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Aluminum	ND		1.0	0.20	mg/L	6010	23 APR 96	29 APR 96
Barium	ND		1.0	0.10	mg/L	6010	23 APR 96	29 APR 96
Beryllium	ND		1.0	0.0020	mg/L	6010	23 APR 96	29 APR 96
Calcium	98.1		1.0	5.0	mg/L	6010	23 APR 96	29 APR 96
Chromium	ND		1.0	0.030	mg/L	6010	23 APR 96	29 APR 96
Cobalt	ND		1.0	0.040	mg/L	6010	23 APR 96	29 APR 96
Copper	ND		1.0	0.030	mg/L	6010	23 APR 96	29 APR 96
Iron	0.097		1.0	0.040	mg/L	6010	23 APR 96	29 APR 96
Magnesium	91.8		1.0	5.0	mg/L	6010	23 APR 96	29 APR 96
Manganese	ND		1.0	0.010	mg/L	6010	23 APR 96	29 APR 96
Molybdenum	ND		1.0	0.040	mg/L	6010	23 APR 96	29 APR 96
Nickel	ND		1.0	0.040	mg/L	6010	23 APR 96	29 APR 96
Potassium	10.3		1.0	5.0	mg/L	6010	23 APR 96	29 APR 96
Silver	ND		1.0	0.030	mg/L	6010	23 APR 96	29 APR 96
Sodium	67.9		1.0	5.0	mg/L	6010	23 APR 96	29 APR 96
Vanadium	ND		1.0	0.040	mg/L	6010	23 APR 96	29 APR 96
Zinc	0.022		1.0	0.010	mg/L	6010	23 APR 96	29 APR 96

ND = Not Detected

Reported By: Mark Woolley

Approved By: Richard Persichitte

Trace ICP Metals
Total Metals

Client Name: U.S. Geological Survey
 Client ID: CAFB-G-0496-2
 Lab ID: 048374-0002-SA
 Matrix: AQUEOUS
 Authorized: 18 APR 96

Sampled: 17 APR 96
 Prepared: See Below

Received: 18 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Antimony	ND		1.0	0.010	mg/L	6010	23 APR 96	06 MAY 96
Arsenic	ND		1.0	0.010	mg/L	6010	23 APR 96	06 MAY 96
Cadmium	ND		1.0	0.0050	mg/L	6010	23 APR 96	06 MAY 96
Lead	ND		1.0	0.0030	mg/L	6010	23 APR 96	06 MAY 96
Selenium	ND		1.0	0.0050	mg/L	6010	23 APR 96	06 MAY 96
Thallium	ND		1.0	0.010	mg/L	6010	23 APR 96	06 MAY 96

ND = Not Detected

Reported By: Mark Woolley

Approved By: Richard Persichitte

**Metals
Dissolved Metals**

Client Name: U.S. Geological Survey
 Client ID: CAFB-G-0496-2
 Lab ID: 048374-0002-SA
 Matrix: AQUEOUS
 Authorized: 18 APR 96

Sampled: 17 APR 96
 Prepared: See Below

Received: 18 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Aluminum	ND		1.0	0.20	mg/L	6010	NA	08 MAY 96
Barium	ND		1.0	0.10	mg/L	6010	NA	08 MAY 96
Beryllium	ND		1.0	0.0020	mg/L	6010	NA	08 MAY 96
Calcium	101		1.0	5.0	mg/L	6010	NA	08 MAY 96
Chromium	ND		1.0	0.030	mg/L	6010	NA	08 MAY 96
Cobalt	ND		1.0	0.040	mg/L	6010	NA	08 MAY 96
Copper	ND		1.0	0.030	mg/L	6010	NA	08 MAY 96
Iron	ND		1.0	0.040	mg/L	6010	NA	08 MAY 96
Magnesium	98.5		1.0	5.0	mg/L	6010	NA	08 MAY 96
Manganese	ND		1.0	0.010	mg/L	6010	NA	08 MAY 96
Molybdenum	ND		1.0	0.040	mg/L	6010	NA	08 MAY 96
Nickel	ND		1.0	0.040	mg/L	6010	NA	08 MAY 96
Potassium	10.9		1.0	5.0	mg/L	6010	NA	08 MAY 96
Silver	ND		1.0	0.030	mg/L	6010	NA	08 MAY 96
Sodium	71.2		1.0	5.0	mg/L	6010	NA	08 MAY 96
Vanadium	ND		1.0	0.040	mg/L	6010	NA	08 MAY 96
Zinc	ND		1.0	0.010	mg/L	6010	NA	08 MAY 96

ND = Not Detected

Reported By: Mark Woolley

Approved By: Richard Persichitte

Trace ICP Metals
Dissolved Metals

Client Name: U.S. Geological Survey
 Client ID: CAFB-G-0496-2
 Lab ID: 048374-0002-SA
 Matrix: AQUEOUS
 Authorized: 18 APR 96

Sampled: 17 APR 96
 Prepared: See Below

Received: 18 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Antimony	ND		1.0	0.010	mg/L	6010	19 MAY 96	20 MAY 96
Arsenic	ND		1.0	0.010	mg/L	6010	19 MAY 96	20 MAY 96
Cadmium	ND		1.0	0.0050	mg/L	6010	19 MAY 96	20 MAY 96
Lead	ND		1.0	0.0030	mg/L	6010	19 MAY 96	20 MAY 96
Selenium	0.0068		1.0	0.0050	mg/L	6010	19 MAY 96	20 MAY 96
Thallium	ND		1.0	0.010	mg/L	6010	19 MAY 96	20 MAY 96

ND = Not Detected

Reported By: Norma Baier

Approved By: Richard Persichitte

**Metals
Total Metals**

Client Name: U.S. Geological Survey
 Client ID: CAFB-H-0496-1
 Lab ID: 048374-0003-SA
 Matrix: AQUEOUS
 Authorized: 18 APR 96

Sampled: 17 APR 96
 Prepared: See Below

Received: 18 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Aluminum	ND		1.0	0.20	mg/L	6010	23 APR 96	29 APR 96
Barium	ND		1.0	0.10	mg/L	6010	23 APR 96	29 APR 96
Beryllium	ND		1.0	0.0020	mg/L	6010	23 APR 96	29 APR 96
Calcium	47.1		1.0	5.0	mg/L	6010	23 APR 96	29 APR 96
Chromium	ND		1.0	0.030	mg/L	6010	23 APR 96	29 APR 96
Cobalt	ND		1.0	0.040	mg/L	6010	23 APR 96	29 APR 96
Copper	ND		1.0	0.030	mg/L	6010	23 APR 96	29 APR 96
Iron	1.2		1.0	0.040	mg/L	6010	23 APR 96	29 APR 96
Magnesium	43.1		1.0	5.0	mg/L	6010	23 APR 96	29 APR 96
Manganese	0.023		1.0	0.010	mg/L	6010	23 APR 96	29 APR 96
Molybdenum	ND		1.0	0.040	mg/L	6010	23 APR 96	29 APR 96
Nickel	ND		1.0	0.040	mg/L	6010	23 APR 96	29 APR 96
Potassium	7.5		1.0	5.0	mg/L	6010	23 APR 96	29 APR 96
Silver	ND		1.0	0.030	mg/L	6010	23 APR 96	29 APR 96
Sodium	53.8		1.0	5.0	mg/L	6010	23 APR 96	29 APR 96
Vanadium	ND		1.0	0.040	mg/L	6010	23 APR 96	29 APR 96
Zinc	0.051		1.0	0.010	mg/L	6010	23 APR 96	29 APR 96

ND = Not Detected

Reported By: Mark Woolley

Approved By: Richard Persichitte

Trace ICP Metals
Total Metals

Client Name: U.S. Geological Survey
 Client ID: CAFB-H-0496-1
 Lab ID: 048374-0003-SA
 Matrix: AQUEOUS
 Authorized: 18 APR 96

Sampled: 17 APR 96
 Prepared: See Below

Received: 18 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Antimony	ND		1.0	0.010	mg/L	6010	23 APR 96	06 MAY 96
Arsenic	ND		1.0	0.010	mg/L	6010	23 APR 96	06 MAY 96
Cadmium	ND		1.0	0.0050	mg/L	6010	23 APR 96	06 MAY 96
Lead	ND		1.0	0.0030	mg/L	6010	23 APR 96	06 MAY 96
Selenium	ND		1.0	0.0050	mg/L	6010	23 APR 96	06 MAY 96
Thallium	ND		1.0	0.010	mg/L	6010	23 APR 96	06 MAY 96

ND = Not Detected

Reported By: Mark Woolley

Approved By: Richard Persichitte

**Metals
Dissolved Metals**

Client Name: U.S. Geological Survey
 Client ID: CAFB-H-0496-1
 Lab ID: 048374-0003-SA
 Matrix: AQUEOUS
 Authorized: 18 APR 96

Sampled: 17 APR 96
 Prepared: See Below

Received: 18 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Aluminum	ND		1.0	0.20	mg/L	6010	NA	08 MAY 96
Barium	ND		1.0	0.10	mg/L	6010	NA	08 MAY 96
Beryllium	ND		1.0	0.0020	mg/L	6010	NA	08 MAY 96
Calcium	48.4		1.0	5.0	mg/L	6010	NA	08 MAY 96
Chromium	ND		1.0	0.030	mg/L	6010	NA	08 MAY 96
Cobalt	ND		1.0	0.040	mg/L	6010	NA	08 MAY 96
Copper	ND		1.0	0.030	mg/L	6010	NA	08 MAY 96
Iron	ND		1.0	0.040	mg/L	6010	NA	08 MAY 96
Magnesium	46.3		1.0	5.0	mg/L	6010	NA	08 MAY 96
Manganese	ND		1.0	0.010	mg/L	6010	NA	08 MAY 96
Molybdenum	ND		1.0	0.040	mg/L	6010	NA	08 MAY 96
Nickel	ND		1.0	0.040	mg/L	6010	NA	08 MAY 96
Potassium	8.0		1.0	5.0	mg/L	6010	NA	08 MAY 96
Silver	ND		1.0	0.030	mg/L	6010	NA	08 MAY 96
Sodium	56.3		1.0	5.0	mg/L	6010	NA	08 MAY 96
Vanadium	ND		1.0	0.040	mg/L	6010	NA	08 MAY 96
Zinc	ND		1.0	0.010	mg/L	6010	NA	08 MAY 96

ND = Not Detected

Reported By: Mark Woolley

Approved By: Richard Persichitte

Trace ICP Metals
Dissolved Metals

Client Name: U.S. Geological Survey
 Client ID: CAFB-H-0496-1
 Lab ID: 048374-0003-SA
 Matrix: AQUEOUS
 Authorized: 18 APR 96

Sampled: 17 APR 96
 Prepared: See Below

Received: 18 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Antimony	ND		1.0	0.010	mg/L	6010	19 MAY 96	20 MAY 96
Arsenic	ND		1.0	0.010	mg/L	6010	19 MAY 96	20 MAY 96
Cadmium	ND		1.0	0.0050	mg/L	6010	19 MAY 96	20 MAY 96
Lead	ND		1.0	0.0030	mg/L	6010	19 MAY 96	20 MAY 96
Selenium	0.0064		1.0	0.0050	mg/L	6010	19 MAY 96	20 MAY 96
Thallium	ND		1.0	0.010	mg/L	6010	19 MAY 96	20 MAY 96

ND = Not Detected

Reported By: Norma Baier

Approved By: Richard Persichitte

General Inorganics

Client Name: U.S. Geological Survey
 Contract ID: CAFB-G-0496-1
 ID: 048374-0001-SA
 Matrix: AQUEOUS
 Authorized: 18 APR 96

Sampled: 17 APR 96
 Prepared: See Below

Received: 18 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Nitrite as N	ND		1.0	0.010	mg/L	354.1	NA	18 APR 96
Nitrate plus Nitrite as N	15.0	t	10	1.0	mg/L	353.2	NA	24 APR 96
Nitrate as N	15.0		1.0	1.0	mg/L	353.2/354	NA	17 MAY 96

t = Sample diluted due to the concentration of target compounds.
 ND = Not Detected

Reported By: Roxanne Sullivan

Approved By: Roxanne Sullivan

General Inorganics

Client Name: U.S. Geological Survey
 Site ID: CAFB-G-0496-2
 ID: 048374-0002-SA
 Matrix: AQUEOUS
 Authorized: 18 APR 96

Sampled: 17 APR 96
 Prepared: See Below

Received: 18 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Nitrite as N	ND		1.0	0.010	mg/L	354.1	NA	18 APR 96
Nitrate plus Nitrite as N	14.7	t	20	2.0	mg/L	353.2	NA	24 APR 96
Nitrate as N	14.7		1.0	2.0	mg/L	353.2/354	NA	17 MAY 96

t = Sample diluted due to the concentration of target compounds.
 ND = Not Detected

Reported By: Roxanne Sullivan

Approved By: Roxanne Sullivan

General Inorganics

Client Name: U.S. Geological Survey
 Sample ID: CAFB-H-0496-1
 ID: 048374-0003-SA
 Matrix: AQUEOUS
 Authorized: 18 APR 96

Sampled: 17 APR 96
 Prepared: See Below

Received: 18 APR 96
 Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Nitrite as N	ND		1.0	0.010	mg/L	354.1	NA	18 APR 96
Nitrate plus Nitrite as N	1.2		1.0	0.10	mg/L	353.2	NA	24 APR 96
Nitrate as N	1.2		1.0	0.10	mg/L	353.2/354	NA	17 MAY 96

ND = Not Detected

Reported By: Roxanne Sullivan

Approved By: Roxanne Sullivan

APPENDIX - II

DODEC LABORATORY DATA REVIEW WORKSHEET

1.0 GENERAL INFORMATION

Data reviewer: BOB BRACK
Date of review: 6/17/96
Sample project number: 48350
Project name: NM- CANNON AFB
Sample collection date: 4/16/96
Sample matrix and number: 4 APLEAS

Type and number of samples in project:

<u>Type</u>	<u>Number</u>
Environmental	<u>3</u>
Trip blank	<u> </u>
Equipment blank	<u>1</u>
Ambient blank	<u> </u>
MS/MSD	<u> </u>
Other	<u> </u>

2.0 DATA REPORT

Date of Analytical Results Report: 5/23/96
Number of volumes in Raw Data Report: 1
Raw Data Report reviewed? Yes No X

Were all analyses requested on the COC form performed by the laboratory?
Yes X No

If no, list canceled analyses and reason for non-performance:

Were the samples properly preserved upon receipt by the laboratory?
Yes X No

If no, list laboratory ID for samples that were not properly preserved.

3.0 ANALYTICAL METHODS

Analytical methods used in this project

- _____ VOC by GC/MS (SW 8240, SW 8260, E524, E624)
- _____ Halogenated VOC by GC (SW 8010)
- _____ Aromatic VOC by GC (SW 8020)
- _____ SVOC by GC/MS (SW 8270)
- _____ PAH by HPLC (SW 8310)
- _____ Organochlorine pesticides and PCB (SW 8080)
- _____ Organophosphorous pesticides (SW 8140)
- _____ Chlorinated herbicides (SW 8150)
- _____ Dioxins and Furans (SW 8280)
- _____ Explosives (8330)
- _____ TOC (E415.1 or SW 9060)
- _____ TPH (E418.1)
- _____ Oil and Grease (E413.2)
- _____ TOX (SW9020)

- ICP screen for metals (SW 6010)
- ICP/MS screen for metals (SW 6020)
- Trace ICP screen for metals (SW 6010 modified) *Sb, As, Cd, Pb, Se, Tl*
- _____ Antimony by GFAA (SW 7041)
- _____ Arsenic by GFAA (SW 7060)
- _____ Chromium (SW 7191 or 7196)
- _____ Lead by GFAA (SW 7421)
- _____ Mercury by CVAA (SW 7470 or 7471)
- _____ Selenium by GFAA (SW 7740)
- _____ Thallium by GFAA (SW 7841)
- _____ Inorganic anions (E300.0)
- _____ Alkalinity (310.1)
- _____ Cyanide, total and amenable (SW 9010/9012)
- _____ Nitrogen, ammonia (E350.1)
- _____ Nitrogen, TKN (E351.2)
- Nitrogen, nitrate (E353.2)
- Nitrogen, nitrate plus nitrite (E353.2)
- Nitrogen, nitrite (E354.1)
- _____ Phosphorous, total or ortho (E365.3)
- _____ Sulfate (E375.4)
- _____ Sulfide (E376.2)
- _____ TDS (E160.1)
- _____ pH (SW 9040 or 9045)
- _____ Percent moisture (D2216)

- _____ Gross alpha and gross beta radioactivity (SW 9310)
- _____ Alpha-emitting radium isotopes (SW 9315)
- _____ Radium-228 (SW 9320)
- _____ Uranium (908.1)

- _____ Other analyses : _____
- _____
- _____
- _____

Were analytical holding times met? Yes X No _____

If no, list analytical method and laboratory ID for samples that exceeded holding time:

Did surrogate recoveries meet QC acceptance criteria? Yes _____ No _____ *NA*

If no, list analytical method, laboratory ID, and surrogates that did not meet acceptance criteria:

Did actual reporting limits meet project detection limits? Organic analyses : Yes _____ No _____ *NA*

If no, list analytical method, laboratory ID, and reason for non-conformance:

Inorganic analyses: Yes _____ No X *Pb: -0001 015, -0002 015
Ni₂+Ni₃: -0002, -0004*

Reporting limits for GFAA metals and inorganic anions may be raised when: (1) sample concentrations exceed the instrument linear range and (2) target analytes are subject to matrix interferences. Reporting limits for ICP metals and mercury by CVAA are typically only raised when the sample concentration exceeds the instrument linear range.

Did DCS meet QC acceptance criteria? Yes X No _____

If no, list analytical method, laboratory ID, and reason for non-conformance:

Did SCS meet QC acceptance criteria? Yes _____ No _____ **NA**

If no, list analytical method, laboratory ID, and reason for non-conformance:

Were any target compounds found in the method, trip, equipment, or ambient blanks above the RL? Yes No _____

If yes, list the analytical method, laboratory ID, type of blank and compound:

ZINC (TOTAL) WAS DETECTED ABOVE THE RL IN SAMPLE - C103 (EA)
LEAD (TOTAL) " " " " " " " " " " " "

Did the MS/MSD meet QC acceptance criteria? Yes _____ No _____ **NA**

MS/MSD data are used to evaluate the effect of the sample matrix on the analytical process and should only be used in conjunction with other available laboratory QC information to evaluate precision and accuracy.

If no, list the analytical method, laboratory ID, and reason for non-conformance :

Additional comments:

IV. QUALITY CONTROL REPORT

The Quanterra laboratories operate under a vigorous QA/QC program designed to ensure the generation of scientifically valid, legally defensible data by monitoring every aspect of laboratory operations. Routine QA/QC procedures include the use of approved methodologies, independent verification of analytical standards, use of duplicate Laboratory Control Samples to assess the precision and accuracy of the methodology on a routine basis, and a rigorous system of data review.

The standard laboratory QC package is designed to:

- 1) establish a strong, cost-effective QC program that ensures the generation of scientifically valid, legally defensible data
- 2) assess the laboratory's performance of the analytical method using control limits generated with a well-defined matrix
- 3) establish clear-cut guidelines for acceptability of analytical data so that QC decisions can be made immediately at the bench, and
- 4) provide a standard set of reportables which assures the client of the quality of his data.

The Quanterra QC program is based upon monitoring the precision and accuracy of an analytical method by analyzing a set of Duplicate Control Samples (DCS) at frequent, well-defined intervals. Each DCS is a well-characterized matrix which is spiked with target compounds at 5-100 times the reporting limit, depending upon the methodology being monitored. The purpose of the DCS is not to duplicate the sample matrix, but rather to provide an interference-free, homogeneous matrix from which to gather data to establish control limits. These limits are used to determine whether data generated by the laboratory on any given day is in control.

Control limits for accuracy (percent recovery) are based on the average, historical percent recovery +/- 3 standard deviation units. Control limits for precision (relative percent difference) range from 0 (identical duplicate DCS results) to the average, historical relative percent difference + 3 standard deviation units. These control limits are fairly narrow based on the consistency of the matrix being monitored and are updated on a quarterly basis.

For each batch of samples analyzed, an additional control measure is taken in the form of a Single Control Sample (SCS). The SCS consists of a control matrix that is spiked with surrogate compounds appropriate to the method being used. In cases where no surrogate is available, (e.g., metals or conventional analyses) a single DCS serves as the control sample. An SCS is prepared for each sample lot for which the DCS pair are not analyzed. The recovery of the SCS is charted in exactly the same manner as described for the DCS, and provides a daily check on the performance of the method.

Accuracy for DCS and SCS is measured by Percent Recovery.

$$\% \text{ Recovery} = \frac{\text{Measured Concentration}}{\text{Actual Concentration}} \times 100$$

Precision for DCS is measured by Relative Percent Difference (RPD).

$$\text{RPD} = \frac{|\text{Measured Concentration DCS1} - \text{Measured Concentration DCS2}|}{(\text{Measured Concentration DCS1} + \text{Measured Concentration DCS2})/2} \times 100$$

All samples analyzed concurrently by the same test are assigned the same QC lot number. Projects which contain numerous samples, analyzed over several days, may have multiple QC lot numbers associated with each test. The QC information which follows includes a listing of the QC lot numbers associated with each of the samples reported, DCS and SCS (where applicable) recoveries from the QC lots associated with the samples, and control limits for these lots. The QC data is reported by test code, in the order that the tests are reported in the analytical results section of this report.

QC LOT ASSIGNMENT REPORT
Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
048350-0001-SA	AQUEOUS	ICP-AT	18 APR 96-SC	18 APR 96-SC
048350-0001-SA	AQUEOUS	ICP-TRA-AT	18 APR 96-SC	18 APR 96-SC
048350-0001-SA	AQUEOUS	ICP-AD	07 MAY 96-N1	07 MAY 96-N1
048350-0001-SA	AQUEOUS	ICP-TR-ADT	19 MAY 96-N4	19 MAY 96-N4
048350-0002-SA	AQUEOUS	ICP-AT	18 APR 96-SC	18 APR 96-SC
048350-0002-SA	AQUEOUS	ICP-TRA-AT	18 APR 96-SC	18 APR 96-SC
048350-0002-SA	AQUEOUS	ICP-AD	07 MAY 96-N1	07 MAY 96-N1
048350-0002-SA	AQUEOUS	ICP-TR-ADT	19 MAY 96-N4	19 MAY 96-N4
048350-0003-EB	AQUEOUS	ICP-AT	18 APR 96-SC	18 APR 96-SC
048350-0003-EB	AQUEOUS	ICP-TRA-AT	18 APR 96-SC	18 APR 96-SC
048350-0003-EB	AQUEOUS	ICP-AD	07 MAY 96-N1	07 MAY 96-N1
048350-0003-EB	AQUEOUS	ICP-TR-ADT	19 MAY 96-N4	19 MAY 96-N4
048350-0004-SA	AQUEOUS	ICP-AT	18 APR 96-SC	18 APR 96-SC
048350-0004-SA	AQUEOUS	ICP-TRA-AT	18 APR 96-SC	18 APR 96-SC
048350-0004-SA	AQUEOUS	ICP-AD	07 MAY 96-N1	07 MAY 96-N1
048350-0004-SA	AQUEOUS	ICP-TR-ADT	19 MAY 96-N4	19 MAY 96-N4

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation

Analyte	Concentration			AVG	Accuracy Average(%)		Precision (RPD)	
	Spiked	DCS1	Measured DCS2		DCS	Limits	DCS	Limits
Category: ICP-AT								
Matrix: AQUEOUS								
QC Lot: 18 APR 96-SC								
Concentration Units: mg/L								
Aluminum	2.00	2.01	2.02	2.02	101	80-116	0.74	10
Antimony	0.500	0.497	0.498	0.498	100	80-115	0.14	14
Arsenic	2.000	1.97	1.93	1.95	98	80-115	2.3	17
Barium	2.00	2.00	2.00	2.00	100	80-114	0.14	10
Beryllium	0.0500	0.0488	0.0489	0.0488	98	80-120	0.22	10
Boron	1.0	1.06	1.05	1.05	105	80-120	1.0	10
Cadmium	0.0500	0.0470	0.0490	0.0480	96	80-119	4.1	16
Calcium	50.0	50.0	50.1	50.0	100	80-114	0.22	10
Chromium	0.200	0.188	0.188	0.188	94	80-116	0.081	11
Cobalt	0.500	0.496	0.499	0.498	100	80-114	0.54	10
Copper	0.250	0.259	0.252	0.255	102	80-120	2.8	10
Iron	1.00	1.01	0.998	1.00	100	80-120	1.1	11
Lead	0.500	0.498	0.497	0.498	100	80-119	0.15	10
Lithium	1.00	0.903	0.894	0.898	90	80-120	1.0	20
Magnesium	50.0	49.8	49.7	49.8	100	81-120	0.19	10
Manganese	0.500	0.496	0.496	0.496	99	80-116	0.014	10
Molybdenum	1.00	0.967	0.973	0.970	97	80-120	0.63	20
Nickel	0.500	0.488	0.494	0.491	98	80-114	1.3	10
Strontium	50.0	48.9	48.8	48.9	98	80-120	0.18	13
Selenium	2.000	1.97	1.99	1.98	99	80-120	1.3	20
Silver	0.050	0.0485	0.0484	0.0485	97	80-119	0.31	15
Sodium	50.0	49.0	48.6	48.8	98	80-120	0.72	10
Tin	2.00	2.04	2.01	2.02	101	80-120	1.5	20
Titanium	1.000	0.991	0.982	0.986	99	80-120	0.90	20
Vanadium	0.500	0.499	0.500	0.499	100	80-116	0.22	10
Zinc	0.500	0.489	0.491	0.490	98	80-120	0.49	13

Category: ICP-TRA-AT
Matrix: AQUEOUS
QC Lot: 18 APR 96-SC
Concentration Units: mg/L

Antimony	0.50	0.507	0.518	0.512	102	80-120	2.1	20
Arsenic	2.0	2.04	2.06	2.05	102	80-120	0.98	20
Cadmium	0.050	0.0539	0.0547	0.0543	109	80-120	1.4	20
Lead	0.50	0.526	0.533	0.530	106	80-120	1.2	20
Selenium	2.0	2.02	2.06	2.04	102	80-120	1.9	20
Thallium	2.0	2.05	2.07	2.06	103	80-120	1.1	20

Calculations are performed before rounding to avoid round-off errors in calculated results.

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation (cont.)

Analyte	Concentration			AVG	Accuracy		Precision	
	Spiked	DCS1	Measured DCS2		Average (%) DCS	Limits	(RPD) DCS	Limits
Aluminum	5.00	5.20	5.16	5.18	104	90-110	0.67	20
Antimony	0.500	0.506	0.505	0.506	101	90-110	0.31	20
Arsenic	0.500	0.475	0.500	0.488	98	90-110	5.0	20
Barium	0.500	0.521	0.535	0.528	106	90-110	2.5	20
Beryllium	0.500	0.510	0.510	0.510	102	90-110	0.063	20
Boron	0.500	0.513	0.518	0.515	103	90-110	0.88	20
Cadmium	0.500	0.510	0.518	0.514	103	90-110	1.6	20
Calcium	20.0	20.1	20.5	20.3	102	90-110	1.7	20
Chromium	0.500	0.506	0.516	0.511	102	90-110	2.0	20
Cobalt	0.500	0.511	0.521	0.516	103	90-110	2.0	20
Copper	0.500	0.510	0.508	0.509	102	90-110	0.27	20
Iron	5.00	5.20	5.24	5.22	104	90-110	0.79	20
Lead	0.500	0.505	0.531	0.518	104	90-110	5.0	20
Lithium	5.00	5.00	4.96	4.98	100	90-110	0.80	20
Magnesium	20.0	19.8	19.5	19.7	98	90-110	1.5	20
Manganese	0.500	0.513	0.520	0.516	103	90-110	1.2	20
Molybdenum	0.500	0.521	0.530	0.526	105	90-110	1.7	20
Nickel	0.500	0.506	0.506	0.506	101	90-110	0.012	20
Potassium	50.0	49.0	48.5	48.7	97	90-110	0.98	20
Selenium	5.00	5.05	5.18	5.11	102	90-110	2.5	20
Silica as SiO2	100	105	106	105	105	90-110	0.62	20
Silver	0.500	0.506	0.515	0.510	102	90-110	1.8	20
Sodium	200	201	202	201	101	90-110	0.12	20
Vanadium	0.500	0.517	0.525	0.521	104	90-110	1.5	20
Zinc	0.500	0.500	0.509	0.504	101	90-110	1.9	20

Category: ICP-TR-ADT
Matrix: AQUEOUS
QC Lot: 19 MAY 96-N4
Concentration Units: mg/L

Antimony	0.500	0.518	0.527	0.522	104	80-120	1.7	20
Arsenic	2.000	2.09	2.12	2.10	105	80-120	1.7	20
Cadmium	0.0500	0.0536	0.0544	0.0540	108	80-120	1.6	20
Lead	0.500	0.523	0.532	0.527	105	80-120	1.7	20
Selenium	2.000	2.25	2.28	2.27	113	80-120	1.4	20
Thallium	2.000	2.11	2.14	2.13	106	80-120	1.3	20

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT
Metals Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: ICP-AFIR-AT			
Matrix: AQUEOUS			
QC Lot: 18 APR 96-SC QC Run: 18 APR 96-SC			
Aluminum	ND	mg/L	0.20
Barium	ND	mg/L	0.10
Beryllium	ND	mg/L	0.0020
Calcium	ND	mg/L	5.0
Chromium	ND	mg/L	0.030
Cobalt	ND	mg/L	0.040
Copper	ND	mg/L	0.030
Iron	ND	mg/L	0.040
Magnesium	ND	mg/L	5.0
Manganese	ND	mg/L	0.010
Molybdenum	ND	mg/L	0.040
Nickel	ND	mg/L	0.040
Potassium	ND	mg/L	5.0
Silver	ND	mg/L	0.030
Sodium	ND	mg/L	5.0
Vanadium	ND	mg/L	0.040
Zinc	ND	mg/L	0.010

Test: ICP-TRACE-AT
Matrix: AQUEOUS
QC Lot: 18 APR 96-SC QC Run: 18 APR 96-SC

Antimony	ND	mg/L	0.010
Arsenic	ND	mg/L	0.010
Cadmium	ND	mg/L	0.0050
Lead	ND	mg/L	0.0030
Selenium	ND	mg/L	0.0050
Thallium	ND	mg/L	0.010

Test: ICP-AFIR-AD
Matrix: AQUEOUS
QC Lot: 07 MAY 96-N1 QC Run: 07 MAY 96-N1

Aluminum	ND	mg/L	0.20
Barium	ND	mg/L	0.10
Beryllium	ND	mg/L	0.0020
Calcium	ND	mg/L	5.0
Chromium	ND	mg/L	0.030
Cobalt	ND	mg/L	0.040

METHOD BLANK REPORT
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: ICP-AFIR-AD			
Matrix: AQUEOUS			
QC Lot: 07 MAY 96-N1 QC Run: 07 MAY 96-N1			
Copper	ND	mg/L	0.030
Iron	ND	mg/L	0.040
Magnesium	ND	mg/L	5.0
Manganese	ND	mg/L	0.010
Molybdenum	ND	mg/L	0.040
Nickel	ND	mg/L	0.040
Potassium	ND	mg/L	5.0
Silver	ND	mg/L	0.030
Sodium	ND	mg/L	5.0
Vanadium	ND	mg/L	0.040
Zinc	ND	mg/L	0.010

Test: ICP-TRACE-ADT
Matrix: AQUEOUS
QC Lot: 19 MAY 96-N4 QC Run: 19 MAY 96-N4

Antimony	ND	mg/L	0.010
Arsenic	ND	mg/L	0.010
Cadmium	ND	mg/L	0.0050
Lead	ND	mg/L	0.0030
Selenium	ND	mg/L	0.0050
Thallium	ND	mg/L	0.010

QC LOT ASSIGNMENT REPORT
Wet Chemistry Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
048350-0001-SA	AQUEOUS	NO3+NO2-A	24 APR 96-N1	24 APR 96-N1
048350-0001-SA	AQUEOUS	NO2-A	17 APR 96-N1	17 APR 96-N1
048350-0002-SA	AQUEOUS	NO3+NO2-A	24 APR 96-N1	24 APR 96-N1
048350-0002-SA	AQUEOUS	NO2-A	17 APR 96-N1	17 APR 96-N1
048350-0003-EB	AQUEOUS	NO3+NO2-A	24 APR 96-N1	24 APR 96-N1
048350-0003-EB	AQUEOUS	NO2-A	17 APR 96-N1	17 APR 96-N1
048350-0004-EB	AQUEOUS	NO3+NO2-A	24 APR 96-N1	24 APR 96-N1
048350-0004-EB	AQUEOUS	NO2-A	17 APR 96-N1	17 APR 96-N1

DUPLICATE CONTROL SAMPLE REPORT
Wet Chemistry Analysis and Preparation

Analyte	Concentration		Measured DCS2	AVG	Accuracy Average(%)		Precision (RPD)		
	Spiked	DCS1			DCS	Limits	DCS Limit	DCS Limit	
Category: NO3+NO2-A Matrix: AQUEOUS QC Lot: 24 APR 96-N1 Concentration Units: mg/L									
Nitrate plus Nitrite as N	15.2	16.2	16.4	16.3	107	90-116	1.4	10	
Category: NO2-A Matrix: AQUEOUS QC Lot: 17 APR 96-N1 Concentration Units: mg/L									
Nitrite as N	0.100	0.108	0.107	0.108	108	91-113	0.93	10	

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT
Wet Chemistry Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: NO3+NO2-TEC-A Matrix: AQUEOUS QC Lot: 24 APR 96-N1 QC Run: 24 APR 96-N1			
Nitrate plus Nitrite as N	ND	mg/L	0.10
Test: NO2-SPEC-A Matrix: AQUEOUS QC Lot: 17 APR 96-N1 QC Run: 17 APR 96-N1			
Nitrite as N	ND	mg/L	0.010

**U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIVISION, NEW MEXICO DISTRICT
ANALYTICAL REQUEST/CHAIN OF CUSTODY**

Project Name & Number Cannon Air Force Base, Ground Water Sampling 463536004				PACKING AND SHIPPING DETAILS		
				Packed and Sealed for Shipping by <i>J. E. Roybal</i>		Seal Number 054774
Sampling Location Sewage Lagoons, Cannon Air Force Base, New Mexico				Delivered to Shipper by <i>J. E. Roybal</i>		Airbill Number 0255916242
				Team Leader Jerry Larson		
Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
16APR96	0905	CAFB-E-0496-1	Groundwater	4	NITRATE (E353.2 / E354.1), SW3005/SW6010-ICP-TRACE-TOT.&DISS. METALS (Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Ti, V, Zn)	ENVIRONMENTAL SAMPLE -01

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Additional Comments

CHAIN OF CUSTODY RECORD				LABORATORY LOG-IN OF SAMPLE SHIPPING CONTAINER		
Relinquished by (signed)	Received by (signed)	Date	Time	Analytical Laboratory		Seal Intact upon Receipt <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	<i>J. E. Roybal</i>	4/11/96	900	Quanterra Environmental 4955 Yarrow Street Arvada, CO 80002 ph: (303) 421-6611 Attention: Lindsay Breyer		Condition of Contents good
						Contents Temperature 2.2
						Laboratory Project Number 48350

**U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIVISION, NEW MEXICO DISTRICT
ANALYTICAL REQUEST/CHAIN OF CUSTODY**

Project Name & Number Cannon Air Force Base, Ground Water Sampling 463536004				PACKING AND SHIPPING DETAILS		
				Packed and Sealed for Shipping by <i>J. Alan Rybal</i>		Seal Number 084774
Sampling Location Sewage Lagoons, Cannon Air Force Base, New Mexico				Delivered to Shipper by <i>J. Alan Rybal</i>		Airbill Number 0255716242
				Team Leader Jerry Larson		
Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
4 APR 96	1240	CAFB-F-0496-1	Groundwater	4	NITRATE (E353.2 / E354.1), SW3005/SW6010-ICP-TRACE-TOT. & DISS. METALS (Al,Sb,As,Ba,Be,Cd,Ca,Cr,Co,Cu,Fe, Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Tl,V,Zn)	ENVIRONMENTAL SAMPLE -02
16 APR 96	1000	CAFB-F-0496-2	ASTM-TYPE-II WATER	4	NITRATE (E353.2 / E354.1), SW3005/SW6010-ICP-TRACE-TOT. & DISS. METALS (Al,Sb,As,Ba,Be,Cd,Ca,Cr,Co,Cu,Fe, Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Tl,V,Zn)	EQUIPMENT BLANK -03

Additional Comments

CHAIN OF CUSTODY RECORD				LABORATORY LOG-IN OF SAMPLE SHIPPING CONTAINER		
Relinquished by (signed)	Received by (signed)	Date	Time	Analytical Laboratory	Seal Intact upon Receipt <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	<i>Mellor</i>	4/17/96	9am	Quanterra Environmental 4955 Yarrow Street Arvada, CO 80002 ph: (303) 421-6611 Attention: Lindsay Breyer	Condition of Contents 910d	
					Contents Temperature 2.2	
					Laboratory Project Number 48350	

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**U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIVISION, NEW MEXICO DISTRICT
ANALYTICAL REPORT/CHAIN OF CUSTODY**

Project Name & Number Cannon Air Force Base, Ground Water Sampling 463536004				PACKING AND SHIPPING DETAILS		
				Packed and Sealed for Shipping by <i>J. E. Ryan</i>		
Sampling Location Playa Lake, Cannon Air Force Base, New Mexico				Delivered to Shipper by <i>J. E. Ryan</i>		
				Sampling Status <input type="checkbox"/> Done <input checked="" type="checkbox"/> Continuing		
Team Leader Jerry Larson						
Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
18 APR 96	14:20	CAFB-P-0496-1	Groundwater	4	NITRATE (E353.2 / E354.1), SW3005/SW6010-ICP-TRACE-TOT.&DISS. METALS (Al,Sb,As,Ba,Be,Cd,Ca,Cr,Co,Cu,Fe, Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Tl,V,Zn)	ENVIRONMENTAL SAMPLE -04

Additional Comments

CHAIN OF CUSTODY RECORD				LABORATORY LOG-IN OF SAMPLE SHIPPING CONTAINER		
Relinquished by (signed)	Received by (signed)	Date	Time	Analytical Laboratory		Seal Intact upon Receipt
	<i>J. E. Ryan</i>	4/17/96	9:00	Quanterra Environmental 4955 Yarrow Street Arvada, CO 80002 ph: (303) 421-6611 Attention: Lindsay Breyer		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
						Condition of Contents 900
						Contents Temperature 2.2
					Laboratory Project Number 48350	

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**U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIVISION, NEW MEXICO DISTRICT
ANALYTICAL REQUEST/CHAIN OF CUSTODY**

Project Name & Number Cannon Air Force Base, Ground Water Sampling 463536004					PACKING AND SHIPPING DETAILS	
					Packed and Sealed for Shipping by <i>P. Etkin-Rozbal</i>	
Sampling Location Sewage Lagoons, Cannon Air Force Base, New Mexico					Delivered to Shipper by <i>P. Etkin-Rozbal</i>	
Team Leader Jerry Larson					Sampling Status <input type="checkbox"/> Done <input checked="" type="checkbox"/> Continuing	
Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
16 APR 96	0905	CAFB-E-0496-1	Groundwater	4	NITRATE (E353.2 / E354.1), SW3005/SW6010-ICP-TRACE TOT.&DISS. METALS (Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn)	ENVIRONMENTAL SAMPLE -01

Additional Comments

CHAIN OF CUSTODY RECORD				LABORATORY LOG-IN OF SAMPLE SHIPPING CONTAINER		
Relinquished by (signed)	Received by (signed)	Date	Time	Analytical Laboratory		Seal Intact upon Receipt <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	<i>J. Etkin-Rozbal</i>	11/17/96	900	Quanterra Environmental 4955 Yarrow Street Arvada, CO 80002 ph: (303) 421-6611 Attention: Lindsay Breyer		Condition of Contents <i>good</i>
						Contents Temperature <i>2.2</i>
						Laboratory Project Number <i>48350</i>

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**U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIVISION, NEW MEXICO DISTRICT
ANALYTICAL REQUEST/CHAIN OF CUSTODY**

Project Name & Number Cannon Air Force Base, Ground Water Sampling 463536004				PACKING AND SHIPPING DETAILS		
				Packed and Sealed for Shipping by <i>H. Alan Rybel</i>		
Sampling Location Sewage Lagoons, Cannon Air Force Base, New Mexico				Delivered to Shipper by <i>H. Alan Rybel</i>		
				Sampling Status <input type="checkbox"/> Done <input checked="" type="checkbox"/> Continuing		
Team Leader Jerry Larson						
Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
16 APR 96	1240	CAFB-F-0496-1	Groundwater	4	NITRATE (E353.2 / E354.1), SW3005/SW6010 ICP-TRACE-TOT. & DISS. METALS (Al,Sb,As,Ba,Be,Cd,Ca,Cr,Co,Cu,Fe, Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Tl,V,Zn)	ENVIRONMENTAL SAMPLE -02
16 APR 96	1000	CAFB-F-0496-2	ASTM-TYPE-II WATER	4	NITRATE (E353.2 / E354.1), SW3005/SW6010-ICP-TRACE TOT. & DISS. METALS (Al,Sb,As,Ba,Be,Cd,Ca,Cr,Co,Cu,Fe, Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Tl,V,Zn)	EQUIPMENT BLANK -03

Additional Comments

CHAIN OF CUSTODY RECORD				LABORATORY LOG-IN OF SAMPLE SHIPPING CONTAINER		
Relinquished by (signed)	Received by (signed)	Date	Time	Analytical Laboratory	Seal Intact upon Receipt <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	<i>Mellon</i>	7/17/96	9a	Quanterra Environmental 4955 Yarrow Street Arvada, CO 80002 ph: (303) 421-6611 Attention: Lindsay Breyer	Condition of Contents 910d	
					Contents Temperature 2.2	
					Laboratory Project Number 48350	

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**U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIVISION, NEW MEXICO DISTRICT
ANALYTICAL REQUEST/CHAIN OF CUSTODY**

Project Name & Number Cannon Air Force Base, Ground Water Sampling 463536004				PACKING AND SHIPPING DETAILS		
				Packed and Sealed for Shipping by <i>J. E. ...</i>		Seal Number 084774
Sampling Location Playa Lake, Cannon Air Force Base, New Mexico				Delivered to Shipper by <i>J. E. ...</i>		Airbill Number 0253916242
				Team Leader Jerry Larson		
Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
16 APR 96	14:20	CAFB-P-0496-1	Groundwater	4	NITRATE (E353.2 / E354.1), SW3005/SW6010-ICP-TRACE-TOT.&DISS. METALS (Al,Sb,As,Ba,Be,Cd,Ca,Cr,Co,Cu,Fe, Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Tl,V,Zn)	ENVIRONMENTAL SAMPLE -04

Additional Comments

CHAIN OF CUSTODY RECORD				LABORATORY LOG-IN OF SAMPLE SHIPPING CONTAINER		
Relinquished by (signed)	Received by (signed)	Date	Time	Analytical Laboratory		Seal Intact upon Receipt <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	<i>J. ...</i>	4/17/96	9:00	Quanterra Environmental 4955 Yarrow Street Arvada, CO 80002 ph: (303) 421-6611		Condition of Contents good
				Attention: Lindsay Breyer		Contents Temperature 2.0
						Laboratory Project Number 48350

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DODEC LABORATORY DATA REVIEW WORKSHEET

1.0 GENERAL INFORMATION

Data reviewer: BOB BRUCK
Date of review: 6/17/96
Sample project number: 48374
Project name: NM-CANNON AFB
Sample collection date: 4/17/96
Sample matrix and number: 5 Agrees

Type and number of samples in project:

Type	Number
Environmental	<u>3</u>
Trip blank	<u> </u>
Equipment blank	<u> </u>
Ambient blank	<u> </u>
MS/MSD	<u>2</u>
Other	<u> </u>

2.0 DATA REPORT

Date of Analytical Results Report: 5/23/96
Number of volumes in Raw Data Report: 1
Raw Data Report reviewed? Yes No X

Were all analyses requested on the COC form performed by the laboratory?
Yes X No

If no, list canceled analyses and reason for non-performance:

Were the samples properly preserved upon receipt by the laboratory?
Yes X No

If no, list laboratory ID for samples that were not properly preserved.

3.0 ANALYTICAL METHODS

Analytical methods used in this project

- _____ VOC by GC/MS (SW 8240, SW 8260, E524, E624)
- _____ Halogenated VOC by GC (SW 8010)
- _____ Aromatic VOC by GC (SW 8020)
- _____ SVOC by GC/MS (SW 8270)
- _____ PAH by HPLC (SW 8310)
- _____ Organochlorine pesticides and PCB (SW 8080)
- _____ Organophosphorous pesticides (SW 8140)
- _____ Chlorinated herbicides (SW 8150)
- _____ Dioxins and Furans (SW 8280)
- _____ Explosives (8330)
- _____ TOC (E415.1 or SW 9060)
- _____ TPH (E418.1)
- _____ Oil and Grease (E413.2)
- _____ TOX (SW9020)

- ICP screen for metals (SW 6010)
- _____ ICP/MS screen for metals (SW 6020)
- Trace ICP screen for metals (SW 6010 modified) *Sb, As, Cd, Pb, Se, Ti*
- _____ Antimony by GFAA (SW 7041)
- _____ Arsenic by GFAA (SW 7060)
- _____ Chromium (SW 7191 or 7196)
- _____ Lead by GFAA (SW 7421)
- _____ Mercury by CVAA (SW 7470 or 7471)
- _____ Selenium by GFAA (SW 7740)
- _____ Thallium by GFAA (SW 7841)
- _____ Inorganic anions (E300.0)
- _____ Alkalinity (310.1)
- _____ Cyanide, total and amenable (SW 9010/9012)
- _____ Nitrogen, ammonia (E350.1)
- _____ Nitrogen, TKN (E351.2)
- Nitrogen, nitrate (E353.2)
- Nitrogen, nitrate plus nitrite (E353.2)
- Nitrogen, nitrite (E354.1)
- _____ Phosphorous, total or ortho (E365.3)
- _____ Sulfate (E375.4)
- _____ Sulfide (E376.2)
- _____ TDS (E160.1)
- _____ pH (SW 9040 or 9045)
- _____ Percent moisture (D2216)

- _____ Gross alpha and gross beta radioactivity (SW 9310)
- _____ Alpha-emitting radium isotopes (SW 9315)
- _____ Radium-228 (SW 9320)
- _____ Uranium (908.1)

- _____ Other analyses : _____
- _____
- _____
- _____

Were analytical holding times met? Yes X No _____

If no, list analytical method and laboratory ID for samples that exceeded holding time:

Did surrogate recoveries meet QC acceptance criteria?
Yes _____ No _____

NA

If no, list analytical method, laboratory ID, and surrogates that did not meet acceptance criteria:

Did actual reporting limits meet project detection limits?
Organic analyses : Yes _____ No _____

NA

If no, list analytical method, laboratory ID, and reason for non-conformance:

Inorganic analyses: Yes _____ No X

SAMPLES -001 & -002
For NO_2 & NO_3

Reporting limits for GFAA metals and inorganic anions may be raised when: (1) sample concentrations exceed the instrument linear range and (2) target analytes are subject to matrix interferences. Reporting limits for ICP metals and mercury by CVAA are typically only raised when the sample concentration exceeds the instrument linear range.

Did DCS meet QC acceptance criteria? Yes X No _____

If no, list analytical method, laboratory ID, and reason for non-conformance:

Did SCS meet QC acceptance criteria? Yes _____ No _____ ^{NA}

If no, list analytical method, laboratory ID, and reason for non-conformance:

Were any target compounds found in the method, trip, equipment, or ambient blanks above the RL? Yes _____ No

If yes, list the analytical method, laboratory ID, type of blank and compound:

Did the MS/MSD meet QC acceptance criteria? Yes No _____

MS/MSD data are used to evaluate the effect of the sample matrix on the analytical process and should only be used in conjunction with other available laboratory QC information to evaluate precision and accuracy.

If no, list the analytical method, laboratory ID, and reason for non-conformance :

ICP METALS (DISSOLVED) MS/SD US MAY 96-N2 DID NOT MEET QC LIMITS FOR
CU, FE, AND K, THE ASSOCIATED SCS WAS WITHIN QC LIMITS

Additional comments:

DISSOLVED METAL VALUES > TOTAL METAL VALUES BUT WITHIN ACCEPTABLE RANGE

IV. QUALITY CONTROL REPORT

The Quanterra laboratories operate under a vigorous QA/QC program designed to ensure the generation of scientifically valid, legally defensible data by monitoring every aspect of laboratory operations. Routine QA/QC procedures include the use of approved methodologies, independent verification of analytical standards, use of duplicate Laboratory Control Samples to assess the precision and accuracy of the methodology on a routine basis, and a rigorous system of data review.

The standard laboratory QC package is designed to:

- 1) establish a strong, cost-effective QC program that ensures the generation of scientifically valid, legally defensible data
- 2) assess the laboratory's performance of the analytical method using control limits generated with a well-defined matrix
- 3) establish clear-cut guidelines for acceptability of analytical data so that QC decisions can be made immediately at the bench, and
- 4) provide a standard set of reportables which assures the client of the quality of his data.

The Quanterra QC program is based upon monitoring the precision and accuracy of an analytical method by analyzing a set of Duplicate Control Samples (DCS) at frequent, well-defined intervals. Each DCS is a well-characterized matrix which is spiked with target compounds at 5-100 times the reporting limit, depending upon the methodology being monitored. The purpose of the DCS is not to duplicate the sample matrix, but rather to provide an interference-free, homogeneous matrix from which to gather data to establish control limits. These limits are used to determine whether data generated by the laboratory on any given day is in control.

Control limits for accuracy (percent recovery) are based on the average, historical percent recovery +/- 3 standard deviation units. Control limits for precision (relative percent difference) range from 0 (identical duplicate DCS results) to the average, historical relative percent difference + 3 standard deviation units. These control limits are fairly narrow based on the consistency of the matrix being monitored and are updated on a quarterly basis.

For each batch of samples analyzed, an additional control measure is taken in the form of a Single Control Sample (SCS). The SCS consists of a control matrix that is spiked with surrogate compounds appropriate to the method being used. In cases where no surrogate is available, (e.g., metals or conventional analyses) a single DCS serves as the control sample. An SCS is prepared for each sample lot for which the DCS pair are not analyzed. The recovery of the SCS is charted in exactly the same manner as described for the DCS, and provides a daily check on the performance of the method.

Accuracy for DCS and SCS is measured by Percent Recovery.

$$\% \text{ Recovery} = \frac{\text{Measured Concentration}}{\text{Actual Concentration}} \times 100$$

Precision for DCS is measured by Relative Percent Difference (RPD).

$$\text{RPD} = \frac{|\text{Measured Concentration DCS1} - \text{Measured Concentration DCS2}|}{(\text{Measured Concentration DCS1} + \text{Measured Concentration DCS2})/2} \times 100$$

All samples analyzed concurrently by the same test are assigned the same QC lot number. Projects which contain numerous samples, analyzed over several days, may have multiple QC lot numbers associated with each test. The QC information which follows includes a listing of the QC lot numbers associated with each of the samples reported, DCS and SCS (where applicable) recoveries from the QC lots associated with the samples, and control limits for these lots. The QC data is reported by test code, in the order that the tests are reported in the analytical results section of this report.

QC LOT ASSIGNMENT REPORT
Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
048374-0001-SA	AQUEOUS	ICP-AT	23 APR 96-N1	23 APR 96-N1
048374-0001-SA	AQUEOUS	ICP-TRA-AT	23 APR 96-N1	23 APR 96-N1
048374-0001-SA	AQUEOUS	ICP-AD	08 MAY 96-N2	08 MAY 96-N2
048374-0001-SA	AQUEOUS	ICP-TR-ADT	19 MAY 96-N4	19 MAY 96-N4
048374-0002-SA	AQUEOUS	ICP-AT	23 APR 96-N1	23 APR 96-N1
048374-0002-SA	AQUEOUS	ICP-TRA-AT	23 APR 96-N1	23 APR 96-N1
048374-0002-SA	AQUEOUS	ICP-AD	08 MAY 96-N2	08 MAY 96-N2
048374-0002-SA	AQUEOUS	ICP-TR-ADT	19 MAY 96-N4	19 MAY 96-N4
048374-0003-SA	AQUEOUS	ICP-AT	23 APR 96-N1	23 APR 96-N1
048374-0003-SA	AQUEOUS	ICP-TRA-AT	23 APR 96-N1	23 APR 96-N1
048374-0003-SA	AQUEOUS	ICP-AD	08 MAY 96-N2	08 MAY 96-N2
048374-0003-SA	AQUEOUS	ICP-TR-ADT	19 MAY 96-N4	19 MAY 96-N4
048374-0003-MS	AQUEOUS	ICP-AT	23 APR 96-N1	23 APR 96-N1
048374-0003-MS	AQUEOUS	ICP-TRA-AT	23 APR 96-N1	23 APR 96-N1
048374-0003-MS	AQUEOUS	ICP-AD	08 MAY 96-N2	08 MAY 96-N2
048374-0003-MS	AQUEOUS	ICP-TR-ADT	19 MAY 96-N4	19 MAY 96-N4
048374-0003-SD	AQUEOUS	ICP-AT	23 APR 96-N1	23 APR 96-N1
048374-0003-SD	AQUEOUS	ICP-TRA-AT	23 APR 96-N1	23 APR 96-N1
048374-0003-SD	AQUEOUS	ICP-AD	08 MAY 96-N2	08 MAY 96-N2
048374-0003-SD	AQUEOUS	ICP-TR-ADT	19 MAY 96-N4	19 MAY 96-N4

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation

Analyte	Concentration			AVG	Accuracy Average(%)		Precision (RPD)	
	Spiked	DCS1	Measured DCS2		DCS	Limits	DCS	Limits
Aluminum	2.00	1.99	1.99	1.99	100	80-116	0.35	10
Antimony	0.500	0.501	0.498	0.499	100	80-115	0.65	14
Arsenic	2.000	1.93	1.91	1.92	96	80-115	0.74	17
Barium	2.00	1.99	2.02	2.01	100	80-114	1.6	10
Beryllium	0.0500	0.0501	0.0501	0.0501	100	80-120	0.0	10
Boron	1.00	1.05	1.05	1.05	105	80-120	0.31	10
Cadmium	0.0500	0.0462	0.0489	0.0476	95	80-119	5.7	16
Calcium	50	49.3	50.0	49.7	99	80-114	1.4	10
Chromium	0.200	0.181	0.187	0.184	92	80-116	3.4	11
Cobalt	0.500	0.503	0.506	0.504	101	80-114	0.75	10
Copper	0.250	0.254	0.252	0.253	101	80-120	0.74	10
Iron	1.00	1.01	1.02	1.02	102	80-120	0.90	11
Lead	0.500	0.504	0.523	0.514	103	80-119	3.6	10
Lithium	1.00	0.974	0.957	0.965	97	80-120	1.8	20
Magnesium	50.0	49.6	50.7	50.2	100	81-120	2.2	10
Manganese	0.500	0.497	0.506	0.501	100	80-116	1.8	10
Molybdenum	1.00	0.956	0.986	0.971	97	80-120	3.1	20
Nickel	0.500	0.494	0.494	0.494	99	80-114	0.012	10
Potassium	50.0	51.9	51.1	51.5	103	80-120	1.4	13
Selenium	2.00	1.96	1.96	1.96	98	80-120	0.26	20
Silver	0.050	0.0493	0.0493	0.0493	99	80-119	0.020	15
Sodium	50	50.9	51.8	51.3	103	80-120	1.6	10
Tin	2.00	1.87	1.92	1.89	95	80-120	2.2	20
Titanium	1.00	0.999	1.01	1.00	100	80-120	0.77	20
Vanadium	0.500	0.495	0.498	0.497	99	80-116	0.44	10
Zinc	0.500	0.478	0.486	0.482	96	80-120	1.8	13

Category: ICP-TRA-AT
Matrix: AQUEOUS
QC Lot: 23 APR 96-N1
Concentration Units: mg/L

Antimony	0.50	0.483	0.481	0.482	96	80-120	0.46	20
Arsenic	2.0	1.88	1.89	1.89	94	80-120	0.56	20
Cadmium	0.050	0.0508	0.0511	0.0509	102	80-120	0.52	20
Lead	0.50	0.494	0.495	0.494	99	80-120	0.24	20
Selenium	2.0	1.88	1.87	1.87	94	80-120	0.33	20
Thallium	2.0	1.95	1.94	1.94	97	80-120	0.015	20

Calculations are performed before rounding to avoid round-off errors in calculated results.

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation (cont.)

Analyte	Concentration			AVG	Accuracy Average (%)		Precision (RPD)	
	Spiked	DCS1	Measured DCS2		DCS	Limits	DCS	Limits
Aluminum	5.00	4.94	5.08	5.01	100	90-110	2.8	20
Antimony	0.500	0.478	0.503	0.491	98	90-110	5.1	20
Arsenic	0.500	0.448	0.474	0.461	92	90-110	5.6	20
Barium	0.500	0.503	0.512	0.507	101	90-110	1.9	20
Beryllium	0.500	0.485	0.503	0.494	99	90-110	3.7	20
Boron	0.500	0.504	0.518	0.511	102	90-110	2.8	20
Cadmium	0.500	0.488	0.485	0.487	97	90-110	0.72	20
Calcium	20.0	19.2	19.6	19.4	97	90-110	2.1	20
Chromium	0.500	0.482	0.493	0.488	98	90-110	2.2	20
Cobalt	0.500	0.502	0.507	0.504	101	90-110	1.2	20
Copper	0.500	0.495	0.510	0.502	100	90-110	2.9	20
Iron	5.00	4.95	5.07	5.01	100	90-110	2.3	20
Lead	0.500	0.522	0.513	0.518	104	90-110	1.7	20
Lithium	5.00	5.26	5.20	5.23	105	90-110	1.3	20
Magnesium	20.0	19.6	20.1	19.9	99	90-110	2.4	20
Manganese	0.500	0.505	0.517	0.511	102	90-110	2.4	20
Molybdenum	0.500	0.500	0.521	0.511	102	90-110	4.1	20
Nickel	0.500	0.488	0.508	0.498	100	90-110	4.1	20
Potassium	50.0	52.7	50.8	51.8	104	90-110	3.6	20
Selenium	5.00	4.91	4.91	4.91	98	90-110	0.15	20
Silica as SiO2	100	98.3	99.9	99.1	99	90-110	1.7	20
Silver	0.500	0.491	0.493	0.492	98	90-110	0.27	20
Sodium	200	200	202	201	100	90-110	0.60	20
Vanadium	0.500	0.499	0.511	0.505	101	90-110	2.4	20
Zinc	0.500	0.481	0.489	0.485	97	90-110	1.7	20

Category: ICP-TR-ADT
Matrix: AQUEOUS
QC Lot: 19 MAY 96-N4
Concentration Units: mg/L

Antimony	0.500	0.518	0.527	0.522	104	80-120	1.7	20
Arsenic	2.000	2.09	2.12	2.10	105	80-120	1.7	20
Cadmium	0.0500	0.0536	0.0544	0.0540	108	80-120	1.6	20
Lead	0.500	0.523	0.532	0.527	105	80-120	1.7	20
Selenium	2.000	2.25	2.28	2.27	113	80-120	1.4	20
Thallium	2.000	2.11	2.14	2.13	106	80-120	1.3	20

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT
Metals Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: ICP-AFIR-AT			
Matrix: AQUEOUS			
QC Lot: 23 APR 96-N1 QC Run: 23 APR 96-N1			
Aluminum	ND	mg/L	0.20
Barium	ND	mg/L	0.10
Beryllium	ND	mg/L	0.0020
Calcium	ND	mg/L	5.0
Chromium	ND	mg/L	0.030
Cobalt	ND	mg/L	0.040
Copper	ND	mg/L	0.030
Iron	ND	mg/L	0.040
Magnesium	ND	mg/L	5.0
Manganese	ND	mg/L	0.010
Molybdenum	ND	mg/L	0.040
Nickel	ND	mg/L	0.040
Potassium	ND	mg/L	5.0
Silver	ND	mg/L	0.030
Sodium	ND	mg/L	5.0
Vanadium	ND	mg/L	0.040
Zinc	ND	mg/L	0.010

Test: ICP-TRACE-AT
Matrix: AQUEOUS
QC Lot: 23 APR 96-N1 QC Run: 23 APR 96-N1

Antimony	ND	mg/L	0.010
Arsenic	ND	mg/L	0.010
Cadmium	ND	mg/L	0.0050
Lead	ND	mg/L	0.0030
Selenium	ND	mg/L	0.0050
Thallium	ND	mg/L	0.010

Test: ICP-AFIR-AD
Matrix: AQUEOUS
QC Lot: 08 MAY 96-N2 QC Run: 08 MAY 96-N2

Aluminum	ND	mg/L	0.20
Barium	ND	mg/L	0.10
Beryllium	ND	mg/L	0.0020
Calcium	ND	mg/L	5.0
Chromium	ND	mg/L	0.030
Cobalt	ND	mg/L	0.040

METHOD BLANK REPORT
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: ICP-AFIR-AD			
Matrix: AQUEOUS			
QC Lot: 08 MAY 96-N2 QC Run: 08 MAY 96-N2			
Copper	ND	mg/L	0.030
Iron	ND	mg/L	0.040
Magnesium	ND	mg/L	5.0
Manganese	ND	mg/L	0.010
Molybdenum	ND	mg/L	0.040
Nickel	ND	mg/L	0.040
Potassium	ND	mg/L	5.0
Silver	ND	mg/L	0.030
Sodium	ND	mg/L	5.0
Vanadium	ND	mg/L	0.040
Zinc	ND	mg/L	0.010

Test: ICP-TRACE-ADT
Matrix: AQUEOUS
QC Lot: 19 MAY 96-N4 QC Run: 19 MAY 96-N4

Antimony	ND	mg/L	0.010
Arsenic	ND	mg/L	0.010
Cadmium	ND	mg/L	0.0050
Lead	ND	mg/L	0.0030
Selenium	ND	mg/L	0.0050
Thallium	ND	mg/L	0.010

Test: ICP-AFIR-AT
Matrix: AQUEOUS
QC Lot: 23 APR 96-N1 QC Run: 23 APR 96-N1

Aluminum	ND	mg/L	0.20
Barium	ND	mg/L	0.10
Beryllium	ND	mg/L	0.0020
Calcium	ND	mg/L	5.0
Chromium	ND	mg/L	0.030
Cobalt	ND	mg/L	0.040
Copper	ND	mg/L	0.030
Iron	ND	mg/L	0.040
Magnesium	ND	mg/L	5.0
Manganese	ND	mg/L	0.010
Molybdenum	ND	mg/L	0.040
Nickel	ND	mg/L	0.040

METHOD BLANK REPORT
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: ICP-AFIR-AT			
Matrix: AQUEOUS			
QC Lot: 23 APR 96-N1 QC Run: 23 APR 96-N1			
Potassium	ND	mg/L	5.0
Silver	ND	mg/L	0.030
Sodium	ND	mg/L	5.0
Vanadium	ND	mg/L	0.040
Zinc	ND	mg/L	0.010

Test: ICP-TRACE-AT
Matrix: AQUEOUS
QC Lot: 23 APR 96-N1 QC Run: 23 APR 96-N1

Antimony	ND	mg/L	0.010
Arsenic	ND	mg/L	0.010
Cadmium	ND	mg/L	0.0050
Lead	ND	mg/L	0.0030
Selenium	ND	mg/L	0.0050
Thallium	ND	mg/L	0.010

Test: ICP-AFIR-AD
Matrix: AQUEOUS
QC Lot: 08 MAY 96-N2 QC Run: 08 MAY 96-N2

Aluminum	ND	mg/L	0.20
Barium	ND	mg/L	0.10
Beryllium	ND	mg/L	0.0020
Calcium	ND	mg/L	5.0
Chromium	ND	mg/L	0.030
Cobalt	ND	mg/L	0.040
Copper	ND	mg/L	0.030
Iron	ND	mg/L	0.040
Magnesium	ND	mg/L	5.0
Manganese	ND	mg/L	0.010
Molybdenum	ND	mg/L	0.040
Nickel	ND	mg/L	0.040
Potassium	ND	mg/L	5.0
Silver	ND	mg/L	0.030
Sodium	ND	mg/L	5.0
Vanadium	ND	mg/L	0.040
Zinc	ND	mg/L	0.010

METHOD BLANK REPORT
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: ICP-TRACE-ADT			
Matrix: AQUEOUS			
QC Lot: 19 MAY 96-N4 QC Run: 19 MAY 96-N4			
Antimony	ND	mg/L	0.010
Arsenic	ND	mg/L	0.010
Cadmium	ND	mg/L	0.0050
Lead	ND	mg/L	0.0030
Selenium	ND	mg/L	0.0050
Thallium	ND	mg/L	0.010

QC LOT ASSIGNMENT REPORT - MS QC
Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)	MS QC Run Number (SA,MS,SD,DU)
048374-0001-SA	AQUEOUS	ICP-AT	23 APR 96-N1	23 APR 96-N1	23 APR 96-N1
048374-0001-SA	AQUEOUS	ICP-TRA-AT	23 APR 96-N1	23 APR 96-N1	23 APR 96-N1
048374-0001-SA	AQUEOUS	ICP-AD	08 MAY 96-N2	08 MAY 96-N2	08 MAY 96-N2
048374-0001-SA	AQUEOUS	ICP-TR-ADT	19 MAY 96-N4	19 MAY 96-N4	19 MAY 96-N4
048374-0002-SA	AQUEOUS	ICP-AT	23 APR 96-N1	23 APR 96-N1	23 APR 96-N1
048374-0002-SA	AQUEOUS	ICP-TRA-AT	23 APR 96-N1	23 APR 96-N1	23 APR 96-N1
048374-0002-SA	AQUEOUS	ICP-TR-ADT	19 MAY 96-N4	19 MAY 96-N4	19 MAY 96-N4
048374-0003-MS	AQUEOUS	ICP-AT	23 APR 96-N1	23 APR 96-N1	23 APR 96-N1
048374-0003-MS	AQUEOUS	ICP-TRA-AT	23 APR 96-N1	23 APR 96-N1	23 APR 96-N1
048374-0003-MS	AQUEOUS	ICP-AD	08 MAY 96-N2	08 MAY 96-N2	08 MAY 96-N2
048374-0003-MS	AQUEOUS	ICP-TR-ADT	19 MAY 96-N4	19 MAY 96-N4	19 MAY 96-N4
048374-0003-SA	AQUEOUS	ICP-AT	23 APR 96-N1	23 APR 96-N1	23 APR 96-N1
048374-0003-SA	AQUEOUS	ICP-TRA-AT	23 APR 96-N1	23 APR 96-N1	23 APR 96-N1
048374-0003-SA	AQUEOUS	ICP-TR-ADT	19 MAY 96-N4	19 MAY 96-N4	19 MAY 96-N4
048374-0003-SD	AQUEOUS	ICP-AT	23 APR 96-N1	23 APR 96-N1	23 APR 96-N1
048374-0003-SD	AQUEOUS	ICP-TRA-AT	23 APR 96-N1	23 APR 96-N1	23 APR 96-N1
048374-0003-SD	AQUEOUS	ICP-TR-ADT	19 MAY 96-N4	19 MAY 96-N4	19 MAY 96-N4

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC REPORT
 Metals Analysis and Preparation
 Project: 048374

Category: ICP-AT ICP Metals / Total
 Matrix: AQUEOUS
 Sample: 048374-0003
 MS Run: 23 APR 96-N1
 Units: mg/L

Analyte	Sample Result	Concentration		Amount Spiked		% Recovery		Recov. Accep. Limits	RPD MS-MSD	RPD Accept Limits
		MS Result	MSD Result	MS	MSD	MS	MSD			
Aluminum	ND	2.0	2.0	2.0	2.0	102	102	80-120	0.3	20
Antimony	NA	NA	NA	0.50	0.50	NC	NC	80-120	0.0	20
Arsenic	NA	NA	NA	0.50	0.50	NC	NC	80-120	0.0	20
Barium	ND	2.0	2.0	2.0	2.0	99	99	80-120	0.0	20
Beryllium	ND	0.051	0.050	0.050	0.050	102	100	80-120	2.1	20
Boron	NA	NA	NA	10	10	NC	NC	80-120	0.0	20
Cadmium	ND	0.047	0.047	0.050	0.050	95	94	80-120	1.0	20
Calcium	47	95	95	50	50	96	95	80-120	0.3	20
Chromium	ND	0.19	0.21	0.20	0.20	96	104	80-120	7.9	20
Cobalt	ND	0.49	0.49	0.50	0.50	98	98	80-120	0.4	20
Copper	ND	0.25	0.25	0.25	0.25	100	99	80-120	0.6	20
Iron	1.2	2.2	2.1	1.0	1.0	100	88	80-120	5.4	20
Lead	NA	NA	NA	0.50	0.50	NC	NC	80-120	0.0	20
Lithium	NA	NA	NA	5.0	5.0	NC	NC	80-120	0.0	20
Magnesium	43	92	92	50	50	99	97	80-120	0.8	20
Manganese	0.023	0.51	0.51	0.50	0.50	96	97	80-120	0.8	20
Molybdenum	ND	NA	NA	0.50	0.50	NC	NC	80-120	0.0	20
Nickel	ND	0.51	0.50	0.50	0.50	101	101	80-120	0.8	20
Potassium	7.5	57	55	50	50	98	96	80-120	2.3	20
Selenium	NA	NA	NA	0.50	0.50	NC	NC	80-120	0.0	20
Silver	ND	0.047	0.048	0.050	0.050	94	96	80-120	2.7	20
Sodium	54	100	100	50	50	97	94	80-120	1.4	20
Thallium	NA	NA	NA	5.0	5.0	NC	NC	80-120	0.0	20
Tin	NA	NA	NA	0.50	0.50	NC	NC	80-120	0.0	20
Titanium	NA	NA	NA	0.50	0.50	NC	NC	80-120	0.0	20
Vanadium	ND	0.51	0.51	0.50	0.50	102	102	80-120	0.0	20
Zinc	0.051	0.52	0.52	0.50	0.50	93	94	80-120	0.1	20

NA = Not Applicable
 NC = Not Calculated, calculation not applicable.
 ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC REPORT
 tals Analysis and Preparation
 bject: 048374 (cont.)

Category: ICP-TRA-AT ICP Metals / Total by Trace ICP
 Matrix: AQUEOUS
 Sample: 048374-0003
 MS Run: 23 APR 96-N1
 Units: mg/L

Analyte	Sample Result	Concentration		Amount Spiked		% Recovery		Recov. Accep. Limits	RPD MS-MSD	RPD Accept Limits
		MS Result	MSD Result	MS	MSD	MS	MSD			
Antimony	ND	0.49	0.48	0.50	0.50	99	96	80-120	3.1	20
Arsenic	ND	1.9	1.9	2.0	2.0	97	94	80-120	3.3	20
Cadmium	ND	0.051	0.050	0.050	0.050	102	99	80-120	2.4	20
Lead	ND	0.50	0.49	0.50	0.50	101	98	80-120	2.4	20
Selenium	ND	1.9	1.9	2.0	2.0	97	94	80-120	3.0	20
Thallium	ND	2.0	1.9	2.0	2.0	100	97	80-120	2.9	20

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC REPORT
 Matrix Analysis and Preparation
 Project: 048374 (cont.)

Category: ICP-AD ICP Metals / Dissolved
 Matrix: AQUEOUS
 Sample: 048374-0003
 MS Run: 08 MAY 96-N2
 Units: mg/L

Analyte	Sample Result	Concentration		Amount Spiked		% Recovery		Recov. Accep. Limits	RPD MS-MSD	RPD Accept Limits
		MS Result	MSD Result	MS	MSD	MS	MSD			
Aluminum	ND	2.3	2.2	2.0	2.0	114	110	85-115	3.9	20
Antimony	NA	NA	NA	0.50	0.50	NC	NC	85-115	0.0	10
Arsenic	NA	NA	NA	0.50	0.50	NC	NC	85-115	0.0	10
Barium	ND	2.3	2.2	2.0	2.0	114	109	85-115	4.4	10
Beryllium	ND	0.050	0.048	0.050	0.050	101	96	85-115	4.1	10
Boron	NA	NA	NA	10	10	NC	NC	85-115	0.0	10
Cadmium	NA	NA	NA	0.050	0.050	NC	NC	85-115	0.0	10
Calcium	48	100	100	50	50	107	102	85-115	2.3	10
Chromium	ND	0.20	0.32	0.20	0.20	101	160	85-115	45	10
Cobalt	ND	0.56	0.54	0.50	0.50	113	108	85-115	4.6	10
Copper	ND	0.28	0.27	0.25	0.25	112	109	85-115	2.7	10
Iron	ND	1.1	1.6	1.0	1.0	111	156	85-115	34	10
Lead	NA	NA	NA	0.50	0.50	NC	NC	85-115	0.0	10
Lithium	NA	NA	NA	5.0	5.0	NC	NC	85-115	0.0	10
Magnesium	46	100	100	50	50	114	110	85-115	2.1	10
Manganese	ND	0.56	0.56	0.50	0.50	112	112	85-115	0.6	10
Molybdenum	ND	NA	NA	0.50	0.50	NC	NC	85-115	0.0	10
Nickel	ND	0.55	0.59	0.50	0.50	111	117	85-115	5.6	10
Potassium	8.0	69	62	50	50	122	109	85-115	10	10
Selenium	NA	NA	NA	0.50	0.50	NC	NC	85-115	0.0	10
Silica as SiO2	NA	NA	NA	5.0	5.0	NC	NC	85-115	0.0	20
Silver	ND	0.052	0.050	0.050	0.050	104	100	85-115	4.3	10
Sodium	56	110	110	50	50	110	102	85-115	3.8	10
Thallium	ND	ND	ND	5.0	5.0	NC	NC	85-115	NC	10
Tin	ND	ND	ND	0.50	0.50	NC	NC	85-115	NC	10
Titanium	ND	ND	ND	0.50	0.50	NC	NC	85-115	NC	10
Vanadium	ND	0.57	0.55	0.50	0.50	114	109	85-115	4.1	10
Zinc	ND	0.56	0.53	0.50	0.50	112	107	85-115	4.8	10

NA = Not Applicable
 NC = Not Calculated, calculation not applicable.
 ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC REPORT
 Metals Analysis and Preparation
 Project: 048374 (cont.)

Category: ICP-TR-ADT ICP Metals / Total by Trace ICP (Dissolved by Digestion)

Matrix: AQUEOUS
 Sample: 048374-0003
 MS Run: 19 MAY 96-N4
 Units: mg/L

Analyte	Sample Result	Concentration		Amount Spiked		% Recovery		Recov. Accep. Limits	RPD MS-MSD	RPD Accept Limits
		MS Result	MSD Result	MS	MSD	MS	MSD			
Antimony	ND	0.52	0.53	0.50	0.50	104	106	80-120	1.8	20
Arsenic	ND	2.1	2.1	2.0	2.0	105	106	80-120	0.9	20
Cadmium	ND	0.053	0.053	0.050	0.050	106	107	80-120	1.0	20
Lead	ND	0.52	0.53	0.50	0.50	104	105	80-120	1.6	20
Selenium	0.0064	2.3	2.3	2.0	2.0	113	115	80-120	1.3	20
Thallium	ND	2.1	2.2	2.0	2.0	106	108	80-120	1.2	20

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

QC LOT ASSIGNMENT REPORT
Wet Chemistry Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
048374-0001-SA	AQUEOUS	NO3+NO2-A	24 APR 96-N2	24 APR 96-N2
048374-0001-SA	AQUEOUS	NO2-A	18 APR 96-N1	18 APR 96-N1
048374-0002-SA	AQUEOUS	NO3+NO2-A	24 APR 96-N2	24 APR 96-N2
048374-0002-SA	AQUEOUS	NO2-A	18 APR 96-N1	18 APR 96-N1
048374-0003-SA	AQUEOUS	NO3+NO2-A	24 APR 96-N2	24 APR 96-N2
048374-0003-SA	AQUEOUS	NO2-A	18 APR 96-N1	18 APR 96-N1
048374-0003-MS	AQUEOUS	NO3+NO2-A	24 APR 96-N2	24 APR 96-N2
048374-0003-MS	AQUEOUS	NO2-A	18 APR 96-N1	18 APR 96-N1
048374-0003-SD	AQUEOUS	NO3+NO2-A	24 APR 96-N2	24 APR 96-N2
048374-0003-SD	AQUEOUS	NO2-A	18 APR 96-N1	18 APR 96-N1

DUPLICATE CONTROL SAMPLE REPORT
Wet Chemistry Analysis and Preparation

Analyte	Spiked	Concentration		Measured DCS2	AVG	Accuracy Average(%)		Precision (RPD)	
		DCS1	DCS2			DCS	Limits	DCS	Limits
Category: NO3+NO2-A Matrix: AQUEOUS QC Lot: 24 APR 96-N2 Concentration Units: mg/L									
Nitrate plus Nitrite as N	15.2	15.8	15.8	15.8	104	90-116	0.18	10	
Category: NO2-A Matrix: AQUEOUS QC Lot: 18 APR 96-N1 Concentration Units: mg/L									
Nitrite as N	0.100	0.110	0.110	0.110	110	91-113	0.0	10	

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT
Wet Chemistry Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: NO3+NO2-TEC-A Matrix: AQUEOUS QC Lot: 24 APR 96-N2 QC Run: 24 APR 96-N2			
Nitrate plus Nitrite as N	ND	mg/L	0.10
Test: NO2-SPEC-A Matrix: AQUEOUS QC Lot: 18 APR 96-N1 QC Run: 18 APR 96-N1			
Nitrite as N	ND	mg/L	0.010
Test: NO3+NO2-TEC-A Matrix: AQUEOUS QC Lot: 24 APR 96-N2 QC Run: 24 APR 96-N2			
Nitrate plus Nitrite as N	ND	mg/L	0.10
Test: NO2-SPEC-A Matrix: AQUEOUS QC Lot: 18 APR 96-N1 QC Run: 18 APR 96-N1			
Nitrite as N	ND	mg/L	0.010

QC LOT ASSIGNMENT REPORT - MS QC
Wet Chemistry Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)	MS QC Run Number (SA,MS,SD,DU)
048374-0001-SA	AQUEOUS	NO3+NO2-A	24 APR 96-N2	24 APR 96-N2	24 APR 96-N2
048374-0001-SA	AQUEOUS	NO2-A	18 APR 96-N1	18 APR 96-N1	18 APR 96-N1
048374-0002-SA	AQUEOUS	NO3+NO2-A	24 APR 96-N2	24 APR 96-N2	24 APR 96-N2
048374-0002-SA	AQUEOUS	NO2-A	18 APR 96-N1	18 APR 96-N1	18 APR 96-N1
048374-0003-MS	AQUEOUS	NO3+NO2-A	24 APR 96-N2	24 APR 96-N2	24 APR 96-N2
048374-0003-MS	AQUEOUS	NO2-A	18 APR 96-N1	18 APR 96-N1	18 APR 96-N1
048374-0003-SA	AQUEOUS	NO3+NO2-A	24 APR 96-N2	24 APR 96-N2	24 APR 96-N2
048374-0003-SA	AQUEOUS	NO2-A	18 APR 96-N1	18 APR 96-N1	18 APR 96-N1
048374-0003-SD	AQUEOUS	NO3+NO2-A	24 APR 96-N2	24 APR 96-N2	24 APR 96-N2
048374-0003-SD	AQUEOUS	NO2-A	18 APR 96-N1	18 APR 96-N1	18 APR 96-N1

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC REPORT
 Analytical Chemistry Analysis and Preparation
 Project: 048374

Category: NO3+NO2-A Nitrate + Nitrite (Aqueous)
 Matrix: AQUEOUS
 Sample: 048374-0003
 MS Run: 24 APR 96-N2
 Units: mg/L

Analyte	Sample Result	Concentration		Amount Spiked		% Recovery		Recov. Accep.	RPD	RPD Accept
		MS Result	MSD Result	MS	MSD	MS	MSD	Limits	MS-MSD	Limits
Nitrate plus Nitrite as N	1.2	4.1	4.2	3.0	3.0	99	99	89-109	0.1	16

Category: NO2-A Nitrite
 Matrix: AQUEOUS
 Sample: 048374-0003
 MS Run: 18 APR 96-N1
 Units: mg/L

Analyte	Sample Result	Concentration		Amount Spiked		% Recovery		Recov. Accep.	RPD	RPD Accept
		MS Result	MSD Result	MS	MSD	MS	MSD	Limits	MS-MSD	Limits
Nitrite as N	ND	0.11	0.11	0.10	0.10	106	106	90-110	0.0	14

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

**U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIVISION, NEW MEXICO DISTRICT
ANALYTICAL REQUEST/CHAIN OF CUSTODY**

Project Name & Number Cannon Air Force Base, Ground Water Sampling 463536004				PACKING AND SHIPPING DETAILS		
				Packed and Sealed for Shipping by <i>H. Alan Royal</i>		Seal Number 081778
Sampling Location Sewage Lagoons, Cannon Air Force Base, New Mexico				Delivered to Shipper by <i>H. Alan Royal</i>		Airbill Number 0255916231
				Team Leader Jerry Larson		
Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
7/17 APR 96	1300	CAFB-G-0496-1	Groundwater	4	NITRATE (E353.2 / E354.1), SW3005/SW6010-ICP-TRACE TOT. & DISS. METALS (Al,Sb,As,Ba,Bc,Cd,Ca,Cr,Co,Cu,Fe, Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Tl,V,Zn)	ENVIRONMENTAL SAMPLE -1
7/17 APR 96	1300	CAFB-G-0496-2	Groundwater	4	NITRATE (E353.2 / E354.1), SW3005/SW6010-ICP-TRACE-TOT. & DISS. METALS (Al,Sb,As,Ba,Bc,Cd,Ca,Cr,Co,Cu,Fe, Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Tl,V,Zn)	ENVIRONMENTAL SAMPLE -2

Additional Comments

CHAIN OF CUSTODY RECORD				LABORATORY LOG-IN OF SAMPLE SHIPPING CONTAINER		
Relinquished by (signed)	Received by (signed)	Date	Time	Analytical Laboratory	Seal Intact upon Receipt <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	<i>JR</i>	7/18/96	900	Quanterra Environmental 4955 Yarrow Street Arvada, CO 80002 ph: (303) 421-6611 Attention: Lindsay Breyer	Condition of Contents <i>good</i>	
					Contents Temperature <i>4.7</i>	
					Laboratory Project Number <i>78374</i>	

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**U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIVISION, NEW MEXICO DISTRICT
ANALYTICAL REQUEST/CHAIN OF CUSTODY**

Project Name & Number Cannon Air Force Base, Ground Water Sampling 463536004		PACKING AND SHIPPING DETAILS	
		Packed and Sealed for Shipping by <i>Fr. Elmer Koyhal</i>	Seal Number 084775
Sampling Location Sewage Lagoons, Cannon Air Force Base, New Mexico		Delivered to Shipper by <i>Fr. Elmer Koyhal</i>	Airbill Number 0255916253
		Team Leader Jerry Larson	
Team Leader Jerry Larson		Sampling Status <input type="checkbox"/> Done <input checked="" type="checkbox"/> Continuing	

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
17 APR 96	1000	CAFB-H-0496-1	Groundwater	4	NITRATE (E353.2 / E354.1), SW3005/SW6010-ICP-TRACE-TOT. & DISS. METALS (Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Ti, V, Zn)	ENVIRONMENTAL SAMPLE -3
17 APR 96	1000	CAFB-H-0496-2	Groundwater	4	NITRATE (E353.2 / E354.1), SW3005/SW6010-ICP-TRACE-TOT. & DISS. METALS (Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Ti, V, Zn)	MATRIX SPKE -3ms
17 APR 96	1000	CAFB-H-0496-3	Groundwater	4	NITRATE (E353.2 / E354.1), SW3005/SW6010-ICP-TRACE-TOT. & DISS. METALS (Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Ti, V, Zn)	MATRIX SPIKE DUPLICATE -3SD

Additional Comments

CHAIN OF CUSTODY RECORD				LABORATORY LOG-IN OF SAMPLE SHIPPING CONTAINER		
Relinquished by (signed)	Received by (signed)	Date	Time	Analytical Laboratory	Seal Intact upon Receipt	
	<i>[Signature]</i>	4/18/96	900	Quanterra Environmental 4955 Yarrow Street Arvada, CO 80002 ph: (303) 421-6611 Attention: Lindsay Breyer	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
					Condition of Contents <i>500</i>	
					Contents Temperature <i>5.2</i>	
					Laboratory Project Number <i>48374</i>	

II-45

APPENDIX - III

CANNON AFB RECORD

7530-00-222-3525
FEDERAL SUPPLY SERVICE
(GPO)

Parameters	Bottle Size and Type	Preservatives
23 Metals, total and dissolved SW6010, SW6010-Trace	16 oz. poly	10 mL 20% Nitric Acid
Nitrate, E353.2	16 oz. glass	2 mL 50% Sulfuric Acid
Nitrite , E354.1	16 oz. poly	None

16 APR 96

WELL - E

0725 = J. Larson, F. Gebhardt, and M. Ruybal arrive on site.
cloudy, cool morning, slight breeze.

PID = 0.0

0730 = WL = 286.61^{ft.} below TOC with SOLUNST (W457118)

M. Ruybal (note taker) calibrate cond. meter (ser # 5144905)
ORION model 126, PH meter (ser # 001951) ORION model 250A;
conduct. calibrated w/ 783 $\mu\text{S}/\text{cm}$ standard. PH meter
calibrated w/ buffers 7 and 10; PH 7 = 7.06 PH 10 = 10.19
slope = 101.4 Temp = 7.4 °C

0749 - BEGIN PUMPING WELL E

TIME	VOL (gal)	TEMP (°C)	PH	COND ($\mu\text{S}/\text{cm}$)
0750	1	16.0	7.48	777
0800	10	17.5	7.66	762
0807	20	18.0	7.69	760
0814	30	18.0	7.69	757
0821	40	18.0	7.70	758
0828	50	18.0	7.69	756
0835	60	18.5	7.69	753
0841	70	18.5	7.68	754
0849	80	18.0	7.68	752
0855	90	18.0	7.68	752
0902	100	18.0	7.69	751

0905 - SAMPLE CAFB-E-0496-1 - ENV. SAMPLE

16 APR 96

WELL - E - continued

USED 2600 PSI OF N_2 (1+ tanks) COLLECTED
100 GALLONS. OPERATED ^{PUMP} TANK AT 90-95 PSI.
(6 gallons to purge water line on pump)
0920 - Go to well F



16 APR 96

WELL - F

0935 - M. Royal, J. Larson, F. Gebhardt arrive on site, get ready for equipment blank, partly cloudy, sunny, windy (from south ~ 15 mph)

0941 - Calibrate conductivity meter with 783 $\mu\text{S/cm}$ standard. Calibrate PH meter with buffers 7 & 10 ;
 PH 7 = 7.03 PH 10 = 10.07 slope = 103.6 Temp = 19.4°C

1000 - Collect equipment blank CAFB-F-0496-2

Note: - Waste tank full of waste water - Jerry went to ask consultant what to do with waste water.

1030 - WL = 282.74 ft. below TOC - Jerry back on site. Brought wrong tank want back to get other tank.
 with SOLINST (W457118)

1056 - Begin pumping from well - F

TIME	VOL (gal)	Temp (°C)	PH	COND ($\mu\text{S/cm}$)
1103	0	18.5	7.35	1203
1112	10	18.5	7.46	1204
1120	20	19.0	7.49	1214
1130	30	19.0	7.48	1233
1140	40	19.0	7.49	1244
1150	50	19.0	7.48	1256
1157	60	19.0	7.49	1261
1207	70	19.0	7.50	1265
1215	80	19.5	7.50	1273
1225	90	19.5	7.48	1276
1235	100	19.5	7.49	1284

1240 collect env. sample CAFB-F-0496-1

used 3400 lbs gas with a setting of 80 lb. each on the ^{tank} regulator and Bennet regulator

16 APR 96

WELL - P

1310 - M. Roybal, J. Larson, F. Gebhardt arrive at well - P
cloudy, windy (~10-15 mph); ^{Electric} power out in the area

1325 Calibrate conductivity meter with 1830 $\mu\text{s}/\text{cm}$ standard.
Calibrate PH meter with buffers 7 & 10;

PH 7 = 7.01 PH 10 = 10.00 slope = 102.9 temp = 22.5

1332 - ~~W.L.~~ = PID = 0.0

1334 - W.L. = 278.03[#] below TOC with SOLINST (W-457118)

1350 ~~1337~~ - Begin purging from well - P

Initial heady
nitrogen gas
2000 lb.

TIME	Vol (gal)	Temp (°C)	PH	Cond ($\mu\text{s}/\text{cm}$)
1352	0	22.5	6.60	1928
1357	5	20.5	6.70	1930
1400	10	20.5	6.75	1915
1404	15	20.5	6.74	1920
1408	20	20.0	6.75	1938
1413	25	20.0	6.74	1932
1418	30	20.0	6.74	1934
1420	- collect env sample - CAFB-P-0496-1			

Used 1000 lbs of nitrogen gas for this well.

17 APR 96

WELL-H

0730 - J. Larson, F. Gebhardt and M. Roybal arrive on site.
 J.L. and F. G. moving equipment from well P to well-H.
 M. Roybal get ready for calibration of pH and SPC meters.
 Clear sky, sunny, cool breeze.

0751 - PID = 0.0

0800 - Calibrate SPC meter with 783 $\mu\text{S/cm}$ standard.

Calibrate pH meter with buffers 7 & 10;

pH 7 = 7.04 pH 10 = 10.15 slope = 100.8 temp = 12.7 °C

0804 - W.L. = 284.20 ft. below TOC with SOLINST (48-457118)

0816 - Begin purging from well-H

Initial
 Nitrogen \rightarrow
 2300 lbs.

TIME	VOL (gal)	Temp °C	pH	COND ($\mu\text{S/cm}$)
0822	0	16.0	7.37	840
0830	10	17.5	7.47	837
0839	20	18.0	7.60	806
0848	30	18.0	7.64	805
0856	40	18.0	7.65	811
0905	50	18.5	7.65	810
0914	60	18.5	7.64	813
0923	70	18.5	7.63	816
0932	80	18.5	7.64	816
0941	90	18.5	7.64	817
0950	100	18.5	7.64	818

1000 - Collect env sample CAFB-H-0496-1

Matrix spike CAFB-H-0496-2 and

Matrix spike duplicate CAFB-H-0496-3

1025 - Go to well-G

17 APR 96

WELL - G

1030 - J. Larson, F. Gebhardt, M. Roybal arrive on site

1035 - PID = 0.0

1039 - WL = 284.98 ft below TOC with SOLINST (W-457118)

1040 - M. Roybal calibrate SPC with 1830 $\mu\text{S}/\text{cm}$ standard

PH meter calibrated with buffers 7 & 10;

PH 7 = 7.02 PH 10 = 10.09 Slope = 106.2 temp = 17.5

1055 - Begin purging from well - G

TIME	Vol (gal)	Temp °C	PH	COND ($\mu\text{S}/\text{cm}$)	
1056	0	19.5	6.61	1473	
1106	10	20.0	6.75	1479	
1116	20	20.0	6.87	1455	
1125	30	19.5	7.02	1414	Dusty &
1135	40	19.5	7.05	1443	windy (~20-30 mph)
1144	50	19.5	7.06	1466	
1153	60	19.5	7.06	1479	
1202	70	19.5	7.06	1492	
1212	80	19.5	7.05	1505	
1221	90	19.5	7.04	1516	
1231	100	20.0	7.04	1524	
1240	110	20.0	7.03	1528	
1249	120	20.0	7.02	1534	
1259	130	20.0	7.02	1539	

1300 - collect environmental sample CAFB-G-0496-1 and duplicate sample CAFB-G-0496-2

3600 PSI USED TO PURGE 130 GALLONS.

**FINAL ASSESSMENT MONITORING
QUARTERLY REPORT
FIRST QUARTER 1996**

FOR

**LONG-TERM MONITORING
LANDFILL NOs. 3 AND 4**

**CANNON AIR FORCE BASE
Clovis, New Mexico**

**Appendix I
Analytical Results**

**Appendix II
Quality Control Reports**

**Appendix III
Data Assessment**

EXECUTIVE SUMMARY

This report presents the data resulting from sampling of monitoring wells N and O at Landfills number 4 and 3, respectively. The landfills are located at the Cannon Air Force Base near Clovis, New Mexico (Figure 1). The wells were sampled on 28 March, 1996, using dedicated pumps previously installed in the wells.

Monitoring well N is located downgradient of Landfill 4 and monitoring well O is located downgradient of Landfill 3 (Figure 2). Both wells were sampled for the analytes listed below. Monitoring well O was also sampled for duplicate analyses of the same parameters. Collectively there were three separate sets of analytical data generated from this round of quarterly sampling.

- Appendix - IX VOCs, SW 846 Method 8260,
- Appendix - IX SVOCs, SW 846 Method 8270,
- Dioxin - 2, 3, 7, 8-TCDD, SW 846 Method 8280,
- PAHs, SW 846 Method 8270,
- Pesticides/PCBs, SW 846 Method 8080,
- Herbicides, SW 846 Method 8150,
- Metals, SW 846 Method 6010 and 7000,
- Cyanide, SW 846 Method 9012,
- Sulfide, SW 846 Method 9030,
- Total Organic Carbon, SW 846 Method 9060,
- Total Organic Halides, SW 846 Method 9020,

Concentrations of detected analytes are summarized in Table 1. The Assessment Monitoring Quarterly Reports for the monitoring wells are presented in appropriate New Mexico Environmental Department data forms. The analytical results from HydroLogic Laboratories, Inc., are listed in Appendix I. The laboratory Quality Control Report for the analytical results is in Appendix II. The Data Assessment summary for the validation of sample CAFB-MWO-032896-1 is in Appendix III.

As part of the quality assurance and quality control (QA/QC) procedures for this sampling, a trip blank, matrix spike-matrix spike duplicate, duplicate, and equipment blank samples were analyzed. During this quarter of groundwater assessment monitoring, no target parameters other than the parameters associated with the duplicate analyses were detected in the QA/QC samples mentioned above.

The only constituents reported above quantitation limits in wells N and O were inorganics. Barium, vanadium, and zinc were reported in each well. Silver and selenium were reported in well N.

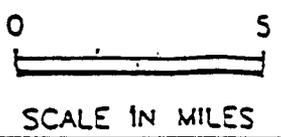
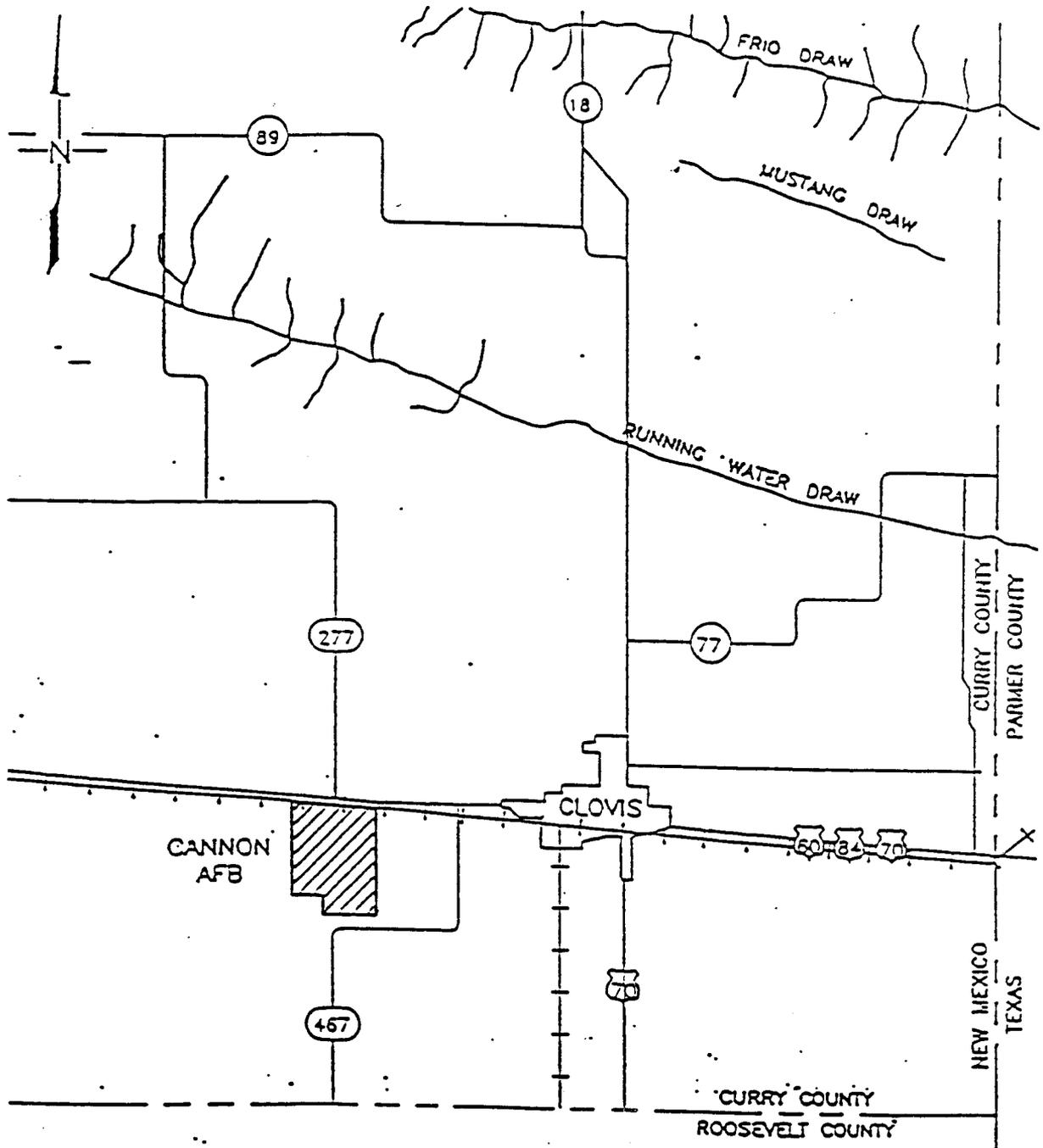
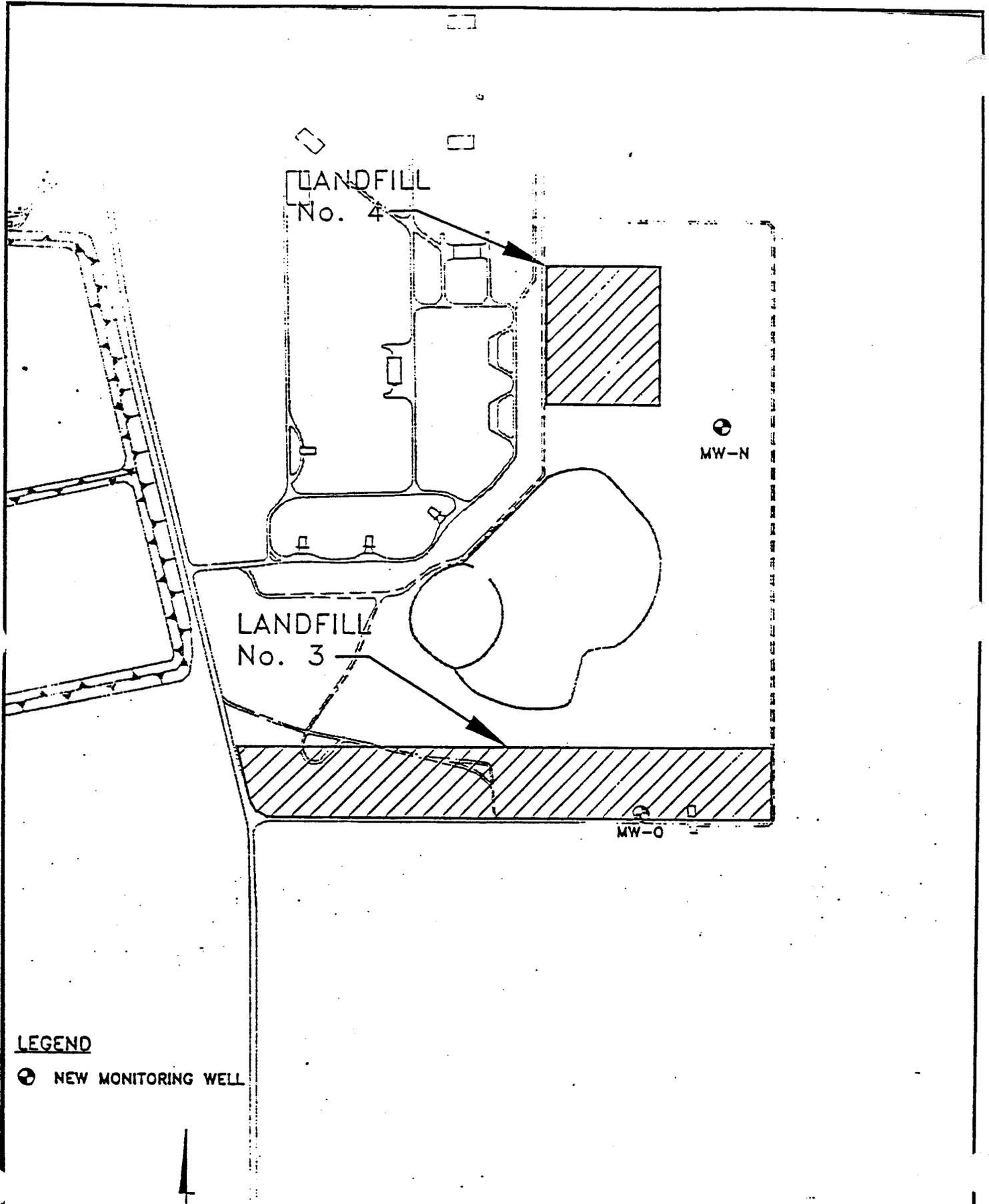


FIGURE 1
 SITE LOCATION MAP
 CANNON AIR FORCE BASE

DATE:	SCALE:	DRAWN BY:
2/96	SHOWN	-



LEGEND

⊕ NEW MONITORING WELL

FIGURE 2
MONITORING WELL LOCATION MAP
CANNON AIR FORCE BASE

DATE:
 2/96

SCALE:
 1" = 500'

DRAWN BY:
 -

TABLE 1: Summary of Quarterly Groundwater Sampling for Monitoring Wells N and O

First Quarter 1996, Groundwater Sample Summary Cannon Air Force Base, Clovis, New Mexico				
Well/sample ID:	CAFB-MWN-032896-1 ¹	CAFB-MWN-032896-2	CAFB-MWO-032896-1	
Sample Date:	March 28, 1996	March 28, 1996	March 28, 1996	
Analyte-Method	Concentration	Concentration	Concentration	Reporting Limit
Barium-SW846 (6010) (Ap .IX)	0.0596 mg/L	0.0579 mg/L	0.0609 mg/L	0.00026 mg/L
Silver-SW846 (6010) (Ap. IX)	ND	0.0025 J mg/L	ND	0.0019 mg/L
Vanadium-SW846 (6010) (Ap .IX)	0.018 J mg/L	0.016 J mg/L	0.012 J mg/L	0.0017 mg/L
Zinc-SW846 (6010) (Ap .IX)	0.0209 mg/L	0.0255 mg/L	0.0058 J mg/L	0.0052 mg/L
Selenium-SW846 (7740) (Ap. IX)	0.012 mg/L	0.0136 mg/L	ND	0.000735 mg/L
TOC-SW846 (9060)	0.8 J mg/L	0.55 mg/L	1.8 mg/L	0.15 mg/L
TOX-SW846 (9020)	0.012 mg/L	0.017 mg/L	0.057 mg/L	0.001 mg/L
VOCs-SW846 (8260) (Ap. IX)	ND	ND	ND	Varies
SVOCs-SW 846 (8270) (ApIX)	ND	ND	ND	Varies
PAHs- SW 846 (8270)	ND	ND	ND	Varies
Sulfide-SW 846(9030)	ND	ND	ND	0.48 mg/L
Herbicides- SW 846 (8150)	ND	ND	ND	Varies
Dioxin-2, 3, 7, 8-TCDD-SW846 (8280)	ND	ND	ND	Varies
Cyanide-SW 846 (9012)	ND	ND	ND	0.02 mg/L
OrganoChlorine Pesticides/PCBs- SW846 (8080)	ND	ND	ND	Varies

J = Estimated Concentration

1 = Sample Identification Legend :

CAFB-MWO-032896-1= Groundwater analytical

CAFB-MWO-032896-2= Groundwater Field Duplicate

ND = Not Detected

ASSESSMENT MONITORING QUARTERLY REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
 HAZARDOUS & RADIOACTIVE MATERIALS BUREAU
 525 CAMINO DE LOS MARQUEZ, SUITE 4
 SANTA FE, NM 87502

This set of data sheets is for use by all facilities in assessment monitoring (20 NMAC 4.1, Subpart VI, Section 265.93(D) (4), (5) and (7) (e) and (f), and Section 265.94 (b)).

FACILITY NAME Cannon Air Force Base EPA I.D.# NM 7572124454
 WELL NUMBER MW-O SAMPLE COLLECTION BY Ian Broussard
 LABORATORY NAME HydroLogic Labs. Inc. DATE SAMPLED 3/28/96
 TIME SAMPLED 1800 DATE RECEIVED BY LAB 3/30/96

PARAMETERS	STORET CODE	UNITS	VALUE	DATE ANALYZED
Elevation of G. Water	71993	ft.	3991.1	3/28/96
Well Depth	N/A	ft.	304.3	3/28/96
Well Casing Volume	N/A	gal.	14.3	3/28/96
Pump Rate	N/A	gal/min	1	3/28/96
Pump Period	72004	min.	45	3/28/96
Volume Evacuated	73675	gal.	43	3/28/96
Sampler Material	N/A	N/A	TEFLN	3/28/96
Well Sampling Method: <u>PSPMP</u>				

Assessment Monitoring Quarterly Report cont.

Well Number: MW-O Facility Name Cannon Air Force Base

INDICATOR PARAMETERS

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	8.2 (f)	N/A	3/28/96	
	00400	S.U.	7.8 (f)	N/A	3/28/96	Field Probe
	00400	S.U.	7.8 (f)	N/A	3/28/96	
	00400	S.U.	7.8 (f)	N/A	3/28/96	
Specific Conductivity	00095	umhos/cm	2.2 (f)	N/A	3/28/96	
	00095	umhos/cm	1.8 (f)	N/A	3/28/96	Field Probe
	00095	umhos/cm	1.8 (f)	N/A	3/28/96	
	00095	umhos/cm	1.8 (f)	N/A	3/28/96	
T.O.X.	70354	mg/L	0.017	0.001	4/8/96	
	70354	mg/L	N/A	N/A	N/A	SW846-9020
	70354	mg/L	N/A	N/A	N/A	
	70354	mg/L	N/A	N/A	N/A	
T.O.C.	00680	mg/L	0.55	0.15	4/1/96	
	00680	mg/L	N/A	N/A	N/A	SW846-9060
	00680	mg/L	N/A	N/A	N/A	
	00680	mg/L	N/A	N/A	N/A	

Assessment Monitoring Quarterly Report cont.

Well Number: MW-N Facility Name Cannon Air Force Base

INDICATOR PARAMETERS

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
Chloride	00940	mg/L	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	
Iron	01045	mg/L	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Manganese	71883	mg/L	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	
Phenols	32730	mg/L	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	
Sodium	00929	mg/L	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	
Sulfate	00945	mg/L	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Turbidity		TU	<u>1(f)</u>	<u>N/A</u>	<u>3/28/96</u>	Horiba-U10

DATE OF THIS REPORT: 5/16/96

SIGNATURE: *Ian Broussard*

NAME (PRINTED): Ian Broussard

Well Number: MW-O Facility Name Cannon Air Force Base

MONITORING WELL APPENDIX IX DATA FOR FACILITIES IN ASSESSMENT

Under assessment monitoring, per 20 NMAC 4.1 Subpart VI Section 265.93 (d) (4), (5), and (7) and per 42 Federal Register, 25942 (July 9, 1987), please list values for the Appendix IX parameters which were found in your Appendix IX scan.

PARAMETER	STORET CODE	VALUE	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	METHOD USED
BARIUM		0.0609	mg/L	0.00026	4/9/96	4/11/96	SW846-601
VANADIUM		0.012	mg/L	0.0017	4/9/96	4/11/96	SW846-601
ZINC		0.0058	mg/L	0.0052	4/9/96	4/11/96	SW846-601
TOC	00680	1.8	mg/L	0.15	N/A	4/1/96	SW846-906
TOX	70354	0.057	mg/L	0.001	N/A	4/8/96	SW846-902

ASSESSMENT MONITORING QUARTERLY REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
 HAZARDOUS & RADIOACTIVE MATERIALS BUREAU
 525 CAMINO DE LOS MARQUEZ, SUITE 4
 SANTA FE, NM 87502

This set of data sheets is for use by all facilities in assessment monitoring (20 NMAC 4.1, Subpart VI, Section 265.93(D) (4), (5) and (7) (e) and (f), and Section 265.94 (b).

FACILITY NAME Cannon Air Force Base EPA I.D.# NM 7572124454
 WELL NUMBER MW-N SAMPLE COLLECTION BY Ian Broussard
 LABORATORY NAME HydroLogic Labs. Inc. DATE SAMPLED 3/28/96
 TIME SAMPLED 1700 DATE RECEIVED BY LAB 3/30/96

PARAMETERS	STORET CODE	UNITS	VALUE	DATE ANALYZED
Elevation of G. Water	71993	ft.	3995.1	3/28/96
Well Depth	N/A	ft.	297.5	3/28/96
Well Casing Volume	N/A	gal.	14.9	3/28/96
Pump Rate	N/A	gal/min	1	3/28/96
Pump Period	72004	min.	50	3/28/96
Volume Evacuated	73675	gal.	45	3/28/96
Sampler Material	N/A	N/A	TEFLN	3/28/96
Well Sampling Method:			PSPMP	

Assessment Monitoring Quarterly Report cont.

Well Number: MW-N Facility Name Cannon Air Force Base

INDICATOR PARAMETERS

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	8.1 (f)	N/A	3/28/96	
	00400	S.U.	8.2 (f)	N/A	3/28/96	Field Probe
	00400	S.U.	8.2 (f)	N/A	3/28/96	
Specific Conductivity	00400	S.U.	8.2 (f)	N/A	3/28/96	
	00095	umhos/cm	0.96 (f)	N/A	3/28/96	
	00095	umhos/cm	0.98 (f)	N/A	3/28/96	Field Probe
	00095	umhos/cm	0.98 (f)	N/A	3/28/96	
T.O.X.	70354	mg/L	0.012	0.001	4/8/96	
	70354	mg/L	N/A	N/A	N/A	SW846-9020
	70354	mg/L	N/A	N/A	N/A	
	70354	mg/L	N/A	N/A	N/A	
T.O.C.	00680	mg/L	0.8	0.15	4/1/96	
	00680	mg/L	N/A	N/A	N/A	SW846-9060
	00680	mg/L	N/A	N/A	N/A	
	00680	mg/L	N/A	N/A	N/A	

Assessment Monitoring Quarterly Report cont.

Well Number: MW-O Facility Name Cannon Air Force Base

INDICATOR PARAMETERS

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
Chloride	00940	mg/L	<u> N/A </u>	<u> N/A </u>	<u> N/A </u>	
Iron	01045	mg/L	<u> N/A </u>	<u> N/A </u>	<u> N/A </u>	<u> N/A </u>
Manganese	71883	mg/L	<u> N/A </u>	<u> N/A </u>	<u> N/A </u>	
Phenols	32730	mg/L	<u> N/A </u>	<u> N/A </u>	<u> N/A </u>	
Sodium	00929	mg/L	<u> N/A </u>	<u> N/A </u>	<u> N/A </u>	
Sulfate	00945	mg/L	<u> N/A </u>	<u> N/A </u>	<u> N/A </u>	<u> N/A </u>
Turbidity		TU	<u> 2 (f) </u>	<u> N/A </u>	<u> 3/28/96 </u>	Horiba-U10

DATE OF THIS REPORT: 5/16/96

SIGNATURE: Ian Broussard

NAME (PRINTED): Ian Broussard

APPENDIX I
ANALYTICAL RESULTS

Apr 25, 1996

Foothill Engineering
Mr. Scott Koepsel
350 Indianiana Street
Suite 415
Golden, CO 80401

Dear Mr. Koepsel,

Please find enclosed the report for 3 samples received at HydroLogic Laboratories, Inc. on 30 Mar 1996 for your project number, 95-321. The report reference is L2646.

If you have any questions, please call (303) 659-0497.

Sincerely,



Bob Cathel
Project Manager

Sample Cross Reference Table

Company Name: Foothill Engineering

HydroLogic Login Number: L2646

HydroLogic Sample Number	Client Sample Identification	Sample Date/Time
L2646-1	CAFB-MWO-032896-1	28 Mar 96 18:00
L2646-2	CAFB-MWN-032896-1	28 Mar 96 16:20
L2646-4	CAFB-MWN-032896-2	28 Mar 96 16:40

DATE AND TIME SUMMARY

Company Name: Foothill Engineering
Project: 95-321

HydroLogic Login Number: L2646

METHOD COLLECTED PREPARED ANALYZED

SAMPLE NUMBER: L2646-1 **CLIENT ID:** CAFB-MWO-032896-1 **MATRIX:** Aqueous

SW846, APIX	03/28/96 18:00	04/02/96	04/12/96 05:56
SW846, 9030	03/28/96 18:00	04/01/96	04/01/96 08:42
SW846, 8270	03/28/96 18:00	04/02/96	04/12/96 05:56
SW846, 8260	03/28/96 18:00	04/05/96	04/05/96 19:21
SW846, 8080	03/28/96 18:00	04/07/96	04/10/96 20:26
SW846, 7841	03/28/96 18:00	04/09/96	04/10/96 09:04
SW846, 7740	03/28/96 18:00	04/09/96	04/10/96 10:32
SW846, 7421	03/28/96 18:00	04/09/96	04/10/96 15:33
SW846, 7060	03/28/96 18:00	04/09/96	04/10/96 11:05
SW846, 7041	03/28/96 18:00	04/10/96	04/11/96 08:06
SW846, 6010	03/28/96 18:00	04/09/96	04/10/96 15:03
SW846, 6010	03/28/96 18:00	04/09/96	04/11/96 12:20
SW846, 6010	03/28/96 18:00	04/10/96	04/12/96 09:37
SW-846, 9060	03/28/96 18:00	04/01/96	04/01/96 09:30
SW-846, 9020	03/28/96 18:00	04/08/96	04/08/96 11:19
SW-846, 7470	03/28/96 18:00	04/12/96	04/12/96 14:44
SW-846, 9012	03/28/96 18:00	04/01/96	04/03/96 11:30

SAMPLE NUMBER: L2646-2 **CLIENT ID:** CAFB-MWN-032896-1 **MATRIX:** Aqueous

SW846, APIX	03/28/96 16:20	04/02/96	04/11/96 23:55
SW846, 9030	03/28/96 16:20	04/01/96	04/01/96 08:42
SW846, 8270	03/28/96 16:20	04/02/96	04/11/96 23:55
SW846, 8260	03/28/96 16:20	04/05/96	04/05/96 20:02
SW846, 8080	03/28/96 16:20	04/04/96	04/10/96 21:06
SW846, 7841	03/28/96 16:20	04/09/96	04/10/96 09:09
SW846, 7740	03/28/96 16:20	04/09/96	04/10/96 10:37
SW846, 7421	03/28/96 16:20	04/09/96	04/10/96 15:37
SW846, 7060	03/28/96 16:20	04/09/96	04/10/96 11:09
SW846, 7041	03/28/96 16:20	04/10/96	04/11/96 08:11
SW846, 6010	03/28/96 16:20	04/09/96	04/10/96 15:15
SW846, 6010	03/28/96 16:20	04/09/96	04/11/96 12:32
SW846, 6010	03/28/96 16:20	04/10/96	04/12/96 09:40
SW-846, 9060	03/28/96 16:20	04/01/96	04/01/96 09:30
SW-846, 9020	03/28/96 16:20	04/08/96	04/08/96 14:35
SW-846, 7470	03/28/96 16:20	04/12/96	04/12/96 14:47
SW-846, 9012	03/28/96 16:20	04/01/96	04/03/96 11:30

SAMPLE NUMBER: L2646-4 **CLIENT ID:** CAFB-MWN-032896-2 **MATRIX:** Aqueous

SW846, APIX	03/28/96 16:40	04/02/96	04/17/96 20:02
SW846, 9030	03/28/96 16:40	04/01/96	04/01/96 08:42
SW846, 8270	03/28/96 16:40	04/02/96	04/17/96 20:02

DATE AND TIME SUMMARY

Company Name: Foothill Engineering
Project: 95-321

HydroLogic Login Number: L2646

METHOD	COLLECTED	PREPARED	ANALYZED
SW846, 8260	03/28/96 16:40	04/05/96	04/05/96 20:43
SW846, 8080	03/28/96 16:40	04/04/96	04/10/96 21:47
SW846, 7841	03/28/96 16:40	04/09/96	04/10/96 09:34
SW846, 7740	03/28/96 16:40	04/09/96	04/10/96 10:05
SW846, 7421	03/28/96 16:40	04/09/96	04/10/96 07:44
SW846, 7060	03/28/96 16:40	04/09/96	04/10/96 10:40
SW846, 7041	03/28/96 16:40	04/10/96	04/11/96 08:36
SW846, 6010	03/28/96 16:40	04/09/96	04/10/96 15:19
SW846, 6010	03/28/96 16:40	04/09/96	04/11/96 12:35
SW846, 6010	03/28/96 16:40	04/10/96	04/12/96 09:52
SW-846, 9060	03/28/96 16:40	04/01/96	04/01/96 09:30
SW-846, 9020	03/28/96 16:40	04/08/96	04/08/96 13:14
SW-846, 7470	03/28/96 16:40	04/12/96	04/12/96 14:49
SW-846, 9012	03/28/96 16:40	04/02/96	04/03/96 11:30

Ticket Report
Quanterra Environmental Services, Sacramento -
880 Riverside Parkway

CALLAB-087030

RECEIVED APR 11 1996

t Sacramento, California 95605
(916) 373-5600

Date Received : 03 APR 96 09:10

Mr. Bob Cathel
Hydrologic Labs -
695 North Seventh Ave.
Brighton, Colorado 80601

(303) 659-0497

Project ID,
EPA Case, RMA Lot : S95106 AQS 8280
040396
P.O. Number : S96015
Delivered By :
Storage Location : W12C
Logged in by : PISAEFF

Three aqueous samples received under COC in good condition.
Delivered by Federal Express.

Sample ID	Enseco ID	Client's label info	Date/Time Samp.	Containers
087030-0001-MB	412515	Method Blank		Method Blank
087030-0001-SA	412516	L2646-1	28 MAR 96	2-AGB
087030-0002-SA	412517	L2646-2	28 MAR 96	AGB
087030-0003-SA	412518	L2646-4	28 MAR 96	AGB

Samples not destroyed in testing are retained a maximum
of thirty (30) days unless otherwise requested.

Client Manager: Robert Hrabak

Quanterra Incorporated
880 Riverside Parkway
West Sacramento, California 95605

916 373-5600 Telephone
916 372-1059 Fax

April 15, 1996
QUANTERRA INCORPORATED PROJECT NUMBER: 087030
PO/CONTRACT: S96015

Bob Cathel
Hydrologic Labs
695 North Seventh Ave.
Brighton, CO 80601

Dear Mr. Cathel:

This report contains the analytical results for the three aqueous samples which were received under chain of custody by Quanterra Incorporated on 03 April 1996.

The case narrative is an integral part of this report.

If you have any questions, please call me at (916) 374-4433.

Sincerely,



Robert Hrabak
Project Manager
Low Resolution Dioxin Services

RH/ct

TABLE OF CONTENTS

QUANTERRA INCORPORATED PROJECT NUMBER 087030

Case Narrative

Quality Assurance Program

Sample Description Information

Chain of Custody Documentation

Client Purchase Order

2,3,7,8-TCDD - Method 8280

Includes Samples: 1 through 3

Method Blank Data Sheets

Sample Data Sheets

Laboratory Control Sample (DCS)

CASE NARRATIVE

QUANTERRA INCORPORATED PROJECT NUMBER 087030

There were no anomalies associated with this report.

QUANTERRA INCORPORATED QUALITY ASSURANCE PROGRAM

Quanterra Incorporated has implemented an extensive Quality Assurance (QA) program to ensure the production of scientifically sound, legally defensible data of known documental quality. A key element of this program is Quanterra's Laboratory Control Sample (LCS) system. Controlling lab operations with LCS (as opposed to matrix spike/matrix spike duplicate samples), allows the lab to differentiate between bias as a result of procedural errors versus bias due to matrix effects. The analyst can then identify and implement the appropriate corrective actions at the bench level, without waiting for extensive senior level review or costly and time-consuming sample re-analyses. The LCS program also provides our client with information to assess batch, and overall laboratory performance.

Laboratory Control Samples - (LCS)

Laboratory Control Samples (LCS) are well-characterized, laboratory generated samples used to monitor the laboratory's day-to-day performance of routine analytical methods. The results of the LCS are compared to well-defined laboratory acceptance criteria to determine whether the laboratory system is "in control". Three types of LCS are routinely analyzed: Duplicate Control Samples (DCS), Single Control Samples (SCS), and method blanks. Each of these LCS are described below.

Duplicate Control Samples. A DCS is a well-characterized matrix (blank water, sand, sodium sulfate or celite) which is spiked with certain target parameters and analyzed at approximately 10% of the sample load in order to establish method-specific control limits.

Single Control Samples. An SCS consists of a control matrix that is spiked with surrogate compounds appropriate to the method being used. In cases where no surrogate is available, (e.g. metals or conventional analyses) a single control sample identical to the DCS serves as the control sample. An SCS is prepared for each sample lot. Accuracy is calculated identically to the DCS.

Method Blank Results. A method blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your samples.

SAMPLE DESCRIPTION INFORMATION
for
Hydrologic Laboratories

Lab ID	Client ID	Matrix	Sampled Date	Time	Received Date
087030-0001-MB	Method Blank	AQUEOUS			03 APR 96
087030-0001-SA	L2646-1	AQUEOUS	28 MAR 96		03 APR 96
087030-0002-SA	L2646-2	AQUEOUS	28 MAR 96		03 APR 96
087030-0003-SA	L2646-4	AQUEOUS	28 MAR 96		03 APR 96

QC LOT ASSIGNMENT REPORT
Special Services - Low Resolution Mass Spectrometry

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
087030-0001-MB	AQUEOUS	TCDD-A	01 APR 96-A	-
087030-0001-SA	AQUEOUS	TCDD-A	01 APR 96-A	-
087030-0002-SA	AQUEOUS	TCDD-A	01 APR 96-A	-
087030-0003-SA	AQUEOUS	TCDD-A	01 APR 96-A	-

OUTSIDE CONTRACTOR ANALYSIS REQUEST & CHAIN-OF-CUSTODY

Analytical Lab: Quanterra
Address: 880 Riverside Pkwy Phone: 916-373-5600
West Sacramento, CA Contact: Robert Krabek
95605

Results Required By: 4-11-96

Please analyze the following samples as described below:

No. of Samples Shipped: 3

Project No.	Sample No.	Date Sampled	Analyses Requested
<u>L2646</u>	<u>L2646-1</u>	<u>3-28-96</u>	<u>Dioxin 2,3,7,8 TCDD 8280</u>
<u>↓</u>	<u>-2</u>	<u>↓</u>	<u>↓</u>
<u>↓</u>	<u>-4</u>	<u>↓</u>	<u>↓</u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>

RUSH SERVICES (FOR EXTRA FEE): YES NO

IF ANY QUESTIONS OR PROBLEMS CONTACT: PHONE NO.: Bob Cathel
(303) 659-0497

PLEASE FAX THE RESULTS TO: FAX NO.: Bob Cathel
(303) 659-5064

PLEASE MAIL WRITTEN RESULTS TO: Bob Cathel

SAMPLES RELINQUISHED BY: James Dimaggio
METHOD OF SHIPMENT: Shed Box DATE: 4-2-96
SAMPLES RECEIVED BY: R. Bonaldi DATE: 040396 1000
CUSTODY SEAL INTACT: YES yes NO none

Samples received in good condition.
RB 040396

OUTSIDE CONTRACTOR ANALYSIS REQUEST & CHAIN-OF-CUSTODY

Analytical Lab: Quanterra
Address: 880 Riverside Pkwy Phone: 916-373-5600
West Sacramento, CA Contact: Robert Hrabek
95605

Results Required By: 4-11-96

Please analyze the following samples as described below:

No. of Samples Shipped: 3

Project No.	Sample No.	Date Sampled	Analyses Requested
<u>L2646</u>	<u>L2646-1</u>	<u>3-28-96</u>	<u>Dioxin 2,3,7,8 TCDD 8280</u>
<u>↓</u>	<u>-2</u>	<u>↓</u>	<u>↓</u>
<u>↓</u>	<u>-4</u>	<u>↓</u>	<u>↓</u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>

RUSH SERVICES (FOR EXTRA FEE): YES NO X

IF ANY QUESTIONS OR PROBLEMS CONTACT:
PHONE NO.: Bob Cathel
(303) 659-0497

PLEASE FAX THE RESULTS TO:
FAX NO.: Bob Cathel
(303) 659-5064

PLEASE MAIL WRITTEN RESULTS TO:
Bob Cathel

SAMPLES RELINQUISHED BY: James Dimaggio
METHOD OF SHIPMENT: First Class DATE: 4-2-96
SAMPLES RECEIVED BY: R. Bonaly DATE: 040396 1000
CUSTODY SEAL INTACT: YES yes NO none

Samples received in good condition.

EB 040596

Analytical Sample Receipt/Check-in Record

Shipped Via: Fed Exp. 415 326 2632
(Airbill # if applicable)

Client: Foothills Eng

HydroLogic Project #(s): L 2646

HydroLogic Cooler(s): (Y) or N

Cooler #	<u>6083</u>				
Ice Packs	<u>(Y)</u> N	Y N	Y N	Y N	Y N
Temp. °C	<u>5</u>				

*muo- 032896-1
extra tax*

	YES	NO	SEE COMMENTS
1. Custody seal(s) present:	<u>X</u>		
2. Containers checked for radioactivity:	<u>X</u>		
3. Chain of Custody present:	<u>X</u>		
(A) COC agrees with bottles received:	<u>X</u>		
(B) COC signed with date & time:	<u>X</u>		
4. Containers broken or leaking:	<u>X</u>		
5. Short holding time worksheet completed:		<u>X</u>	
6. VOA samples preserved:	<u>X</u>		
7. pH measured on all preserved bottles:	<u>X</u>		
Check for chlorine & sulfides if requesting CN:	<u>X</u>		
8. Dissolved metals samples present:		<u>X</u>	
9. Multi-phase sample(s) present:		<u>X</u>	

Comments: _____

Sample Administrators Signature/Date: EQD 3-30-96

Analytical Sample Receipt/Check-in Record

Shipped Via: Fed Exp. 415 3262 676
(Airbill # if applicable)

Client: Foothills Eng

HydroLogic Project #(s): L 2646

HydroLogic Cooler(s): Y or N

Cooler #	<u>6036</u>				
Ice Packs	<u>Y</u> N	Y N	Y N	Y N	Y N
Temp. °C	<u>5</u>				

032896-1

	YES	NO	SEE COMMENTS
1. Custody seal(s) present:	<u>X</u>	_____	<u>Not signed or dated</u>
2. Containers checked for radioactivity:	<u>X</u>	_____	_____
3. Chain of Custody present:	<u>X</u>	_____	_____
(A) COC agrees with bottles received:	<u>X</u>	_____	_____
(B) COC signed with date & time:	<u>X</u>	_____	_____
4. Containers broken or leaking:	_____	<u>X</u>	_____
5. Short holding time worksheet completed:	_____	<u>X</u>	_____
6. VOA samples preserved:	<u>X</u>	_____	_____
7. pH measured on all preserved bottles:	<u>X</u>	_____	_____
Check for chlorine & sulfides if requesting CN:	<u>X</u>	_____	_____
8. Dissolved metals samples present:	_____	<u>X</u>	_____
9. Multi-phase sample(s) present:	_____	<u>X</u>	_____

Comments: _____

Sample Administrators Signature/Date: EQD 3-30-96

Analytical Sample Receipt/Check-in Record

Shipped Via: Fed Exp. 415 3262 643
(Airbill # if applicable)

Client: Foothills Eng

HydroLogic Project #(s): L 2646

HydroLogic Cooler(s): Y or N

Cooler #	<u>480</u>				
Ice Packs	<u>Y</u> N	Y N	Y N	Y N	Y N
Temp. °C					

MW 032896-3

	YES	NO	SEE COMMENTS
1. Custody seal(s) present:	<u>X</u>	_____	<u>Not signed or dated</u>
2. Containers checked for radioactivity:	<u>X</u>	_____	_____
3. Chain of Custody present:	<u>X</u>	_____	_____
(A) COC agrees with bottles received:	<u>X</u>	_____	_____
(B) COC signed with date & time:	<u>X</u>	_____	_____
4. Containers broken or leaking:	_____	<u>X</u>	_____
5. Short holding time worksheet completed:	_____	<u>X</u>	_____
6. VOA samples preserved:	<u>X</u>	_____	_____
7. pH measured on all preserved bottles:	<u>X</u>	_____	_____
Check for chlorine & sulfides if requesting CN:	<u>X</u>	_____	_____
8. Dissolved metals samples present:	_____	<u>X</u>	_____
9. Multi-phase sample(s) present:	_____	<u>X</u>	_____

Comments: _____

Sample Administrators Signature/Date: EQD 3-30-96

Analytical Sample Receipt/Check-in Record

Shipped Via: FedExp 4153262654
(Airbill # if applicable)

Client: _____

HydroLogic Project #(s): L 2646

HydroLogic Cooler(s): Y or N

Cooler #	<u>381</u>				
Ice Packs	<u>(Y)</u> N	Y N	Y N	Y N	Y N
Temp. °C	<u>28</u> <u>032896-2</u>				

	YES	NO	SEE COMMENTS
1. Custody seal(s) present:	<u>X</u>	_____	<u>Not signed or dated</u>
2. Containers checked for radioactivity:	<u>X</u>	_____	_____
3. Chain of Custody present:	<u>X</u>	_____	_____
(A) COC agrees with bottles received:	<u>X</u>	_____	_____
(B) COC signed with date & time:	<u>X</u>	_____	_____
4. Containers broken or leaking:	<u>X</u>	_____	_____
5. Short holding time worksheet completed:	_____	<u>X</u>	_____
6. VOA samples preserved:	<u>X</u>	_____	_____
7. pH measured on all preserved bottles:	<u>X</u>	_____	_____
Check for chlorine & sulfides if requesting CN:	<u>X</u>	_____	_____
8. Dissolved metals samples present:	_____	<u>X</u>	_____
9. Multi-phase sample(s) present:	_____	<u>X</u>	_____

Comments: 1 1L Am Broken

Sample Administrators Signature/Date: _____

**FINAL
RESULTS**

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWO-032896-1
 Project Number: 95-321
 Sample ID: L2646-1
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Met. 8260 (APIX)							
Preparation Date: 05-APR-96							
Analysis Date: 05-APR-96 19:21							
Workgroup Number: WG6107							
Acetone	67-64-1	1	ND	ug/L	U	1.5	100
Acetonitrile	75-05-8	1	ND	ug/L	U	.5	100
Acrolein	107-02-8	1	ND	ug/L	U	.5	100
Acrylonitrile	107-13-1	1	ND	ug/L	U	.5	100
Allyl chloride	107-05-1	1	ND	ug/L	U	.5	10
Benzene	71-43-2	1	ND	ug/L	U	.39	5
Bromodichloromethane	75-27-4	1	ND	ug/L	U	.64	5
Bromoform	75-25-2	1	ND	ug/L	U	.47	5
Bromomethane	74-83-9	1	ND	ug/L	U	.49	10
2-Butanone	78-93-3	1	ND	ug/L	U	1.1	100
Carbon disulfide	75-15-0	1	ND	ug/L	U	1.1	100
Carbon tetrachloride	56-23-5	1	ND	ug/L	U	1.4	5
Chlorobenzene	108-90-7	1	ND	ug/L	U	.44	5
Chloroethane	75-00-3	1	ND	ug/L	U	.54	10
Chloroform	67-66-3	1	ND	ug/L	U	1.4	5
Chloromethane	74-87-3	1	ND	ug/L	U	2	10
3-Chloropropylene	107-05-1	1	ND	ug/L	U	.5	5
Dibromochloromethane	124-48-1	1	ND	ug/L	U	.5	5
1,2-Dibromo-3-chloropropane	96-12-8	1	ND	ug/L	U	.61	100
1,2-Dibromoethane	106-93-4	1	ND	ug/L	U	.5	5
Dibromomethane	74-95-3	1	ND	ug/L	U	1.4	5
trans-1,4-Dichloro-2-butene	110-57-6	1	ND	ug/L	U	5	5
Dichlorodifluoromethane	75-71-8	1	ND	ug/L	U	.43	10
1,1-Dichloroethane	75-34-3	1	ND	ug/L	U	1.7	5
1,2-Dichloroethane	107-06-2	1	ND	ug/L	U	2.1	5
1,1-Dichloroethene	75-35-4	1	ND	ug/L	U	.48	5
trans-1,2-Dichloroethene	156-60-5	1	ND	ug/L	U	.55	5
cis-1,2-Dichloroethene	156-59-2	1	ND	ug/L	U	.5	5
1,2-Dichloropropane	78-87-5	1	ND	ug/L	U	.51	5
cis-1,3-Dichloropropene	10061-01-5	1	ND	ug/L	U	.78	5
trans-1,3-Dichloropropene	10061-02-6	1	ND	ug/L	U	.55	5
1,4-Dioxane	123-91-1	1	ND	ug/L	U	100	100

Review By: Bob Cathel

Report Approved By: Ty Garber

- Qual - U = Analyte Not Detected above the Method Detection Limit
 - J = Estimated Concentration, B = Analyte Detected in the Blank
 - E = Analyte Conc. is above the Method Calibration Range
- Dil - Sample Dilution Factor
- ND - Sample Concentration Not Detected above MDL
- MDL - Method Detection Limit
- RL - Method Reporting Limit

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWO-032896-1
 Project Number: 95-321
 Sample ID: L2646-1
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
Ethylbenzene	100-41-4	1	ND	ug/L	U	.75	5
Ethyl methacrylate	97-63-2	1	ND	ug/L	U	.5	5
2-Hexanone	591-78-6	1	ND	ug/L	U	.5	100
Iodomethane	74-88-4	1	ND	ug/L	U	10	10
Methacrylonitrile	126-98-7	1	ND	ug/L	U	.5	100
Methylene chloride	75-09-2	1	ND	ug/L	U	.75	5
Methyl methacrylate	80-62-6	1	ND	ug/L	U	.5	50
4-Methyl-2-pentanone	108-10-1	1	ND	ug/L	U	.56	50
Propionitrile	107-12-0	1	ND	ug/L	U	.5	5
Styrene	100-42-5	1	ND	ug/L	U	.5	5
1,1,1,2-Tetrachloroethane	630-20-6	1	ND	ug/L	U	.45	5
1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ug/L	U	.63	5
Tetrachloroethene	127-18-4	1	ND	ug/L	U	.49	5
Toluene	108-88-3	1	ND	ug/L	U	.85	5
1,1,1-Trichloroethane	71-55-6	1	ND	ug/L	U	1.7	5
1,1,2-Trichloroethane	79-00-5	1	ND	ug/L	U	1.2	5
Trichloroethene	79-01-6	1	ND	ug/L	U	.42	5
Trichlorofluoromethane	75-69-4	1	ND	ug/L	U	.5	5
1,2,3-Trichloropropane	96-18-4	1	ND	ug/L	U	1.1	5
Vinyl acetate	108-05-4	1	ND	ug/L	U	5	10
Vinyl chloride	75-01-4	1	ND	ug/L	U	.47	2
Xylene (Total)	1330-20-7	1	ND	ug/L	U	1	5
Dibromofluoromethane	SURROGATE	1	81	%			
Toluene-d8	SURROGATE	1	84	%			
4-Bromofluorobenzene	SURROGATE	1	88	%			

Review By: Bob Cathel

Report Approved By: Ty Garber

- Qual - U = Analyte Not Detected above the Method Detection Limit
 - J = Estimated Concentration, B = Analyte Detected in the Blank
 - E = Analyte Conc. is above the Method Calibration Range
- Dil - Sample Dilution Factor
- ND - Sample Concentration Not Detected above MDL
- MDL - Method Detection Limit
- RL - Method Reporting Limit

Form 1 - Data Summary Report
 Prepared By: Hydrologic Laboratories, Inc.

Client ID: CAFB-MWO-032896-1
 Project Number: 95-321
 Sample ID: L2646-1
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Met. 8270 (APIX)							
Preparation Date: 02-APR-96							
Analysis Date: 12-APR-96 05:56							
Workgroup Number: WG6064							
Acenaphthene	83-32-9	1	ND	ug/L	U	4.2	5
Acenaphthylene	208-96-8	1	ND	ug/L	U	3.5	5
Acetophenone	98-86-2	1	ND	ug/L	U	2.9	5
2-Acetylaminofluorene	53-96-3	1	ND	ug/L	U	100	100
4-Aminobiphenyl	92-67-1	1	ND	ug/L	U	3.3	10
Aniline	62-53-3	1	ND	ug/L	U	2.4	5
Anthracene	120-12-7	1	ND	ug/L	U	2.6	5
Aramite	140-57-8	1	ND	ug/L	U	10	10
Benz(a)anthracene	56-55-3	1	ND	ug/L	U	2.8	5
Benzo(b)fluoranthene	205-99-2	1	ND	ug/L	U	2.6	5
Benzo(k)fluoranthene	207-08-9	1	ND	ug/L	U	3.9	5
Benzo(g,h,i)perylene	191-24-2	1	ND	ug/L	U	3.1	5
Benzo(a)pyrene	50-32-8	1	ND	ug/L	U	3.5	5
Benzyl alcohol	100-51-6	1	ND	ug/L	U	2.4	5
4-Bromophenyl phenyl ether	101-55-3	1	ND	ug/L	U	2.6	5
Butyl benzyl phthalate	85-68-7	1	ND	ug/L	U	2.7	5
2-sec-Butyl-4,6-dinitrophenol	88-85-7	1	ND	ug/L	U	10	10
4-Chloroaniline	106-47-8	1	ND	ug/L	U	3.8	5
Bis(2-chloroethoxy)methane	111-91-1	1	ND	ug/L	U	2.9	5
Bis(2-chloroethyl) ether	111-44-4	1	ND	ug/L	U	2.1	5
Bis(2-chloroisopropyl) ether	108-60-1	1	ND	ug/L	U	1.9	5
4-Chloro-3-methylphenol	59-50-7	1	ND	ug/L	U	3.2	5
2-Chloronaphthalene	91-58-7	1	ND	ug/L	U	4.2	5
2-Chlorophenol	95-57-8	1	ND	ug/L	U	2.9	5
4-Chlorophenyl phenyl ether	7005-72-3	1	ND	ug/L	U	3.9	5

Review By: Bob Cathel

Report Approved By: Ty Garber

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 - E = Analyte Conc. is above the Method Calibration Range
- Dil - Sample Dilution Factor
- ND - Sample Concentration Not Detected above MDL
- MDL - Method Detection Limit
- RL - Method Reporting Limit

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWO-032896-1
 Project Number: 95-321
 Sample ID: L2646-1
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
Chrysene	218-01-9	1	ND	ug/L	U	4.2	5
Dibenz(a,h)anthracene	53-70-3	1	ND	ug/L	U	3.4	5
Dibenzofuran	132-64-9	1	ND	ug/L	U	4	5
1,3-Dichlorobenzene	541-73-1	1	ND	ug/L	U	3	5
1,4-Dichlorobenzene	106-46-7	1	ND	ug/L	U	2.9	5
1,2-Dichlorobenzene	95-50-1	1	ND	ug/L	U	2.6	5
Di-n-butyl phthalate	84-74-2	1	ND	ug/L	U	5.2	20
3,3'-Dichlorobenzidine	91-94-1	1	ND	ug/L	U	3.6	10
2,4-Dichlorophenol	120-83-2	1	ND	ug/L	U	4.4	5
2,6-Dichlorophenol	87-65-0	1	ND	ug/L	U	4.4	5
Diethyl phthalate	84-66-2	1	ND	ug/L	U	5.1	10
p-Dimethylaminoazobenzene	60-11-7	1	ND	ug/L	U	2.5	5
7,12-Dimethylbenz(a)anthracene	57-97-6	1	ND	ug/L	U	3.4	5
3,3'-Dimethylbenzidine	119-93-7	1	ND	ug/L	U	5	10
a,a-Dimethylphenethylamine	122-09-8	1	ND	ug/L	U	4.5	100
2,4-Dimethylphenol	105-67-9	1	ND	ug/L	U	3.2	5
Dimethyl phthalate	131-11-3	1	ND	ug/L	U	4.8	5
1,3-Dinitrobenzene	99-65-0	1	ND	ug/L	U	5	10
4,6-Dinitro-2-methylphenol	534-52-1	1	ND	ug/L	U	4.3	25
2,4-Dinitrophenol	51-28-5	1	ND	ug/L	U	6.9	25
2,4-Dinitrotoluene	121-14-2	1	ND	ug/L	U	2.9	5
2,6-Dinitrotoluene	606-20-2	1	ND	ug/L	U	3.8	5
Di-n-octyl phthalate	117-84-0	1	ND	ug/L	U	2.7	5
Diphenylamine	122-39-4	1	ND	ug/L	U	4.2	10
bis(2-ethylhexyl) phthalate	117-81-7	1	ND	ug/L	UB	3.6	5
Ethyl methanesulfonate	62-50-0	1	ND	ug/L	U	2.6	10
Fluoranthene	206-44-0	1	ND	ug/L	U	4	5
Fluorene	86-73-7	1	ND	ug/L	U	3.3	5
Hexachlorobenzene	118-74-1	1	ND	ug/L	U	2.5	5
Hexachlorobutadiene	87-68-3	1	ND	ug/L	U	3	5
Hexachlorocyclopentadiene	77-47-4	1	ND	ug/L	U	2.2	5

Review By: Bob Cathel

Report Approved By: Ty Garber

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Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWO-032896-1
 Project Number: 95-321
 Sample ID: L2646-1
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
Hexachloroethane	67-72-1	1	ND	ug/L	U	4.7	5
Hexachloropropene	1888-71-7	1	ND	ug/L	U	5	5
Hexachlorophene	70-30-4	1	ND	ug/L	U	100	100
Indeno(1,2,3-cd)pyrene	193-39-5	1	ND	ug/L	U	3.1	5
Isophorone	78-59-1	1	ND	ug/L	U	3	5
Isosafrole	120-58-1	1	ND	ug/L	U	20	20
Methapyrilene	91-80-5	1	ND	ug/L	U	10	10
3-Methylcholanthrene	56-49-5	1	ND	ug/L	U	2.7	5
Methyl methanesulfonate	66-27-3	1	ND	ug/L	U	2.9	5
2-Methylnaphthalene	91-57-6	1	ND	ug/L	U	2.8	5
2-Methylphenol	95-48-7	1	ND	ug/L	U	1.9	5
3&4-Methylphenol	NA	1	ND	ug/L	U	2	5
Naphthalene	91-20-3	1	ND	ug/L	U	2.4	5
1,4-Naphthoquinone	130-15-4	1	ND	ug/L	U	10	10
1-Naphthylamine	134-32-7	1	ND	ug/L	U	3.8	5
2-Naphthylamine	91-59-8	1	ND	ug/L	U	3.9	5
2-Nitroaniline	88-74-4	1	ND	ug/L	U	3.7	25
3-Nitroaniline	99-09-2	1	ND	ug/L	U	3.4	25
4-Nitroaniline	100-01-6	1	ND	ug/L	U	6.4	25
Nitrobenzene	98-95-3	1	ND	ug/L	U	4.7	5
2-Nitrophenol	88-75-5	1	ND	ug/L	U	4.3	5
4-Nitrophenol	100-02-7	1	ND	ug/L	U	8.4	25
N-Nitroso-di-n-butylamine	924-16-3	1	ND	ug/L	U	3	5
N-Nitrosodiethylamine	55-18-5	1	ND	ug/L	U	10	10
N-Nitrosodimethylamine	62-75-9	1	ND	ug/L	U	2	10
N-Nitrosodiphenylamine	86-30-6	1	ND	ug/L	U	5.2	25
N-Nitrosodipropylamine	621-64-7	1	ND	ug/L	U	3.1	5
N-Nitrosomethylethylamine	10595-95-6	1	ND	ug/L	U	10	10
N-Nitrosomorpholine	59-89-2	1	ND	ug/L	U	10	10
N-Nitrosopiperidine	100-75-4	1	ND	ug/L	U	3.4	10
N-Nitrosopyrrolidine	930-55-2	1	ND	ug/L	U	10	10
5-Nitro-o-toluidine	99-55-8	1	ND	ug/L	U	10	10
4-Nitroquinoline-n-oxide	56-57-5	1	ND	ug/L	U	100	100

Review By: Bob Cathel

Report Approved By: Ty Garber

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Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWO-032896-1
 Project Number: 95-321
 Sample ID: L2646-1
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
Pentachlorobenzene	608-93-5	1	ND	ug/L	U	3.9	5
Pentachloroethane	76-01-7	1	ND	ug/L	U	10	10
Pentachloronitrobenzene	82-68-8	1	ND	ug/L	U	4.7	10
Pentachlorophenol	87-86-5	1	ND	ug/L	U	5.7	25
Phenacetin	62-44-2	1	ND	ug/L	U	5.9	25
Phenanthrene	85-01-8	1	ND	ug/L	U	2.5	5
Phenol	108-95-2	1	ND	ug/L	U	3.4	5
p-Phenylenediamine	106-50-3	1	ND	ug/L	U	100	100
2-Picoline	109-06-8	1	ND	ug/L	U	3.6	5
Pronamide	23950-58-5	1	ND	ug/L	U	3.8	5
Pyrene	129-00-0	1	ND	ug/L	U	3.5	5
Pyridine	110-86-1	1	ND	ug/L	U	10	10
Safrole	94-59-7	1	ND	ug/L	U	10	10
1,2,4,5-Tetrachlorobenzene	95-94-3	1	ND	ug/L	U	5.1	10
2,3,4,6-Tetrachlorophenol	58-90-2	1	ND	ug/L	U	4.5	5
o-Toluidine	95-53-4	1	ND	ug/L	U	10	10
1,2,4-Trichlorobenzene	120-82-1	1	ND	ug/L	U	3.2	5
2,4,5-Trichlorophenol	95-95-4	1	ND	ug/L	U	5.6	25
2,4,6-Trichlorophenol	88-06-2	1	ND	ug/L	U	4.4	5
1,3,5-Trinitrobenzene	99-35-4	1	ND	ug/L	U	10	10
Nitrobenzene-d5	SURROGATE	1	60	%			
2-Fluorobiphenyl	SURROGATE	1	68	%			
p-Terphenyl-d14	SURROGATE	1	44	%			
Phenol-d6	SURROGATE	1	67	%			
2-Fluorophenol	SURROGATE	1	50	%			
2,4,6-Tribromophenol	SURROGATE	1	57	%			

Review By: Bob Cathel

Report Approved By: Ty Garber

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Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWO-032896-1
 Project Number: 95-321
 Sample ID: L2646-1
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 3520/8270							
Preparation Date: 02-APR-96							
Analysis Date: 12-APR-96 05:56							
Workgroup Number: WG6064							
Acenaphthene	83-32-9	1	ND	ug/L	U	4.2	5
Acenaphthylene	208-96-8	1	ND	ug/L	U	3.5	5
Anthracene	120-12-7	1	ND	ug/L	U	2.6	5
Benzo(a)anthracene	56-55-3	1	ND	ug/L	U	2.8	5
Benzo(a)pyrene	50-32-8	1	ND	ug/L	U	3.5	5
Benzo(b)fluoranthene	205-99-2	1	ND	ug/L	U	2.6	5
Benzo(g,h,i)perylene	191-24-2	1	ND	ug/L	U	3.1	5
Benzo(k)fluoranthene	207-08-9	1	ND	ug/L	U	3.9	5
Chrysene	218-01-9	1	ND	ug/L	U	4.2	5
Dibenz(a,h)anthracene	53-70-3	1	ND	ug/L	U	3.4	5
Dibenz(a,j)acridine	224-42-0	1	ND	ug/L	U	5.3	25
Dibenzofuran	132-64-9	1	ND	ug/L	U	4	5
Fluoranthene	206-44-0	1	ND	ug/L	U	4	5
Fluorene	86-73-7	1	ND	ug/L	U	3.3	5
Indeno(1,2,3-cd)pyrene	193-39-5	1	ND	ug/L	U	3.1	5
2-Methylnaphthalene	91-57-6	1	ND	ug/L	U	2.8	5
Naphthalene	91-20-3	1	ND	ug/L	U	2.4	5
Phenanthrene	85-01-8	1	ND	ug/L	U	2.5	5
Pyrene	129-00-0	1	ND	ug/L	U	3.5	5
Nitrobenzene-d5	SURROGATE	1	60	%			
2-Fluorobiphenyl	SURROGATE	1	68	%			
p-Terphenyl-d14	SURROGATE	1	44	%			

Review By: Bob Cathel

Report Approved By: Ty Garber

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Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWO-032896-1
 Project Number: 95-321
 Sample ID: L2646-1
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

SW846 Methods 3520/8080
 Preparation Date: 07-APR-96
 Analysis Date: 10-APR-96 20:26
 Workgroup Number: WG6093

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
Aldrin	309-00-2	1	ND	ug/L	U	.05	.05
alpha-BHC	319-84-6	1	ND	ug/L	U	.018	.05
beta-BHC	319-85-7	1	ND	ug/L	U	.015	.05
delta-BHC	319-86-8	1	ND	ug/L	U	.011	.05
gamma-BHC (Lindane)	58-89-9	1	ND	ug/L	U	.013	.05
alpha-Chlordane	5103-71-9	1	ND	ug/L	J	.01	.05
gamma-Chlordane	5103-74-2	1	ND	ug/L	J	.01	.05
Chlorobenzilate	510-15-6	1	ND	ug/L	U	.05	.1
4,4'-DDD	72-54-8	1	ND	ug/L	U	.078	.1
4,4'-DDE	72-55-9	1	ND	ug/L	U	.017	.1
4,4'-DDT	50-29-3	1	ND	ug/L	U	.031	.1
Diallate	60-57-1	1	ND	ug/L	U	.5	1
Dieldrin	60-57-1	1	ND	ug/L	U	.012	.1
Endosulfan I	959-98-8	1	ND	ug/L	U	.015	.05
Endosulfan II	33213-65-9	1	ND	ug/L	U	.013	.1
Endosulfan sulfate	1031-07-8	1	ND	ug/L	U	.018	.1
Endrin	72-20-8	1	ND	ug/L	U	.013	.1
Endrin aldehyde	7421-93-4	1	ND	ug/L	U	.081	.1
Heptachlor	76-44-8	1	ND	ug/L	U	.036	.05
Heptachlor epoxide	1024-57-3	1	ND	ug/L	U	.014	.05
Isodrin	465-73-6	1	ND	ug/L	U	.05	.1
Kepone	143-50-0	1	ND	ug/L	U	.5	1
Methoxychlor	72-43-5	1	ND	ug/L	U	.049	.5
Toxaphene	8001-35-2	1	ND	ug/L	U	.24	2.4
Aroclor-1016	12674-11-2	1	ND	ug/L	U	.18	.5
Aroclor-1221	11104-28-2	1	ND	ug/L	U	.11	.5
Aroclor-1232	11141-16-5	1	ND	ug/L	U	.11	.5
Aroclor-1242	53469-21-9	1	ND	ug/L	U	.11	.5
Aroclor-1248	12672-29-6	1	ND	ug/L	U	.11	.5
Aroclor-1254	11097-69-1	1	ND	ug/L	U	.11	1
Aroclor-1260	11096-82-5	1	ND	ug/L	U	.11	1
Tetrachloro-m-xylene	SURROGATE	1	86	%			

Review By: Bob Cathel

Report Approved By: Ty Garber

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Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWO-032896-1
Project Number: 95-321
Sample ID: L2646-1
Site / Project ID: CAFB
Run ID: R3498
Collection Date: 28-MAR-96
Received Date: 30-MAR-96
Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
Decachlorobiphenyl	SURROGATE	1	77	%			

Review By: Bob Cathel

Report Approved By: Ty Garber

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Client ID: CAFB-MWO-032896-1
 Project Number: 95-321
 Sample ID: L2646-1
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Met. 6010 (APIX)							
Preparation Date: 09-APR-96							
Analysis Date: 11-APR-96 12:20							
Workgroup Number: WG6173							
Barium	7440-39-3	1	.0609	mg/L		.00026	.02
Beryllium	7440-41-7	1	ND	mg/L	U	.00016	.004
Cadmium	7440-43-9	1	ND	mg/L	U	.0019	.005
Chromium	7440-47-3	1	ND	mg/L	U	.0045	.01
Cobalt	7440-48-4	1	ND	mg/L	U	.0053	.05
Copper	7440-50-8	1	ND	mg/L	U	.0073	.01
Nickel	7440-02-0	1	ND	mg/L	U	.0056	.02
Silver	7440-22-4	1	ND	mg/L	U	.0019	.01
Tin	7440-31-5	1	ND	mg/L	U	.054	.1
Vanadium	7440-62-2	1	.012	mg/L	J	.0017	.05
Zinc	7440-66-6	1	.0058	mg/L	J	.0052	.02

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Report Approved By: Ty Garber

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Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWO-032896-1
 Project Number: 95-321
 Sample ID: L2646-1
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 7041 Analysis Date: 11-APR-96 08:06 Workgroup Number: WG6131							
Antimony	7440-36-0	1	ND	mg/L	U	.00068	.006
SW846 Method 7060 Analysis Date: 10-APR-96 11:05 Workgroup Number: WG6128							
Arsenic	7440-38-2	1	ND	mg/L	U	.00073	.005
SW846 Method 7421 Analysis Date: 10-APR-96 15:33 Workgroup Number: WG6126							
Lead	7439-92-1	1	ND	mg/L	U	.00089	.003
SW846 Method 7740 Analysis Date: 10-APR-96 10:32 Workgroup Number: WG6127							
Selenium	7782-49-2	1	ND	mg/L	U	.000735	.005
SW846 Method 7841 Analysis Date: 10-APR-96 09:04 Workgroup Number: WG6129							
Thallium	7440-26-0	1	ND	mg/L	U	.00079	.01
SW846 Method 7470 Analysis Date: 12-APR-96 14:44 Workgroup Number: WG6180							
Mercury	7439-97-6	1	ND	mg/L	U	.00005	.0002

Review By: Bob Cathel

Report Approved By: Ty Garber

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Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWO-032896-1
 Project Number: 95-321
 Sample ID: L2646-1
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 9012							
Analysis Date: 03-APR-96 11:30							
Workgroup Number: WG6094							
Cyanide (tot.)	N/A	1	ND	mg/L	U	.005	.02
Cyanide (amen.)	N/A	1	ND	mg/L	U	.005	.02
SW-846, Method 9030							
Preparation Date: 01-APR-96							
Analysis Date: 01-APR-96 08:42							
Workgroup Number: WG6048							
Sulfide	N/A	1	ND	mg/L	U	.48	1
SW-846, Method 9060							
Analysis Date: 01-APR-96 09:30							
Workgroup Number: WG6046							
Total Organic Carbon	N/A	1	1.8	mg/L		.15	1
SW-846, Method 9020							
Analysis Date: 08-APR-96 11:19							
Workgroup Number: WG6122							
Total Organic Halides	N/A	1	.057	mg/L		.001	.005

Review By: Bob Cathel

Report Approved By: Ty Garber

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2,3,7,8-TCDD

LOW RESOLUTION

Client Name: Hydrologic Laboratories

Client ID: L2646-1

Lab ID: 087030-0001-SA

Matrix: AQUEOUS

Authorized: 03 APR 96

Sampled: 28 MAR 96

Prepared: 05 APR 96

Received: 03 APR 96

Analyzed: 08 APR 96

Sample Amount 1.04 L
Column Type SP-2331

Parameter	Result	Units	Detection Limit	Data Qualifiers
Dioxins				
2,3,7,8-TCDD	ND	ng/L	0.92	
	% Recovery			
13C-2,3,7,8-TCDD	71			

ND = Not detected
NA = Not applicable

Reported By: Hung Nguyen

Approved By: Robert Hrabak

The cover letter is an integral part of this report.

Rev 230787

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-2
 Project Number: 95-321
 Sample ID: L2646-4
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Met. 8260 (APIX)							
Preparation Date: 05-APR-96							
Analysis Date: 05-APR-96 20:43							
Workgroup Number: WG6107							
Acetone	67-64-1	1	ND	ug/L	U	1.5	100
Acetonitrile	75-05-8	1	ND	ug/L	U	.5	100
Acrolein	107-02-8	1	ND	ug/L	U	.5	100
Acrylonitrile	107-13-1	1	ND	ug/L	U	.5	100
Allyl chloride	107-05-1	1	ND	ug/L	U	.5	10
Benzene	71-43-2	1	ND	ug/L	U	.39	5
Bromodichloromethane	75-27-4	1	ND	ug/L	U	.64	5
Bromoform	75-25-2	1	ND	ug/L	U	.47	5
Bromomethane	74-83-9	1	ND	ug/L	U	.49	10
2-Butanone	78-93-3	1	ND	ug/L	U	1.1	100
Carbon disulfide	75-15-0	1	ND	ug/L	U	1.1	100
Carbon tetrachloride	56-23-5	1	ND	ug/L	U	1.4	5
Chlorobenzene	108-90-7	1	ND	ug/L	U	.44	5
Chloroethane	75-00-3	1	ND	ug/L	U	.54	10
Chloroform	67-66-3	1	ND	ug/L	U	1.4	5
Chloromethane	74-87-3	1	ND	ug/L	U	2	10
3-Chloropropylene	107-05-1	1	ND	ug/L	U	.5	5
Dibromochloromethane	124-48-1	1	ND	ug/L	U	.5	5
1,2-Dibromo-3-chloropropane	96-12-8	1	ND	ug/L	U	.61	100
1,2-Dibromoethane	106-93-4	1	ND	ug/L	U	.5	5
Dibromomethane	74-95-3	1	ND	ug/L	U	1.4	5
trans-1,4-Dichloro-2-butene	110-57-6	1	ND	ug/L	U	5	5
Dichlorodifluoromethane	75-71-8	1	ND	ug/L	U	.43	10
1,1-Dichloroethane	75-34-3	1	ND	ug/L	U	1.7	5
1,2-Dichloroethane	107-06-2	1	ND	ug/L	U	2.1	5
1,1-Dichloroethene	75-35-4	1	ND	ug/L	U	.48	5
trans-1,2-Dichloroethene	156-60-5	1	ND	ug/L	U	.55	5
cis-1,2-Dichloroethene	156-59-2	1	ND	ug/L	U	.5	5
1,2-Dichloropropane	78-87-5	1	ND	ug/L	U	.51	5
cis-1,3-Dichloropropene	10061-01-5	1	ND	ug/L	U	.78	5
trans-1,3-Dichloropropene	10061-02-6	1	ND	ug/L	U	.55	5
1,4-Dioxane	123-91-1	1	ND	ug/L	U	100	100

Review By: Bob Cathel

Report Approved By: Ty Garber

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 - E = Analyte Conc. is above the Method Calibration Range

Dil - Sample Dilution Factor

ND - Sample Concentration Not Detected above MDL

MDL - Method Detection Limit

RL - Method Reporting Limit

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-2
 Project Number: 95-321
 Sample ID: L2646-4
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
Ethylbenzene	100-41-4	1	ND	ug/L	U	.75	5
Ethyl methacrylate	97-63-2	1	ND	ug/L	U	.5	5
2-Hexanone	591-78-6	1	ND	ug/L	U	.5	100
Iodomethane	74-88-4	1	ND	ug/L	U	10	10
Methacrylonitrile	126-98-7	1	ND	ug/L	U	.5	100
Methylene chloride	75-09-2	1	ND	ug/L	U	.75	5
Methyl methacrylate	80-62-6	1	ND	ug/L	U	.5	50
4-Methyl-2-pentanone	108-10-1	1	ND	ug/L	U	.56	50
Propionitrile	107-12-0	1	ND	ug/L	U	.5	5
Styrene	100-42-5	1	ND	ug/L	U	.5	5
1,1,1,2-Tetrachloroethane	630-20-6	1	ND	ug/L	U	.45	5
1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ug/L	U	.63	5
Tetrachloroethene	127-18-4	1	ND	ug/L	U	.49	5
Toluene	108-88-3	1	ND	ug/L	U	.85	5
1,1,1-Trichloroethane	71-55-6	1	ND	ug/L	U	1.7	5
1,1,2-Trichloroethane	79-00-5	1	ND	ug/L	U	1.2	5
Trichloroethene	79-01-6	1	ND	ug/L	U	.42	5
Trichlorofluoromethane	75-69-4	1	ND	ug/L	U	.5	5
1,2,3-Trichloropropane	96-18-4	1	ND	ug/L	U	1.1	5
Vinyl acetate	108-05-4	1	ND	ug/L	U	.5	10
Vinyl chloride	75-01-4	1	ND	ug/L	U	.47	2
Xylene (Total)	1330-20-7	1	ND	ug/L	U	1	5
Dibromofluoromethane	SURROGATE	1	97	%			
Toluene-d8	SURROGATE	1	95	%			
4-Bromofluorobenzene	SURROGATE	1	96	%			

Review By: Bob Cathel

Report Approved By: Ty Garber

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- Dil - Sample Dilution Factor
- ND - Sample Concentration Not Detected above MDL
- MDL - Method Detection Limit
- RL - Method Reporting Limit

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-2
 Project Number: 95-321
 Sample ID: L2646-4
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Met. 8270 (APIX)							
Preparation Date: 02-APR-96							
Analysis Date: 17-APR-96 20:02							
Workgroup Number: WG6064							
Acenaphthene	83-32-9	1	ND	ug/L	U	4.2	5
Acenaphthylene	208-96-8	1	ND	ug/L	U	3.5	5
Acetophenone	98-86-2	1	ND	ug/L	U	2.9	5
2-Acetylaminofluorene	53-96-3	1	ND	ug/L	U	100	100
4-Aminobiphenyl	92-67-1	1	ND	ug/L	U	3.3	10
Aniline	62-53-3	1	ND	ug/L	U	2.4	5
Anthracene	120-12-7	1	ND	ug/L	U	2.6	5
Aramite	140-57-8	1	ND	ug/L	U	10	10
Benz(a)anthracene	56-55-3	1	ND	ug/L	U	2.8	5
Benzo(b)fluoranthene	205-99-2	1	ND	ug/L	U	2.6	5
Benzo(k)fluoranthene	207-08-9	1	ND	ug/L	U	3.9	5
Benzo(g,h,i)perylene	191-24-2	1	ND	ug/L	U	3.1	5
Benzo(a)pyrene	50-32-8	1	ND	ug/L	U	3.5	5
Benzyl alcohol	100-51-6	1	ND	ug/L	U	2.4	5
4-Bromophenyl phenyl ether	101-55-3	1	ND	ug/L	U	2.6	5
Butyl benzyl phthalate	85-68-7	1	ND	ug/L	U	2.7	5
2-sec-Butyl-4,6-dinitrophenol	88-85-7	1	ND	ug/L	U	10	10
4-Chloroaniline	106-47-8	1	ND	ug/L	U	3.8	5
Bis(2-chloroethoxy)methane	111-91-1	1	ND	ug/L	U	2.9	5
Bis(2-chloroethyl) ether	111-44-4	1	ND	ug/L	U	2.1	5
Bis(2-chloroisopropyl) ether	108-60-1	1	ND	ug/L	U	1.9	5
4-Chloro-3-methylphenol	59-50-7	1	ND	ug/L	U	3.2	5
2-Chloronaphthalene	91-58-7	1	ND	ug/L	U	4.2	5
2-Chlorophenol	95-57-8	1	ND	ug/L	U	2.9	5
4-Chlorophenyl phenyl ether	7005-72-3	1	ND	ug/L	U	3.9	5

Reviewed By: Bob Cathel

Report Approved By: Ty Garber

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- Dil - Sample Dilution Factor
- ND - Sample Concentration Not Detected above MDL
- MDL - Method Detection Limit
- RL - Method Reporting Limit

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-2
 Project Number: 95-321
 Sample ID: L2646-4
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
Chrysene	218-01-9	1	ND	ug/L	U	4.2	5
Dibenz(a,h)anthracene	53-70-3	1	ND	ug/L	U	3.4	5
Dibenzofuran	132-64-9	1	ND	ug/L	U	4	5
1,3-Dichlorobenzene	541-73-1	1	ND	ug/L	U	3	5
1,4-Dichlorobenzene	106-46-7	1	ND	ug/L	U	2.9	5
1,2-Dichlorobenzene	95-50-1	1	ND	ug/L	U	2.6	5
Di-n-butyl phthalate	84-74-2	1	ND	ug/L	U	5.2	20
3,3'-Dichlorobenzidine	91-94-1	1	ND	ug/L	U	3.6	10
2,4-Dichlorophenol	120-83-2	1	ND	ug/L	U	4.4	5
2,6-Dichlorophenol	87-65-0	1	ND	ug/L	U	4.4	5
Diethyl phthalate	84-66-2	1	ND	ug/L	U	5.1	10
p-Dimethylaminoazobenzene	60-11-7	1	ND	ug/L	U	2.5	5
7,12-Dimethylbenz(a)anthracene	57-97-6	1	ND	ug/L	U	3.4	5
3,3'-Dimethylbenzidine	119-93-7	1	ND	ug/L	U	5	10
a,a-Dimethylphenethylamine	122-09-8	1	ND	ug/L	U	4.5	100
2,4-Dimethylphenol	105-67-9	1	ND	ug/L	U	3.2	5
Dimethyl phthalate	131-11-3	1	ND	ug/L	U	4.8	5
1,3-Dinitrobenzene	99-65-0	1	ND	ug/L	U	5	10
4,6-Dinitro-2-methylphenol	534-52-1	1	ND	ug/L	U	4.3	25
2,4-Dinitrophenol	51-28-5	1	ND	ug/L	U	6.9	25
2,4-Dinitrotoluene	121-14-2	1	ND	ug/L	U	2.9	5
2,6-Dinitrotoluene	606-20-2	1	ND	ug/L	U	3.8	5
Di-n-octyl phthalate	117-84-0	1	ND	ug/L	U	2.7	5
Diphenylamine	122-39-4	1	ND	ug/L	U	4.2	10
bis(2-ethylhexyl) phthalate	117-81-7	1	ND	ug/L	U	3.6	5
Ethyl methanesulfonate	62-50-0	1	ND	ug/L	U	2.6	10
Fluoranthene	206-44-0	1	ND	ug/L	U	4	5
Fluorene	86-73-7	1	ND	ug/L	U	3.3	5
Hexachlorobenzene	118-74-1	1	ND	ug/L	U	2.5	5
Hexachlorobutadiene	87-68-3	1	ND	ug/L	U	3	5
Hexachlorocyclopentadiene	77-47-4	1	ND	ug/L	U	2.2	5

Review By: Bob Cathel

Report Approved By: Ty Garber

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Dil - Sample Dilution Factor

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RL - Method Reporting Limit

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-2
 Project Number: 95-321
 Sample ID: L2646-4
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
Hexachloroethane	67-72-1	1	ND	ug/L	U	4.7	5
Hexachloropropene	1888-71-7	1	ND	ug/L	U	5	5
Hexachlorophene	70-30-4	1	ND	ug/L	U	100	100
Indeno(1,2,3-cd)pyrene	193-39-5	1	ND	ug/L	U	3.1	5
Isophorone	78-59-1	1	ND	ug/L	U	3	5
Isosafrole	120-58-1	1	ND	ug/L	U	20	20
Methapyrilene	91-80-5	1	ND	ug/L	U	10	10
3-Methylcholanthrene	56-49-5	1	ND	ug/L	U	2.7	5
Methyl methanesulfonate	66-27-3	1	ND	ug/L	U	2.9	5
2-Methylnaphthalene	91-57-6	1	ND	ug/L	U	2.8	5
2-Methylphenol	95-48-7	1	ND	ug/L	U	1.9	5
3&4-Methylphenol	NA	1	ND	ug/L	U	2	5
Naphthalene	91-20-3	1	ND	ug/L	U	2.4	5
1,4-Naphthoquinone	130-15-4	1	ND	ug/L	U	10	10
1-Naphthylamine	134-32-7	1	ND	ug/L	U	3.8	5
2-Naphthylamine	91-59-8	1	ND	ug/L	U	3.9	5
2-Nitroaniline	88-74-4	1	ND	ug/L	U	3.7	25
3-Nitroaniline	99-09-2	1	ND	ug/L	U	3.4	25
4-Nitroaniline	100-01-6	1	ND	ug/L	U	6.4	25
Nitrobenzene	98-95-3	1	ND	ug/L	U	4.7	5
2-Nitrophenol	88-75-5	1	ND	ug/L	U	4.3	5
4-Nitrophenol	100-02-7	1	ND	ug/L	U	8.4	25
N-Nitroso-di-n-butylamine	924-16-3	1	ND	ug/L	U	3	5
N-Nitrosodiethylamine	55-18-5	1	ND	ug/L	U	10	10
N-Nitrosodimethylamine	62-75-9	1	ND	ug/L	U	2	10
N-Nitrosodiphenylamine	86-30-6	1	ND	ug/L	U	5.2	25
N-Nitrosodipropylamine	621-64-7	1	ND	ug/L	U	3.1	5
N-Nitrosomethylethylamine	10595-95-6	1	ND	ug/L	U	10	10
N-Nitrosomorpholine	59-89-2	1	ND	ug/L	U	10	10
N-Nitrosopiperidine	100-75-4	1	ND	ug/L	U	3.4	10
N-Nitrosopyrrolidine	930-55-2	1	ND	ug/L	U	10	10
5-Nitro-o-toluidine	99-55-8	1	ND	ug/L	U	10	10
4-Nitroquinoline-n-oxide	56-57-5	1	ND	ug/L	U	100	100

Review By: Bob Cathel

Report Approved By: Ty Garber

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- RL - Method Reporting Limit

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-2
 Project Number: 95-321
 Sample ID: L2646-4
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
Pentachlorobenzene	608-93-5	1	ND	ug/L	U	3.9	5
Pentachloroethane	76-01-7	1	ND	ug/L	U	10	10
Pentachloronitrobenzene	82-68-8	1	ND	ug/L	U	4.7	10
Pentachlorophenol	87-86-5	1	ND	ug/L	U	5.7	25
Phenacetin	62-44-2	1	ND	ug/L	U	5.9	25
Phenanthrene	85-01-8	1	ND	ug/L	U	2.5	5
Phenol	108-95-2	1	ND	ug/L	U	3.4	5
p-Phenylenediamine	106-50-3	1	ND	ug/L	U	100	100
2-Picoline	109-06-8	1	ND	ug/L	U	3.6	5
Pronamide	23950-58-5	1	ND	ug/L	U	3.8	5
Pyrene	129-00-0	1	ND	ug/L	U	3.5	5
Pyridine	110-86-1	1	ND	ug/L	U	10	10
Safrole	94-59-7	1	ND	ug/L	U	10	10
1,2,4,5-Tetrachlorobenzene	95-94-3	1	ND	ug/L	U	5.1	10
2,3,4,6-Tetrachlorophenol	58-90-2	1	ND	ug/L	U	4.5	5
o-Toluidine	95-53-4	1	ND	ug/L	U	10	10
1,2,4-Trichlorobenzene	120-82-1	1	ND	ug/L	U	3.2	5
2,4,5-Trichlorophenol	95-95-4	1	ND	ug/L	U	5.6	25
2,4,6-Trichlorophenol	88-06-2	1	ND	ug/L	U	4.4	5
1,3,5-Trinitrobenzene	99-35-4	1	ND	ug/L	U	10	10
Nitrobenzene-d5	SURROGATE	1	68	%			
2-Fluorobiphenyl	SURROGATE	1	76	%			
p-Terphenyl-d14	SURROGATE	1	56	%			
Phenol-d6	SURROGATE	1	64	%			
2-Fluorophenol	SURROGATE	1	57	%			
2,4,6-Tribromophenol	SURROGATE	1	67	%			

Review By: Bob Cathel

Report Approved By: Ty Garber

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Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-2
 Project Number: 95-321
 Sample ID: L2646-4
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 3520/8270							
Preparation Date: 02-APR-96							
Analysis Date: 17-APR-96 20:02							
Workgroup Number: WG6064							
Acenaphthene	83-32-9	1	ND	ug/L	U	4.2	5
Acenaphthylene	208-96-8	1	ND	ug/L	U	3.5	5
Anthracene	120-12-7	1	ND	ug/L	U	2.6	5
Benzo(a)anthracene	56-55-3	1	ND	ug/L	U	2.8	5
Benzo(a)pyrene	50-32-8	1	ND	ug/L	U	3.5	5
Benzo(b)fluoranthene	205-99-2	1	ND	ug/L	U	2.6	5
Benzo(g,h,i)perylene	191-24-2	1	ND	ug/L	U	3.1	5
Benzo(k)fluoranthene	207-08-9	1	ND	ug/L	U	3.9	5
Chrysene	218-01-9	1	ND	ug/L	U	4.2	5
Dibenz(a,h)anthracene	53-70-3	1	ND	ug/L	U	3.4	5
Dibenz(a,j)acridine	224-42-0	1	ND	ug/L	U	5.3	25
Dibenzofuran	132-64-9	1	ND	ug/L	U	4	5
Fluoranthene	206-44-0	1	ND	ug/L	U	4	5
Fluorene	86-73-7	1	ND	ug/L	U	3.3	5
Indeno(1,2,3-cd)pyrene	193-39-5	1	ND	ug/L	U	3.1	5
2-Methylnaphthalene	91-57-6	1	ND	ug/L	U	2.8	5
Naphthalene	91-20-3	1	ND	ug/L	U	2.4	5
Phenanthrene	85-01-8	1	ND	ug/L	U	2.5	5
Pyrene	129-00-0	1	ND	ug/L	U	3.5	5
Nitrobenzene-d5	SURROGATE	1	68	%			
2-Fluorobiphenyl	SURROGATE	1	76	%			
p-Terphenyl-d14	SURROGATE	1	56	%			

Review By: Bob Cathel

Report Approved By: Ty Garber

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Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-2
 Project Number: 95-321
 Sample ID: L2646-4
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Methods 3520/8080							
Preparation Date: 04-APR-96							
Analysis Date: 10-APR-96 21:47							
Workgroup Number: WG6093							
Aldrin	309-00-2	1	ND	ug/L	U	.05	.05
alpha-BHC	319-84-6	1	ND	ug/L	U	.018	.05
beta-BHC	319-85-7	1	ND	ug/L	U	.015	.05
delta-BHC	319-86-8	1	ND	ug/L	U	.011	.05
gamma-BHC (Lindane)	58-89-9	1	ND	ug/L	U	.013	.05
alpha-Chlordane	5103-71-9	1	ND	ug/L	J	.01	.05
gamma-Chlordane	5103-74-2	1	ND	ug/L	J	.01	.05
Chlorobenzilate	510-15-6	1	ND	ug/L	U	.05	.1
4,4'-DDD	72-54-8	1	ND	ug/L	U	.078	.1
4,4'-DDE	72-55-9	1	ND	ug/L	U	.017	.1
4,4'-DDT	50-29-3	1	ND	ug/L	U	.031	.1
Diallate	60-57-1	1	ND	ug/L	U	.5	1
Dieldrin	60-57-1	1	ND	ug/L	U	.012	.1
Endosulfan I	959-98-8	1	ND	ug/L	U	.015	.05
Endosulfan II	33213-65-9	1	ND	ug/L	U	.013	.1
Endosulfan sulfate	1031-07-8	1	ND	ug/L	U	.018	.1
Endrin	72-20-8	1	ND	ug/L	U	.013	.1
Endrin aldehyde	7421-93-4	1	ND	ug/L	U	.081	.1
Heptachlor	76-44-8	1	ND	ug/L	U	.036	.05
Heptachlor epoxide	1024-57-3	1	ND	ug/L	U	.014	.05
Isodrin	465-73-6	1	ND	ug/L	U	.05	.1
Kepone	143-50-0	1	ND	ug/L	U	.5	1
Methoxychlor	72-43-5	1	ND	ug/L	U	.049	.5
Toxaphene	8001-35-2	1	ND	ug/L	U	.24	2.4
Aroclor-1016	12674-11-2	1	ND	ug/L	U	.18	.5
Aroclor-1221	11104-28-2	1	ND	ug/L	U	.11	.5
Aroclor-1232	11141-16-5	1	ND	ug/L	U	.11	.5
Aroclor-1242	53469-21-9	1	ND	ug/L	U	.11	.5
Aroclor-1248	12672-29-6	1	ND	ug/L	U	.11	.5
Aroclor-1254	11097-69-1	1	ND	ug/L	U	.11	1
Aroclor-1260	11096-82-5	1	ND	ug/L	U	.11	1
Tetrachloro-m-xylene	SURROGATE	1	87	%			

Review By: Bob Cathel

Report Approved By: Ty Garber

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- Dil - Sample Dilution Factor
- ND - Sample Concentration Not Detected above MDL
- MDL - Method Detection Limit
- RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-2
Project Number: 95-321
Sample ID: L2646-4
Site / Project ID: CAFB
Run ID: R3498
Collection Date: 28-MAR-96
Received Date: 30-MAR-96
Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
Decachlorobiphenyl	SURROGATE	1	81	%			

Review By: Bob Cathel

Report Approved By: Ty Garber

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Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-2
 Project Number: 95-321
 Sample ID: L2646-4
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Met. 6010 (APIX)							
Preparation Date: 09-APR-96							
Analysis Date: 11-APR-96 12:35							
Workgroup Number: WG6173							
Barium	7440-39-3	1	.0579	mg/L		.00026	.02
Beryllium	7440-41-7	1	ND	mg/L	U	.00016	.004
Cadmium	7440-43-9	1	ND	mg/L	U	.0019	.005
Chromium	7440-47-3	1	ND	mg/L	U	.0045	.01
Cobalt	7440-48-4	1	ND	mg/L	U	.0053	.05
Copper	7440-50-8	1	ND	mg/L	U	.0073	.01
Nickel	7440-02-0	1	ND	mg/L	U	.0056	.02
Silver	7440-22-4	1	.0025	mg/L	J	.0019	.01
Tin	7440-31-5	1	ND	mg/L	U	.054	.1
Vanadium	7440-62-2	1	.016	mg/L	J	.0017	.05
Zinc	7440-66-6	1	.0255	mg/L		.0052	.02

Review By: Bob Cathel

Report Approved By: Ty Garber

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- Dil - Sample Dilution Factor
- ND - Sample Concentration Not Detected above MDL
- MDL - Method Detection Limit
- RL - Method Reporting Limit

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-2
 Project Number: 95-321
 Sample ID: L2646-4
 Site / Project ID: CAFB
 Run ID: R3451
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 7041 Analysis Date: 11-APR-96 08:36 Workgroup Number: WG6131							
Antimony	7440-36-0	1	ND	mg/L	U	.00068	.006
SW846 Method 7060 Analysis Date: 10-APR-96 10:40 Workgroup Number: WG6128							
Arsenic	7440-38-2	1	ND	mg/L	U	.00073	.005
SW846 Method 7421 Analysis Date: 10-APR-96 07:44 Workgroup Number: WG6126							
Lead	7439-92-1	1	ND	mg/L	U	.00089	.003
SW846 Method 7740 Analysis Date: 10-APR-96 10:05 Workgroup Number: WG6127							
Selenium	7782-49-2	1	.0136	mg/L	U	.000735	.005
SW846 Method 7841 Analysis Date: 10-APR-96 09:34 Workgroup Number: WG6129							
Thallium	7440-26-0	1	ND	mg/L	U	.00079	.005
SW846 Method 7470 Analysis Date: 12-APR-96 14:49 Workgroup Number: WG6180							
Mercury	7439-97-6	1	ND	mg/L	U	.00005	.0002

Review By: Bob Cathel

Report Approved By: Ty Garber

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- Dil - Sample Dilution Factor
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 MDL - Method Detection Limit
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Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-2
 Project Number: 95-321
 Sample ID: L2646-4
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 9012							
Analysis Date: 03-APR-96 11:30							
Workgroup Number: WG6094							
Cyanide (tot.)	N/A	1	ND	mg/L	U	.005	.02
Cyanide (amen.)	N/A	1	ND	mg/L	U	.005	.02
SW-846, Method 9030							
Preparation Date: 01-APR-96							
Analysis Date: 01-APR-96 08:42							
Workgroup Number: WG6048							
Sulfide	N/A	1	ND	mg/L	U	.48	1
SW-846, Method 9060							
Analysis Date: 01-APR-96 09:30							
Workgroup Number: WG6046							
Total Organic Carbon	N/A	1	.55	mg/L	J	.15	1
SW-846, Method 9020							
Analysis Date: 08-APR-96 13:14							
Workgroup Number: WG6122							
Total Organic Halides	N/A	1	.017	mg/L		.001	.005

Review By: Bob Cathel

Report Approved By: Ty Garber

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2,3,7,8-TCDD
LOW RESOLUTION

Client Name: Hydrologic Laboratories
Client ID: L2646-4
Lab ID: 087030-0003-SA
Matrix: AQUEOUS
Authorized: 03 APR 96

Sampled: 28 MAR 96
Prepared: 05 APR 96

Received: 03 APR 96
Analyzed: 08 APR 96

Sample Amount 1.05 L
Column Type SP-2331

Parameter	Result	Units	Detection Limit	Data Qualifiers
Dioxins				
2,3,7,8-TCDD	ND	ng/L	0.93	
	% Recovery			
13C-2,3,7,8-TCDD	73			

ND = Not detected
NA = Not applicable

Reported By: Maricel Baquerfo

Approved By: Robert Hrabak

The cover letter is an integral part of this report.
Rev 230787

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-1
 Project Number: 95-321
 Sample ID: L2646-2
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Met. 8260 (APIX)							
Preparation Date: 05-APR-96							
Analysis Date: 05-APR-96 20:02							
Workgroup Number: WG6107							
Acetone	67-64-1	1	ND	ug/L	U	1.5	100
Acetonitrile	75-05-8	1	ND	ug/L	U	.5	100
Acrolein	107-02-8	1	ND	ug/L	U	.5	100
Acrylonitrile	107-13-1	1	ND	ug/L	U	.5	100
Allyl chloride	107-05-1	1	ND	ug/L	U	.5	10
Benzene	71-43-2	1	ND	ug/L	U	.39	5
Bromodichloromethane	75-27-4	1	ND	ug/L	U	.64	5
Bromoform	75-25-2	1	ND	ug/L	U	.47	5
Bromomethane	74-83-9	1	ND	ug/L	U	.49	10
2-Butanone	78-93-3	1	ND	ug/L	U	1.1	100
Carbon disulfide	75-15-0	1	ND	ug/L	U	1.1	100
Carbon tetrachloride	56-23-5	1	ND	ug/L	U	1.4	5
Chlorobenzene	108-90-7	1	ND	ug/L	U	.44	5
Chloroethane	75-00-3	1	ND	ug/L	U	.54	10
Chloroform	67-66-3	1	ND	ug/L	U	1.4	5
Chloromethane	74-87-3	1	ND	ug/L	U	2	10
3-Chloropropylene	107-05-1	1	ND	ug/L	U	.5	5
Dibromochloromethane	124-48-1	1	ND	ug/L	U	.5	5
1,2-Dibromo-3-chloropropane	96-12-8	1	ND	ug/L	U	.61	100
1,2-Dibromoethane	106-93-4	1	ND	ug/L	U	.5	5
Dibromomethane	74-95-3	1	ND	ug/L	U	1.4	5
trans-1,4-Dichloro-2-butene	110-57-6	1	ND	ug/L	U	5	5
Dichlorodifluoromethane	75-71-8	1	ND	ug/L	U	.43	10
1,1-Dichloroethane	75-34-3	1	ND	ug/L	U	1.7	5
1,2-Dichloroethane	107-06-2	1	ND	ug/L	U	2.1	5
1,1-Dichloroethene	75-35-4	1	ND	ug/L	U	.48	5
trans-1,2-Dichloroethene	156-60-5	1	ND	ug/L	U	.55	5
cis-1,2-Dichloroethene	156-59-2	1	ND	ug/L	U	.5	5
1,2-Dichloropropane	78-87-5	1	ND	ug/L	U	.51	5
cis-1,3-Dichloropropene	10061-01-5	1	ND	ug/L	U	.78	5
trans-1,3-Dichloropropene	10061-02-6	1	ND	ug/L	U	.55	5
1,4-Dioxane	123-91-1	1	ND	ug/L	U	100	100

Review By: Bob Cathel

Report Approved By: Ty Garber

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Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-1
 Project Number: 95-321
 Sample ID: L2646-2
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
Ethylbenzene	100-41-4	1	ND	ug/L	U	.75	5
Ethyl methacrylate	97-63-2	1	ND	ug/L	U	.5	5
2-Hexanone	591-78-6	1	ND	ug/L	U	.5	100
Iodomethane	74-88-4	1	ND	ug/L	U	10	10
Methacrylonitrile	126-98-7	1	ND	ug/L	U	.5	100
Methylene chloride	75-09-2	1	ND	ug/L	U	.75	5
Methyl methacrylate	80-62-6	1	ND	ug/L	U	.5	50
4-Methyl-2-pentanone	108-10-1	1	ND	ug/L	U	.56	50
Propionitrile	107-12-0	1	ND	ug/L	U	.5	5
Styrene	100-42-5	1	ND	ug/L	U	.5	5
1,1,1,2-Tetrachloroethane	630-20-6	1	ND	ug/L	U	.45	5
1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ug/L	U	.63	5
Tetrachloroethene	127-18-4	1	ND	ug/L	U	.49	5
Toluene	108-88-3	1	ND	ug/L	U	.85	5
1,1,1-Trichloroethane	71-55-6	1	ND	ug/L	U	1.7	5
1,1,2-Trichloroethane	79-00-5	1	ND	ug/L	U	1.2	5
Trichloroethene	79-01-6	1	ND	ug/L	U	.42	5
Trichlorofluoromethane	75-69-4	1	ND	ug/L	U	.5	5
1,2,3-Trichloropropane	96-18-4	1	ND	ug/L	U	1.1	5
Vinyl acetate	108-05-4	1	ND	ug/L	U	5	10
Vinyl chloride	75-01-4	1	ND	ug/L	U	.47	2
Xylene (Total)	1330-20-7	1	ND	ug/L	U	1	5
Dibromofluoromethane	SURROGATE	1	99	%			
Toluene-d8	SURROGATE	1	103	%			
4-Bromofluorobenzene	SURROGATE	1	102	%			

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Report Approved By: Ty Garber

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Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-1
 Project Number: 95-321
 Sample ID: L2646-2
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Met. 8270 (APIX)							
Preparation Date: 02-APR-96							
Analysis Date: 11-APR-96 23:55							
Workgroup Number: WG6064							
Acenaphthene	83-32-9	1	ND	ug/L	U	4.2	5
Acenaphthylene	208-96-8	1	ND	ug/L	U	3.5	5
Acetophenone	98-86-2	1	ND	ug/L	U	2.9	5
2-Acetylaminofluorene	53-96-3	1	ND	ug/L	U	100	100
4-Aminobiphenyl	92-67-1	1	ND	ug/L	U	3.3	10
Aniline	62-53-3	1	ND	ug/L	U	2.4	5
Anthracene	120-12-7	1	ND	ug/L	U	2.6	5
Aramite	140-57-8	1	ND	ug/L	U	10	10
Benz(a)anthracene	56-55-3	1	ND	ug/L	U	2.8	5
Benzo(b)fluoranthene	205-99-2	1	ND	ug/L	U	2.6	5
Benzo(k)fluoranthene	207-08-9	1	ND	ug/L	U	3.9	5
Benzo(g,h,i)perylene	191-24-2	1	ND	ug/L	U	3.1	5
Benzo(a)pyrene	50-32-8	1	ND	ug/L	U	3.5	5
Benzyl alcohol	100-51-6	1	ND	ug/L	U	2.4	5
4-Bromophenyl phenyl ether	101-55-3	1	ND	ug/L	U	2.6	5
Butyl benzyl phthalate	85-68-7	1	ND	ug/L	U	2.7	5
2-sec-Butyl-4,6-dinitrophenol	88-85-7	1	ND	ug/L	U	10	10
4-Chloroaniline	106-47-8	1	ND	ug/L	U	3.8	5
Bis(2-chloroethoxy)methane	111-91-1	1	ND	ug/L	U	2.9	5
Bis(2-chloroethyl) ether	111-44-4	1	ND	ug/L	U	2.1	5
Bis(2-chloroisopropyl) ether	108-60-1	1	ND	ug/L	U	1.9	5
4-Chloro-3-methylphenol	59-50-7	1	ND	ug/L	U	3.2	5
2-Chloronaphthalene	91-58-7	1	ND	ug/L	U	4.2	5
2-Chlorophenol	95-57-8	1	ND	ug/L	U	2.9	5
4-Chlorophenyl phenyl ether	7005-72-3	1	ND	ug/L	U	3.9	5

Review By: Bob Cathel

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Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-1
 Project Number: 95-321
 Sample ID: L2646-2
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
Chrysene	218-01-9	1	ND	ug/L	U	4.2	5
Dibenz(a,h)anthracene	53-70-3	1	ND	ug/L	U	3.4	5
Dibenzofuran	132-64-9	1	ND	ug/L	U	4	5
1,3-Dichlorobenzene	541-73-1	1	ND	ug/L	U	3	5
1,4-Dichlorobenzene	106-46-7	1	ND	ug/L	U	2.9	5
1,2-Dichlorobenzene	95-50-1	1	ND	ug/L	U	2.6	5
Di-n-butyl phthalate	84-74-2	1	ND	ug/L	U	5.2	20
3,3'-Dichlorobenzidine	91-94-1	1	ND	ug/L	U	3.6	10
2,4-Dichlorophenol	120-83-2	1	ND	ug/L	U	4.4	5
2,6-Dichlorophenol	87-65-0	1	ND	ug/L	U	4.4	5
Diethyl phthalate	84-66-2	1	ND	ug/L	U	5.1	10
p-Dimethylaminoazobenzene	60-11-7	1	ND	ug/L	U	2.5	5
7,12-Dimethylbenz(a)anthracene	57-97-6	1	ND	ug/L	U	3.4	5
3,3'-Dimethylbenzidine	119-93-7	1	ND	ug/L	U	5	10
a,a-Dimethylphenethylamine	122-09-8	1	ND	ug/L	U	4.5	100
2,4-Dimethylphenol	105-67-9	1	ND	ug/L	U	3.2	5
Dimethyl phthalate	131-11-3	1	ND	ug/L	U	4.8	5
1,3-Dinitrobenzene	99-65-0	1	ND	ug/L	U	5	10
4,6-Dinitro-2-methylphenol	534-52-1	1	ND	ug/L	U	4.3	25
2,4-Dinitrophenol	51-28-5	1	ND	ug/L	U	6.9	25
2,4-Dinitrotoluene	121-14-2	1	ND	ug/L	U	2.9	5
2,6-Dinitrotoluene	606-20-2	1	ND	ug/L	U	3.8	5
Di-n-octyl phthalate	117-84-0	1	ND	ug/L	U	2.7	5
Diphenylamine	122-39-4	1	ND	ug/L	U	4.2	10
bis(2-ethylhexyl) phthalate	117-81-7	1	ND	ug/L	UB	3.6	5
Ethyl methanesulfonate	62-50-0	1	ND	ug/L	U	2.6	10
Fluoranthene	206-44-0	1	ND	ug/L	U	4	5
Fluorene	86-73-7	1	ND	ug/L	U	3.3	5
Hexachlorobenzene	118-74-1	1	ND	ug/L	U	2.5	5
Hexachlorobutadiene	87-68-3	1	ND	ug/L	U	3	5
Hexachlorocyclopentadiene	77-47-4	1	ND	ug/L	U	2.2	5

Review By: Bob Cathel

Report Approved By: Ty Garber

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Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-1
 Project Number: 95-321
 Sample ID: L2646-2
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
Hexachloroethane	67-72-1	1	ND	ug/L	U	4.7	5
Hexachloropropene	1888-71-7	1	ND	ug/L	U	5	5
Hexachlorophene	70-30-4	1	ND	ug/L	U	100	100
Indeno(1,2,3-cd)pyrene	193-39-5	1	ND	ug/L	U	3.1	5
Isophorone	78-59-1	1	ND	ug/L	U	3	5
Isosafrole	120-58-1	1	ND	ug/L	U	20	20
Methapyrilene	91-80-5	1	ND	ug/L	U	10	10
3-Methylcholanthrene	56-49-5	1	ND	ug/L	U	2.7	5
Methyl methanesulfonate	66-27-3	1	ND	ug/L	U	2.9	5
2-Methylnaphthalene	91-57-6	1	ND	ug/L	U	2.8	5
2-Methylphenol	95-48-7	1	ND	ug/L	U	1.9	5
3&4-Methylphenol	NA	1	ND	ug/L	U	2	5
Naphthalene	91-20-3	1	ND	ug/L	U	2.4	5
1,4-Naphthoquinone	130-15-4	1	ND	ug/L	U	10	10
1-Naphthylamine	134-32-7	1	ND	ug/L	U	3.8	5
2-Naphthylamine	91-59-8	1	ND	ug/L	U	3.9	5
2-Nitroaniline	88-74-4	1	ND	ug/L	U	3.7	25
3-Nitroaniline	99-09-2	1	ND	ug/L	U	3.4	25
4-Nitroaniline	100-01-6	1	ND	ug/L	U	6.4	25
Nitrobenzene	98-95-3	1	ND	ug/L	U	4.7	5
2-Nitrophenol	88-75-5	1	ND	ug/L	U	4.3	5
4-Nitrophenol	100-02-7	1	ND	ug/L	U	8.4	25
N-Nitroso-di-n-butylamine	924-16-3	1	ND	ug/L	U	3	5
N-Nitrosodiethylamine	55-18-5	1	ND	ug/L	U	10	10
N-Nitrosodimethylamine	62-75-9	1	ND	ug/L	U	2	10
N-Nitrosodiphenylamine	86-30-6	1	ND	ug/L	U	5.2	25
N-Nitrosodipropylamine	621-64-7	1	ND	ug/L	U	3.1	5
N-Nitrosomethylethylamine	10595-95-6	1	ND	ug/L	U	10	10
N-Nitrosomorpholine	59-89-2	1	ND	ug/L	U	10	10
N-Nitrosopiperidine	100-75-4	1	ND	ug/L	U	3.4	10
N-Nitrosopyrrolidine	930-55-2	1	ND	ug/L	U	10	10
5-Nitro-o-toluidine	99-55-8	1	ND	ug/L	U	10	10
4-Nitroquinoline-n-oxide	56-57-5	1	ND	ug/L	U	100	100

Review By: Bob Cathel

Report Approved By: Ty Garber

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- Dil - Sample Dilution Factor
- ND - Sample Concentration Not Detected above MDL
- MDL - Method Detection Limit
- RL - Method Reporting Limit

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-1
 Project Number: 95-321
 Sample ID: L2646-2
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
Pentachlorobenzene	608-93-5	1	ND	ug/L	U	3.9	5
Pentachloroethane	76-01-7	1	ND	ug/L	U	10	10
Pentachloronitrobenzene	82-68-8	1	ND	ug/L	U	4.7	10
Pentachlorophenol	87-86-5	1	ND	ug/L	U	5.7	25
Phenacetin	62-44-2	1	ND	ug/L	U	5.9	25
Phenanthrene	85-01-8	1	ND	ug/L	U	2.5	5
Phenol	108-95-2	1	ND	ug/L	U	3.4	5
p-Phenylenediamine	106-50-3	1	ND	ug/L	U	100	100
2-Picoline	109-06-8	1	ND	ug/L	U	3.6	5
Pronamide	23950-58-5	1	ND	ug/L	U	3.8	5
Pyrene	129-00-0	1	ND	ug/L	U	3.5	5
Pyridine	110-86-1	1	ND	ug/L	U	10	10
Safrole	94-59-7	1	ND	ug/L	U	10	10
1,2,4,5-Tetrachlorobenzene	95-94-3	1	ND	ug/L	U	5.1	10
2,3,4,6-Tetrachlorophenol	58-90-2	1	ND	ug/L	U	4.5	5
o-Toluidine	95-53-4	1	ND	ug/L	U	10	10
1,2,4-Trichlorobenzene	120-82-1	1	ND	ug/L	U	3.2	5
2,4,5-Trichlorophenol	95-95-4	1	ND	ug/L	U	5.6	25
2,4,6-Trichlorophenol	88-06-2	1	ND	ug/L	U	4.4	5
1,3,5-Trinitrobenzene	99-35-4	1	ND	ug/L	U	10	10
Nitrobenzene-d5	SURROGATE	1	60	%			
2-Fluorobiphenyl	SURROGATE	1	68	%			
p-Terphenyl-d14	SURROGATE	1	78	%			
Phenol-d6	SURROGATE	1	68	%			
2-Fluorophenol	SURROGATE	1	58	%			
2,4,6-Tribromophenol	SURROGATE	1	46	%			

Review By: Bob Cathel

Report Approved By: Ty Garber

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- Dil - Sample Dilution Factor
- ND - Sample Concentration Not Detected above MDL
- MDL - Method Detection Limit
- RL - Method Reporting Limit

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-1
 Project Number: 95-321
 Sample ID: L2646-2
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 3520/8270							
Preparation Date: 02-APR-96							
Analysis Date: 11-APR-96 23:55							
Workgroup Number: WG6064							
Acenaphthene	83-32-9	1	ND	ug/L	U	4.2	5
Acenaphthylene	208-96-8	1	ND	ug/L	U	3.5	5
Anthracene	120-12-7	1	ND	ug/L	U	2.6	5
Benzo(a)anthracene	56-55-3	1	ND	ug/L	U	2.8	5
Benzo(a)pyrene	50-32-8	1	ND	ug/L	U	3.5	5
Benzo(b)fluoranthene	205-99-2	1	ND	ug/L	U	2.6	5
Benzo(g,h,i)perylene	191-24-2	1	ND	ug/L	U	3.1	5
Benzo(k)fluoranthene	207-08-9	1	ND	ug/L	U	3.9	5
Chrysene	218-01-9	1	ND	ug/L	U	4.2	5
Dibenz(a,h)anthracene	53-70-3	1	ND	ug/L	U	3.4	5
Dibenz(a,j)acridine	224-42-0	1	ND	ug/L	U	5.3	25
Dibenzofuran	132-64-9	1	ND	ug/L	U	4	5
Fluoranthene	206-44-0	1	ND	ug/L	U	4	5
Fluorene	86-73-7	1	ND	ug/L	U	3.3	5
Indeno(1,2,3-cd)pyrene	193-39-5	1	ND	ug/L	U	3.1	5
2-Methylnaphthalene	91-57-6	1	ND	ug/L	U	2.8	5
Naphthalene	91-20-3	1	ND	ug/L	U	2.4	5
Phenanthrene	85-01-8	1	ND	ug/L	U	2.5	5
Pyrene	129-00-0	1	ND	ug/L	U	3.5	5
Nitrobenzene-d5	SURROGATE	1	60	%			
2-Fluorobiphenyl	SURROGATE	1	68	%			
p-Terphenyl-d14	SURROGATE	1	78	%			

Review By: Bob Cathel

Report Approved By: Ty Garber

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- Dil - Sample Dilution Factor
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- MDL - Method Detection Limit
- RL - Method Reporting Limit

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-1
 Project Number: 95-321
 Sample ID: L2646-2
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Methods 3520/8080							
Preparation Date: 04-APR-96							
Analysis Date: 10-APR-96 21:06							
Workgroup Number: WG6093							
Aldrin	309-00-2	1	ND	ug/L	U	.05	.05
alpha-BHC	319-84-6	1	ND	ug/L	U	.018	.05
beta-BHC	319-85-7	1	ND	ug/L	U	.015	.05
delta-BHC	319-86-8	1	ND	ug/L	U	.011	.05
gamma-BHC (Lindane)	58-89-9	1	ND	ug/L	U	.013	.05
alpha-Chlordane	5103-71-9	1	ND	ug/L	J	.01	.05
gamma-Chlordane	5103-74-2	1	ND	ug/L	J	.01	.05
Chlorobenzilate	510-15-6	1	ND	ug/L	U	.05	.1
4,4'-DDD	72-54-8	1	ND	ug/L	U	.078	.1
4,4'-DDE	72-55-9	1	ND	ug/L	U	.017	.1
4,4'-DDT	50-29-3	1	ND	ug/L	U	.031	.1
Diallate	60-57-1	1	ND	ug/L	U	.5	1
Dieldrin	60-57-1	1	ND	ug/L	U	.012	.1
Endosulfan I	959-98-8	1	ND	ug/L	U	.015	.05
Endosulfan II	33213-65-9	1	ND	ug/L	U	.013	.1
Endosulfan sulfate	1031-07-8	1	ND	ug/L	U	.018	.1
Endrin	72-20-8	1	ND	ug/L	U	.013	.1
Endrin aldehyde	7421-93-4	1	ND	ug/L	U	.081	.1
Heptachlor	76-44-8	1	ND	ug/L	U	.036	.05
Heptachlor epoxide	1024-57-3	1	ND	ug/L	U	.014	.05
Isodrin	465-73-6	1	ND	ug/L	U	.05	.1
Kepone	143-50-0	1	ND	ug/L	U	.5	1
Methoxychlor	72-43-5	1	ND	ug/L	U	.049	.5
Toxaphene	8001-35-2	1	ND	ug/L	U	.24	2.4
Aroclor-1016	12674-11-2	1	ND	ug/L	U	.18	.5
Aroclor-1221	11104-28-2	1	ND	ug/L	U	.11	.5
Aroclor-1232	11141-16-5	1	ND	ug/L	U	.11	.5
Aroclor-1242	53469-21-9	1	ND	ug/L	U	.11	.5
Aroclor-1248	12672-29-6	1	ND	ug/L	U	.11	.5
Aroclor-1254	11097-69-1	1	ND	ug/L	U	.11	1
Aroclor-1260	11096-82-5	1	ND	ug/L	U	.11	1
Tetrachloro-m-xylene	SURROGATE	1	52	%			

Review By: Bob Cathel

Report Approved By: Ty Garber

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- Dil - Sample Dilution Factor
- ND - Sample Concentration Not Detected above MDL
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- RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-1
Project Number: 95-321
Sample ID: L2646-2
Site / Project ID: CAFB
Run ID: R3498
Collection Date: 28-MAR-96
Received Date: 30-MAR-96
Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
Decachlorobiphenyl	SURROGATE	1	15	%			

Review By: Bob Cathel

Report Approved By: Ty Garber

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Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
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Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-1
 Project Number: 95-321
 Sample ID: L2646-2
 Site / Project ID: CAFB
 Run ID: R3416
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Met. 6010 (APIX)							
Preparation Date: 09-APR-96							
Analysis Date: 11-APR-96 12:32							
Workgroup Number: WG6173							
Barium	7440-39-3	1	.0596	mg/L		.00026	.02
Beryllium	7440-41-7	1	ND	mg/L	U	.00016	.004
Cadmium	7440-43-9	1	ND	mg/L	U	.0019	.005
Chromium	7440-47-3	1	ND	mg/L	U	.0045	.01
Cobalt	7440-48-4	1	ND	mg/L	U	.0053	.05
Copper	7440-50-8	1	ND	mg/L	U	.0073	.01
Nickel	7440-02-0	1	ND	mg/L	U	.0056	.02
Silver	7440-22-4	1	ND	mg/L	U	.0019	.01
Tin	7440-31-5	1	ND	mg/L	U	.054	.1
Vanadium	7440-62-2	1	.018	mg/L	J	.0017	.05
Zinc	7440-66-6	1	.0209	mg/L		.0052	.02

Review By: Bob Cathel

Report Approved By: Ty Garber

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- Dil - Sample Dilution Factor
 ND - Sample Concentration Not Detected above MDL
 MDL - Method Detection Limit
 RL - Method Reporting Limit

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-1
 Project Number: 95-321
 Sample ID: L2646-2
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 7041 Analysis Date: 11-APR-96 08:11 Workgroup Number: WG6131							
Antimony	7440-36-0	1	ND	mg/L	U	.00068	.006
SW846 Method 7060 Analysis Date: 10-APR-96 11:09 Workgroup Number: WG6128							
Arsenic	7440-38-2	1	ND	mg/L	U	.00073	.005
SW846 Method 7421 Analysis Date: 10-APR-96 15:37 Workgroup Number: WG6126							
Lead	7439-92-1	1	ND	mg/L	U	.00089	.003
SW846 Method 7740 Analysis Date: 10-APR-96 10:37 Workgroup Number: WG6127							
Selenium	7782-49-2	1	.012	mg/L	U	.000735	.005
SW846 Method 7841 Analysis Date: 10-APR-96 09:09 Workgroup Number: WG6129							
Thallium	7440-26-0	1	ND	mg/L	U	.00079	.01
SW846 Method 7470 Analysis Date: 12-APR-96 14:47 Workgroup Number: WG6180							
Mercury	7439-97-6	1	ND	mg/L	U	.00005	.0002

Review By: Bob Cathel

Report Approved By: Ty Garber

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- Dil - Sample Dilution Factor
- ND - Sample Concentration Not Detected above MDL
- MDL - Method Detection Limit
- RL - Method Reporting Limit

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: CAFB-MWN-032896-1
 Project Number: 95-321
 Sample ID: L2646-2
 Site / Project ID: CAFB
 Run ID: R3498
 Collection Date: 28-MAR-96
 Received Date: 30-MAR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 9012							
Analysis Date: 03-APR-96 11:30							
Workgroup Number: WG6094							
Cyanide (tot.)	N/A	1	ND	mg/L	U	.005	.02
Cyanide (amen.)	N/A	1	ND	mg/L	U	.005	.02
SW-846, Method 9030							
Preparation Date: 01-APR-96							
Analysis Date: 01-APR-96 08:42							
Workgroup Number: WG6048							
Sulfide	N/A	1	ND	mg/L	U	.48	1
SW-846, Method 9060							
Analysis Date: 01-APR-96 09:30							
Workgroup Number: WG6046							
Total Organic Carbon	N/A	1	.8	mg/L	J	.15	1
SW-846, Method 9020							
Analysis Date: 08-APR-96 14:35							
Workgroup Number: WG6122							
Total Organic Halides	N/A	1	.012	mg/L		.001	.005

Review By: Bob Cathel

Report Approved By: Ty Garber

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2,3,7,8-TCDD
LOW RESOLUTION

Client Name: Hydrologic Laboratories
Client ID: L2646-2
Lab ID: 087030-0002-SA
Matrix: AQUEOUS
Authorized: 03 APR 96

Sampled: 28 MAR 96
Prepared: 05 APR 96

Received: 03 APR 96
Analyzed: 08 APR 96

Sample Amount 1.05 L
Column Type SP-2331

Parameter	Result	Units	Detection Limit	Data Qualifiers
Dioxins				
2,3,7,8-TCDD	ND	ng/L	0.95	
	% Recovery			
13C-2,3,7,8-TCDD	77			

ND = Not detected
NA = Not applicable

Reported By: Maricel Baquerfo

Approved By: Robert Hrabak

The cover letter is an integral part of this report.
Rev 230787

APPENDIX II
QUALITY CONTROL REPORTS

QC

DATA

PACKAGE

2,3,7,8-TCDD

LOW RESOLUTION

Client Name: Hydrologic Laboratories

Client ID: Method Blank

Lab ID: 087030-0001-MB

Matrix: AQUEOUS

Authorized: 03 APR 96

Sampled: NA

Prepared: 05 APR 96

Received: NA

Analyzed: 08 APR 96

Sample Amount 1.0 L
Column Type SP-2331

Parameter	Result	Units	Detection Limit	Data Qualifiers
Dioxins				
2,3,7,8-TCDD	ND	ng/L	0.80	
	% Recovery			
13C-2,3,7,8-TCDD	79			

ND = Not detected
NA = Not applicable

Reported By: Maricel Baquerfo

Approved By: Robert Hrabak

The cover letter is an integral part of this report.
Rev 230787

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
 Project Number: Not Reported
 Sample ID: WG6107-1
 Site / Project ID: Not Reported
 Run ID: R3503
 Collection Date: Not Reported
 Received Date: 11-APR-96
 Report Date: 11-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Met. 8260 (APIX)							
Preparation Date: 05-APR-96							
Analysis Date: 05-APR-96 13:53							
Workgroup Number: WG6107							
Acetone	67-64-1	1	ND	ug/L	U	1.5	100
Acetonitrile	75-05-8	1	ND	ug/L	U	.5	100
Acrolein	107-02-8	1	ND	ug/L	U	.5	100
Acrylonitrile	107-13-1	1	ND	ug/L	U	.5	100
Allyl chloride	107-05-1	1	ND	ug/L	U	.5	10
Benzene	71-43-2	1	ND	ug/L	U	.39	5
Bromodichloromethane	75-27-4	1	ND	ug/L	U	.64	5
Bromoform	75-25-2	1	ND	ug/L	U	.47	5
Bromomethane	74-83-9	1	ND	ug/L	U	.49	10
2-Butanone	78-93-3	1	ND	ug/L	U	1.1	100
Carbon disulfide	75-15-0	1	ND	ug/L	U	1.1	100
Carbon tetrachloride	56-23-5	1	ND	ug/L	U	1.4	5
Chlorobenzene	108-90-7	1	ND	ug/L	U	.44	5
Chloroethane	75-00-3	1	ND	ug/L	U	.54	10
Chloroform	67-66-3	1	ND	ug/L	U	1.4	5
Chloromethane	74-87-3	1	ND	ug/L	U	2	10
3-Chloropropylene	107-05-1	1	ND	ug/L	U	.5	5
Dibromochloromethane	124-48-1	1	ND	ug/L	U	.5	5
1,2-Dibromo-3-chloropropane	96-12-8	1	ND	ug/L	U	.61	100
1,2-Dibromoethane	106-93-4	1	ND	ug/L	U	.5	5
Dibromomethane	74-95-3	1	ND	ug/L	U	1.4	5
trans-1,4-Dichloro-2-butene	110-57-6	1	ND	ug/L	U	5	5
Dichlorodifluoromethane	75-71-8	1	ND	ug/L	U	.43	10
1,1-Dichloroethane	75-34-3	1	ND	ug/L	U	1.7	5
1,2-Dichloroethane	107-06-2	1	ND	ug/L	U	2.1	5
1,1-Dichloroethene	75-35-4	1	ND	ug/L	U	.48	5
trans-1,2-Dichloroethene	156-60-5	1	ND	ug/L	U	.55	5
cis-1,2-Dichloroethene	156-59-2	1	ND	ug/L	U	.5	5
1,2-Dichloropropane	78-87-5	1	ND	ug/L	U	.51	5
cis-1,3-Dichloropropene	10061-01-5	1	ND	ug/L	U	.78	5
trans-1,3-Dichloropropene	10061-02-6	1	ND	ug/L	U	.55	5
1,4-Dioxane	123-91-1	1	ND	ug/L	U	100	100

Review By: Bob Cathel

Report Approved By: Ty Garber

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- Dil - Sample Dilution Factor
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- MDL - Method Detection Limit
- RL - Method Reporting Limit

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
 Project Number: Not Reported
 Sample ID: WG6107-1
 Site / Project ID: Not Reported
 Run ID: R3503
 Collection Date: Not Reported
 Received Date: 11-APR-96
 Report Date: 11-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
Ethylbenzene	100-41-4	1	ND	ug/L	U	.75	5
Ethyl methacrylate	97-63-2	1	ND	ug/L	U	.5	5
2-Hexanone	591-78-6	1	ND	ug/L	U	.5	100
Iodomethane	74-88-4	1	ND	ug/L	U	10	10
Methacrylonitrile	126-98-7	1	ND	ug/L	U	.5	100
Methylene chloride	75-09-2	1	ND	ug/L	U	.75	5
Methyl methacrylate	80-62-6	1	ND	ug/L	U	.5	50
4-Methyl-2-pentanone	108-10-1	1	ND	ug/L	U	.56	50
Propionitrile	107-12-0	1	ND	ug/L	U	.5	5
Styrene	100-42-5	1	ND	ug/L	U	.5	5
1,1,1,2-Tetrachloroethane	630-20-6	1	ND	ug/L	U	.45	5
1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ug/L	U	.63	5
Tetrachloroethene	127-18-4	1	ND	ug/L	U	.49	5
Toluene	108-88-3	1	ND	ug/L	U	.85	5
1,1,1-Trichloroethane	71-55-6	1	ND	ug/L	U	1.7	5
1,1,2-Trichloroethane	79-00-5	1	ND	ug/L	U	1.2	5
Trichloroethene	79-01-6	1	ND	ug/L	U	.42	5
Trichlorofluoromethane	75-69-4	1	ND	ug/L	U	.5	5
1,2,3-Trichloropropane	96-18-4	1	ND	ug/L	U	1.1	5
Vinyl acetate	108-05-4	1	ND	ug/L	U	5	10
Vinyl chloride	75-01-4	1	ND	ug/L	U	.47	2
Xylene (Total)	1330-20-7	1	ND	ug/L	U	1	5
Dibromofluoromethane	SURROGATE	1	94	%			
Toluene-d8	SURROGATE	1	94	%			
4-Bromofluorobenzene	SURROGATE	1	97	%			

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
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 - E = Analyte Conc. is above the Method Calibration Range
 Dil - Sample Dilution Factor
 ND - Sample Concentration Not Detected above MDL
 MDL - Method Detection Limit
 RL - Method Reporting Limit

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
 Project Number: Not Reported
 Sample ID: WG6064-1
 Site / Project ID: Not Reported
 Run ID: R3549
 Collection Date: Not Reported
 Received Date: 02-APR-96
 Report Date: 17-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Met. 8270 (APIX)							
Preparation Date: 02-APR-96							
Analysis Date: 11-APR-96 20:10							
Workgroup Number: WG6064							
Acenaphthene	83-32-9	1	ND	ug/L	U	4.2	5
Acenaphthylene	208-96-8	1	ND	ug/L	U	3.5	5
Acetophenone	98-86-2	1	ND	ug/L	U	2.9	5
2-Acetylaminofluorene	53-96-3	1	ND	ug/L	U	100	100
4-Aminobiphenyl	92-67-1	1	ND	ug/L	U	3.3	10
Aniline	62-53-3	1	ND	ug/L	U	2.4	5
Anthracene	120-12-7	1	ND	ug/L	U	2.6	5
Aramite	140-57-8	1	ND	ug/L	U	10	10
Benz(a)anthracene	56-55-3	1	ND	ug/L	U	2.8	5
Benzo(b)fluoranthene	205-99-2	1	ND	ug/L	U	2.6	5
Benzo(k)fluoranthene	207-08-9	1	ND	ug/L	U	3.9	5
Benzo(g,h,i)perylene	191-24-2	1	ND	ug/L	U	3.1	5
Benzo(a)pyrene	50-32-8	1	ND	ug/L	U	3.5	5
Benzyl alcohol	100-51-6	1	ND	ug/L	U	2.4	5
4-Bromophenyl phenyl ether	101-55-3	1	ND	ug/L	U	2.6	5
Butyl benzyl phthalate	85-68-7	1	ND	ug/L	U	2.7	5
2-sec-Butyl-4,6-dinitrophenol	88-85-7	1	ND	ug/L	U	10	10
4-Chloroaniline	106-47-8	1	ND	ug/L	U	3.8	5
Bis(2-chloroethoxy)methane	111-91-1	1	ND	ug/L	U	2.9	5
Bis(2-chloroethyl) ether	111-44-4	1	ND	ug/L	U	2.1	5
Bis(2-chloroisopropyl) ether	108-60-1	1	ND	ug/L	U	1.9	5
4-Chloro-3-methylphenol	59-50-7	1	ND	ug/L	U	3.2	5
2-Chloronaphthalene	91-58-7	1	ND	ug/L	U	4.2	5
2-Chlorophenol	95-57-8	1	ND	ug/L	U	2.9	5
4-Chlorophenyl phenyl ether	7005-72-3	1	ND	ug/L	U	3.9	5
Chrysene	218-01-9	1	ND	ug/L	U	4.2	5
Dibenz(a,h)anthracene	53-70-3	1	ND	ug/L	U	3.4	5
Dibenzofuran	132-64-9	1	ND	ug/L	U	4	5
1,3-Dichlorobenzene	541-73-1	1	ND	ug/L	U	3	5
1,4-Dichlorobenzene	106-46-7	1	ND	ug/L	U	2.9	5
1,2-Dichlorobenzene	95-50-1	1	ND	ug/L	U	2.6	5
Di-n-butyl phthalate	84-74-2	1	ND	ug/L	U	5.2	20

Review By: Bob Cathel

Report Approved By: Ty Garber

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- Dil - Sample Dilution Factor
- ND - Sample Concentration Not Detected above MDL
- MDL - Method Detection Limit
- RL - Method Reporting Limit

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
 Project Number: Not Reported
 Sample ID: WG6064-1
 Site / Project ID: Not Reported
 Run ID: R3549
 Collection Date: Not Reported
 Received Date: 02-APR-96
 Report Date: 17-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
3,3'-Dichlorobenzidine	91-94-1	1	ND	ug/L	U	3.6	10
2,4-Dichlorophenol	120-83-2	1	ND	ug/L	U	4.4	5
2,6-Dichlorophenol	87-65-0	1	ND	ug/L	U	4.4	5
Diethyl phthalate	84-66-2	1	ND	ug/L	U	5.1	10
p-Dimethylaminoazobenzene	60-11-7	1	ND	ug/L	U	2.5	5
7,12-Dimethylbenz(a)anthracene	57-97-6	1	ND	ug/L	U	3.4	5
3,3'-Dimethylbenzidine	119-93-7	1	ND	ug/L	U	5	10
a,a-Dimethylphenethylamine	122-09-8	1	ND	ug/L	U	4.5	100
2,4-Dimethylphenol	105-67-9	1	ND	ug/L	U	3.2	5
Dimethyl phthalate	131-11-3	1	ND	ug/L	U	4.8	5
1,3-Dinitrobenzene	99-65-0	1	ND	ug/L	U	5	10
4,6-Dinitro-2-methylphenol	534-52-1	1	ND	ug/L	U	4.3	25
2,4-Dinitrophenol	51-28-5	1	ND	ug/L	U	6.9	25
2,4-Dinitrotoluene	121-14-2	1	ND	ug/L	U	2.9	5
2,6-Dinitrotoluene	606-20-2	1	ND	ug/L	U	3.8	5
Di-n-octyl phthalate	117-84-0	1	ND	ug/L	U	2.7	5
Diphenylamine	122-39-4	1	ND	ug/L	U	4.2	10
bis(2-ethylhexyl) phthalate	117-81-7	1	6	ug/L		3.6	5
Ethyl methanesulfonate	62-50-0	1	ND	ug/L	U	2.6	10
Fluoranthene	206-44-0	1	ND	ug/L	U	4	5
Fluorene	86-73-7	1	ND	ug/L	U	3.3	5
Hexachlorobenzene	118-74-1	1	ND	ug/L	U	2.5	5
Hexachlorobutadiene	87-68-3	1	ND	ug/L	U	3	5
Hexachlorocyclopentadiene	77-47-4	1	ND	ug/L	U	2.2	5
Hexachloroethane	67-72-1	1	ND	ug/L	U	4.7	5
Hexachloropropene	1888-71-7	1	ND	ug/L	U	5	5
Hexachlorophene	70-30-4	1	ND	ug/L	U	100	100
Indeno(1,2,3-cd)pyrene	193-39-5	1	ND	ug/L	U	3.1	5
Isophorone	78-59-1	1	ND	ug/L	U	3	5
Isosafrole	120-58-1	1	ND	ug/L	U	20	20
Methapyrilene	91-80-5	1	ND	ug/L	U	10	10
3-Methylcholanthrene	56-49-5	1	ND	ug/L	U	2.7	5
Methyl methanesulfonate	66-27-3	1	ND	ug/L	U	2.9	5
2-Methylnaphthalene	91-57-6	1	ND	ug/L	U	2.8	5
2-Methylphenol	95-48-7	1	ND	ug/L	U	1.9	5
3&4-Methylphenol	NA	1	ND	ug/L	U	2	5

Review By: Bob Cathel

Report Approved By: Ty Garber

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- Dil - Sample Dilution Factor
- ND - Sample Concentration Not Detected above MDL
- MDL - Method Detection Limit
- RL - Method Reporting Limit

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
 Project Number: Not Reported
 Sample ID: WG6064-1
 Site / Project ID: Not Reported
 Run ID: R3549
 Collection Date: Not Reported
 Received Date: 02-APR-96
 Report Date: 17-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
Naphthalene	91-20-3	1	ND	ug/L	U	2.4	5
1,4-Naphthoquinone	130-15-4	1	ND	ug/L	U	10	10
1-Naphthylamine	134-32-7	1	ND	ug/L	U	3.8	5
2-Naphthylamine	91-59-8	1	ND	ug/L	U	3.9	5
2-Nitroaniline	88-74-4	1	ND	ug/L	U	3.7	25
3-Nitroaniline	99-09-2	1	ND	ug/L	U	3.4	25
4-Nitroaniline	100-01-6	1	ND	ug/L	U	6.4	25
Nitrobenzene	98-95-3	1	ND	ug/L	U	4.7	5
2-Nitrophenol	88-75-5	1	ND	ug/L	U	4.3	5
4-Nitrophenol	100-02-7	1	ND	ug/L	U	8.4	25
N-Nitroso-di-n-butylamine	924-16-3	1	ND	ug/L	U	3	5
N-Nitrosodiethylamine	55-18-5	1	ND	ug/L	U	10	10
N-Nitrosodimethylamine	62-75-9	1	ND	ug/L	U	2	10
N-Nitrosodiphenylamine	86-30-6	1	ND	ug/L	U	5.2	25
N-Nitrosodipropylamine	621-64-7	1	ND	ug/L	U	3.1	5
N-Nitrosomethylethylamine	10595-95-6	1	ND	ug/L	U	10	10
N-Nitrosomorpholine	59-89-2	1	ND	ug/L	U	10	10
N-Nitrosopiperidine	100-75-4	1	ND	ug/L	U	3.4	10
N-Nitrosopyrrolidine	930-55-2	1	ND	ug/L	U	10	10
5-Nitro-o-toluidine	99-55-8	1	ND	ug/L	U	10	10
4-Nitroquinoline-n-oxide	56-57-5	1	ND	ug/L	U	100	100
Pentachlorobenzene	608-93-5	1	ND	ug/L	U	3.9	5
Pentachloroethane	76-01-7	1	ND	ug/L	U	10	10
Pentachloronitrobenzene	82-68-8	1	ND	ug/L	U	4.7	10
Pentachlorophenol	87-86-5	1	ND	ug/L	U	5.7	25
Phenacetin	62-44-2	1	ND	ug/L	U	5.9	25
Phenanthrene	85-01-8	1	ND	ug/L	U	2.5	5
Phenol	108-95-2	1	ND	ug/L	U	3.4	5
p-Phenylenediamine	106-50-3	1	ND	ug/L	U	100	100
2-Picoline	109-06-8	1	ND	ug/L	U	3.6	5
Pronamide	23950-58-5	1	ND	ug/L	U	3.8	5
Pyrene	129-00-0	1	ND	ug/L	U	3.5	5
Pyridine	110-86-1	1	ND	ug/L	U	10	10
Safrole	94-59-7	1	ND	ug/L	U	10	10
1,2,4,5-Tetrachlorobenzene	95-94-3	1	ND	ug/L	U	5.1	10
2,3,4,6-Tetrachlorophenol	58-90-2	1	ND	ug/L	U	4.5	5

Review By: Bob Cathel

Report Approved By: Ty Garber

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Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
Project Number: Not Reported
Sample ID: WG6064-1
Site / Project ID: Not Reported
Run ID: R3549
Collection Date: Not Reported
Received Date: 02-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
o-Toluidine	95-53-4	1	ND	ug/L	U	10	10
1,2,4-Trichlorobenzene	120-82-1	1	ND	ug/L	U	3.2	5
2,4,5-Trichlorophenol	95-95-4	1	ND	ug/L	U	5.6	25
2,4,6-Trichlorophenol	88-06-2	1	ND	ug/L	U	4.4	5
1,3,5-Trinitrobenzene	99-35-4	1	ND	ug/L	U	10	10
Nitrobenzene-d5	SURROGATE	1	78	%			
2-Fluorobiphenyl	SURROGATE	1	84	%			
p-Terphenyl-d14	SURROGATE	1	98	%			
Phenol-d6	SURROGATE	1	77	%			
2-Fluorophenol	SURROGATE	1	71	%			
2,4,6-Tribromophenol	SURROGATE	1	54	%			

Review By: Bob Cathel

Report Approved By: Ty Garber

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Dil - Sample Dilution Factor
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Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
 Project Number: Not Reported
 Sample ID: WG6064-1
 Site / Project ID: Not Reported
 Run ID: R3549
 Collection Date: Not Reported
 Received Date: 02-APR-96
 Report Date: 17-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 3520/8270							
Preparation Date: 02-APR-96							
Analysis Date: 11-APR-96 20:10							
Workgroup Number: WG6064							
Acenaphthene	83-32-9	1	ND	ug/L	U	4.2	5
Acenaphthylene	208-96-8	1	ND	ug/L	U	3.5	5
Anthracene	120-12-7	1	ND	ug/L	U	2.6	5
Benzo(a)anthracene	56-55-3	1	ND	ug/L	U	2.8	5
Benzo(a)pyrene	50-32-8	1	ND	ug/L	U	3.5	5
Benzo(b)fluoranthene	205-99-2	1	ND	ug/L	U	2.6	5
Benzo(g,h,i)perylene	191-24-2	1	ND	ug/L	U	3.1	5
Benzo(k)fluoranthene	207-08-9	1	ND	ug/L	U	3.9	5
Chrysene	218-01-9	1	ND	ug/L	U	4.2	5
Dibenz(a,h)anthracene	53-70-3	1	ND	ug/L	U	3.4	5
Dibenz(a,j)acridine	224-42-0	1	ND	ug/L	U	5.3	25
Dibenzofuran	132-64-9	1	ND	ug/L	U	4	5
Fluoranthene	206-44-0	1	ND	ug/L	U	4	5
Fluorene	86-73-7	1	ND	ug/L	U	3.3	5
Indeno(1,2,3-cd)pyrene	193-39-5	1	ND	ug/L	U	3.1	5
2-Methylnaphthalene	91-57-6	1	ND	ug/L	U	2.8	5
Naphthalene	91-20-3	1	ND	ug/L	U	2.4	5
Phenanthrene	85-01-8	1	ND	ug/L	U	2.5	5
Pyrene	129-00-0	1	ND	ug/L	U	3.5	5
Nitrobenzene-d5	SURROGATE	1	78	%			
2-Fluorobiphenyl	SURROGATE	1	84	%			
p-Terphenyl-d14	SURROGATE	1	98	%			

Review By: Bob Cathel

Report Approved By: Ty Garber

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- RL - Method Reporting Limit

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
 Project Number: Not Reported
 Sample ID: WG6093-1
 Site / Project ID: Not Reported
 Run ID: R3505
 Collection Date: Not Reported
 Received Date: 04-APR-96
 Report Date: 11-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Methods 3520/8080							
Preparation Date: 04-APR-96							
Analysis Date: 10-APR-96 19:04							
Workgroup Number: WG6093							
Aldrin	309-00-2	1	ND	ug/L	U	.05	.05
alpha-BHC	319-84-6	1	ND	ug/L	U	.018	.05
beta-BHC	319-85-7	1	ND	ug/L	U	.015	.05
delta-BHC	319-86-8	1	ND	ug/L	U	.011	.05
gamma-BHC (Lindane)	58-89-9	1	ND	ug/L	U	.013	.05
alpha-Chlordane	5103-71-9	1	ND	ug/L	J	.01	.05
gamma-Chlordane	5103-74-2	1	ND	ug/L	J	.01	.05
Chlorobenzilate	510-15-6	1	ND	ug/L	U	.05	.1
4,4'-DDD	72-54-8	1	ND	ug/L	U	.078	.1
4,4'-DDE	72-55-9	1	ND	ug/L	U	.017	.1
4,4'-DDT	50-29-3	1	ND	ug/L	U	.031	.1
Diallate	60-57-1	1	ND	ug/L	U	.5	1
Dieldrin	60-57-1	1	ND	ug/L	U	.012	.1
Endosulfan I	959-98-8	1	ND	ug/L	U	.015	.05
Endosulfan II	33213-65-9	1	ND	ug/L	U	.013	.1
Endosulfan sulfate	1031-07-8	1	ND	ug/L	U	.018	.1
Endrin	72-20-8	1	ND	ug/L	U	.013	.1
Endrin aldehyde	7421-93-4	1	ND	ug/L	U	.081	.1
Heptachlor	76-44-8	1	ND	ug/L	U	.036	.05
Heptachlor epoxide	1024-57-3	1	ND	ug/L	U	.014	.05
Isodrin	465-73-6	1	ND	ug/L	U	.05	.1
Kepone	143-50-0	1	ND	ug/L	U	.5	1
Methoxychlor	72-43-5	1	ND	ug/L	U	.049	.5
Toxaphene	8001-35-2	1	ND	ug/L	U	.24	2.4
Aroclor-1016	12674-11-2	1	ND	ug/L	U	.18	.5
Aroclor-1221	11104-28-2	1	ND	ug/L	U	.11	.5
Aroclor-1232	11141-16-5	1	ND	ug/L	U	.11	.5
Aroclor-1242	53469-21-9	1	ND	ug/L	U	.11	.5
Aroclor-1248	12672-29-6	1	ND	ug/L	U	.11	.5
Aroclor-1254	11097-69-1	1	ND	ug/L	U	.11	1
Aroclor-1260	11096-82-5	1	ND	ug/L	U	.11	1
Tetrachloro-m-xylene	SURROGATE	1	90	%			

Review By: Bob Cathel

Report Approved By: Ty Garber

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- ND - Sample Concentration Not Detected above MDL
- MDL - Method Detection Limit
- RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
Project Number: Not Reported
Sample ID: WG6093-1
Site / Project ID: Not Reported
Run ID: R3505
Collection Date: Not Reported
Received Date: 04-APR-96
Report Date: 11-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
Decachlorobiphenyl	SURROGATE	1	39	%			

Review By: Bob Cathel

Report Approved By: Ty Garber

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- ND - Sample Concentration Not Detected above MDL
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- RL - Method Reporting Limit

Form 1 - Data Summary Report
 Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
 Project Number: Not Reported
 Sample ID: WG6124-1
 Site / Project ID: Not Reported
 Run ID: R3498
 Collection Date: Not Reported
 Received Date: 09-APR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Met. 6010 (APIX)							
Preparation Date: 09-APR-96							
Analysis Date: 11-APR-96 12:11							
Workgroup Number: WG6124							
Barium	7440-39-3	1	.00038	mg/L	J	.00026	.02
Beryllium	7440-41-7	1	ND	mg/L	U	.00016	.004
Cadmium	7440-43-9	1	ND	mg/L	U	.0019	.005
Chromium	7440-47-3	1	ND	mg/L	U	.0045	.01
Cobalt	7440-48-4	1	ND	mg/L	U	.0053	.05
Copper	7440-50-8	1	ND	mg/L	U	.0073	.01
Nickel	7440-02-0	1	ND	mg/L	U	.0056	.02
Silver	7440-22-4	1	ND	mg/L	U	.0019	.01
Vanadium	7440-62-2	1	ND	mg/L	U	.0017	.05
Zinc	7440-66-6	1	.0097	mg/L	J	.0052	.02

Review By: Bob Cathel

Report Approved By: Ty Garber

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- Dil - Sample Dilution Factor
- ND - Sample Concentration Not Detected above MDL
- MDL - Method Detection Limit
- RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
Project Number: Not Reported
Sample ID: WG6173-1
Site / Project ID: Not Reported
Run ID: R3498
Collection Date: Not Reported
Received Date: 12-APR-96
Report Date: 12-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Met. 6010 (APIX)							
Preparation Date: 10-APR-96							
Analysis Date: 12-APR-96 09:28							
Workgroup Number: WG6173							
Tin	7440-31-5	1	ND	mg/L	U	.054	.1

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
Project Number: Not Reported
Sample ID: WG6131-1
Site / Project ID: Not Reported
Run ID: R3506
Collection Date: Not Reported
Received Date: 09-APR-96
Report Date: 11-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 7041 Analysis Date: 11-APR-96 07:51 Workgroup Number: WG6131 Antimony	7440-36-0	1	ND	mg/L	U	.00068	.006

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
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- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
Project Number: Not Reported
Sample ID: WG6128-1
Site / Project ID: Not Reported
Run ID: R3494
Collection Date: Not Reported
Received Date: 09-APR-96
Report Date: 11-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 7060							
Analysis Date: 10-APR-96 10:27							
Workgroup Number: WG6128							
Arsenic	7440-38-2	1	ND	mg/L	U	.00073	.005

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
Project Number: Not Reported
Sample ID: WG6126-1
Site / Project ID: Not Reported
Run ID: R3493
Collection Date: Not Reported
Received Date: 09-APR-96
Report Date: 11-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 7421							
Analysis Date: 10-APR-96 07:30							
Workgroup Number: WG6126							
Lead	7439-92-1	1	ND	mg/L	U	.00089	.003

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
Project Number: Not Reported
Sample ID: WG6127-1
Site / Project ID: Not Reported
Run ID: R3495
Collection Date: Not Reported
Received Date: 09-APR-96
Report Date: 11-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 7740							
Analysis Date: 10-APR-96 09:51							
Workgroup Number: WG6127							
Selenium	7782-49-2	1	ND	mg/L	U	.000735	.005

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
Project Number: Not Reported
Sample ID: WG6129-1
Site / Project ID: Not Reported
Run ID: R3492
Collection Date: Not Reported
Received Date: 09-APR-96
Report Date: 11-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 7841							
Analysis Date: 10-APR-96 08:20							
Workgroup Number: WG6129							
Thallium	7440-26-0	1	ND	mg/L	U	.00079	.005

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
Project Number: Not Reported
Sample ID: WG6180-1
Site / Project ID: Not Reported
Run ID: R3521
Collection Date: Not Reported
Received Date: 12-APR-96
Report Date: 15-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 7470 Analysis Date: 12-APR-96 14:37 Workgroup Number: WG6180 Mercury	7439-97-6	1	ND	mg/L	U	.00005	.0002

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
Project Number: Not Reported
Sample ID: WG6094-1
Site / Project ID: Not Reported
Run ID: R3451
Collection Date: Not Reported
Received Date: 05-APR-96
Report Date: 05-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 9012							
Analysis Date: 03-APR-96 11:30							
Workgroup Number: WG6094							
Cyanide (tot.)	N/A	1	ND	mg/L	U	.005	.02
Cyanide (amen.)	N/A	1	ND	mg/L	U	.005	.02

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
Project Number: Not Reported
Sample ID: WG6048-1
Site / Project ID: Not Reported
Run ID: R3417
Collection Date: Not Reported
Received Date: 01-APR-96
Report Date: 01-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW-846, Method 9030							
Preparation Date: 01-APR-96							
Analysis Date: 01-APR-96 08:42							
Workgroup Number: WG6048							
Sulfide	N/A	1	ND	mg/L	U	.48	1

Review By: Bob Cathel

Report Approved By: Ty Garber

- Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
Project Number: Not Reported
Sample ID: WG6046-1
Site / Project ID: Not Reported
Run ID: R3416
Collection Date: Not Reported
Received Date: 01-APR-96
Report Date: 01-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW-846, Method 9060 Analysis Date: 01-APR-96 09:30 Workgroup Number: WG6046 Total Organic Carbon	N/A	1	0.4	mg/L	J	.15	1

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
Project Number: Not Reported
Sample ID: WG6122-1
Site / Project ID: Not Reported
Run ID: R3470
Collection Date: Not Reported
Received Date: 08-APR-96
Report Date: 09-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW-846, Method 9020							
Analysis Date: 08-APR-96 08:57							
Workgroup Number: WG6122							
Total Organic Halides	N/A	1	ND	mg/L	J	.001	.005

Review By: Bob Cathel

Report Approved By: Ty Garber

- Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
- Dil - Sample Dilution Factor
- ND - Sample Concentration Not Detected above MDL
- MDL - Method Detection Limit
- RL - Method Reporting Limit

DUPLICATE CONTROL SAMPLE REPORT
Special Services - Low Resolution Mass Spectrometry

Analyte	Spiked	Concentration		AVG	Accuracy		Precision		
		DCS1	Measured DCS2		DCS	Average(%) Limits	(RPD)	DCS Limit	
Category: TCDD-A									
Matrix: AQUEOUS									
QC Lot: 01 APR 96-A									
Concentration Units: ng									
2,3,7,8-TCDD	10.0	9.88	9.74	9.81	98	60-140	1.4	50.0	
13C-2,3,7,8-TCDD	25	18	19	18	74	40-120	3.8	0.0	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Laboratory Control Spike / Laboratory Control Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Sample Id: /usr/users/seed2/target/A5185
 Work Group Id: WG6107-2
 Run Id: R3503
 GALP Record Id: Not Reported
 Preparation Date: 05-APR-96
 Analysis Date: 05-APR-96
 Report Date: 11-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	LCS Add	LCSD Add	Units	LCS %REC	LCSD %REC	LCS/LCSD RPD	QUAL (1)
SWB46 Met. 8260 (APIX)											
Preparation Date: 05-APR-96											
Analysis Date: 05-APR-96 15:15											
Workgroup Number: WG6107											
Benzene	71-43-2	76	127	13	50	50	ug/L	98	80	20	--@
Chlorobenzene	108-90-7	75	130	13	50	50	ug/L	90	78	14	--@
1,1-Dichloroethene	75-35-4	61	145	14	50	50	ug/L	104	86	19	--@
Toluene	108-88-3	76	125	13	50	50	ug/L	96	82	16	--@
Trichloroethene	79-01-6	71	120	14	50	50	ug/L	92	78	16	--@

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

(1) QUAL - * = LCS Outside Control Limits; # = LCSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
 "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
 "LCS,SD Add" - The conc. of analyte added to the LCS or LCSD sample.
 "LCS %REC" - Laboratory Control Sample Percent Recovery
 "LCSD %REC" - Laboratory Control Sample Duplicate Percent Recovery
 "LCS/LCSD RPD" - Laboratory Control Sample / Laboratory Control Sample Duplicate Relative Percent Difference
 NR - Not Reported

Laboratory Control Spike / Laboratory Control Spike Duplicate QC Report
 Prepared By: Hydrologic Laboratories, Inc.

Sample Id: /usr/users/seed2/target/D5684
 Work Group Id: WG6064-2
 Run Id: R3549
 GALP Record Id: Not Reported
 Preparation Date: 02-APR-96
 Analysis Date: 11-APR-96
 Report Date: 17-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	LCS Add	LCSD Add	Units	LCS %REC	LCSD %REC	LCS/LCSD RPD	QUAL (1)
SW846 Met. 8270 (APIX)											
Preparation Date: 02-APR-96											
Analysis Date: 11-APR-96 20:55											
Workgroup Number: WG6064											
Acenaphthene	83-32-9	47	118	31	50	50	ug/L	82	64	25	---
4-Chloro-3-methylphenol	59-50-7	23	97	23	100	100	ug/L	74	57	26	--@
2-Chlorophenol	95-57-8	27	123	27	100	100	ug/L	74	34	74	--@
1,4-Dichlorobenzene	106-46-7	36	97	28	50	50	ug/L	74	24	102	-#@
2,4-Dinitrotoluene	121-14-2	39	96	38	50	50	ug/L	56	52	7	---
4-Nitrophenol	100-02-7	10	80	50	100	100	ug/L	44	50	13	---
N-Nitrosodipropylamine	621-64-7	41	116	38	50	50	ug/L	84	64	27	---
Phenol	108-95-2	12	89	42	100	100	ug/L	68	38	57	--@
Pyrene	129-00-0	52	115	31	50	50	ug/L	80	78	3	---
1,2,4-Trichlorobenzene	120-82-1	44	98	28	50	50	ug/L	76	36	71	-#@

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

(1) QUAL - * = LCS Outside Control Limits; # = LCSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
 "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
 "LCS,SD Add" - The conc. of analyte added to the LCS or LCSD sample.
 "LCS %REC" - Laboratory Control Sample Percent Recovery
 "LCSD %REC" - Laboratory Control Sample Duplicate Percent Recovery
 "LCS/LCSD RPD" - Laboratory Control Sample / Laboratory Control Sample Duplicate Relative Percent Difference
 NR - Not Reported

Laboratory Control Spike / Laboratory Control Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Sample Id: /usr/users/seed2/target/D5684
 Work Group Id: WG6064-2
 Run Id: R3549
 GALP Record Id: Not Reported
 Preparation Date: 02-APR-96
 Analysis Date: 11-APR-96
 Report Date: 17-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	LCS Add	LCSD Add	Units	LCS %REC	LCSD %REC	LCS/LCSD RPD	QUAL (1)
SW846 Method 3520/8270											
Preparation Date: 02-APR-96											
Analysis Date: 11-APR-96 20:55											
Workgroup Number: WG6064											
Acenaphthene	83-32-9	47	118	31	50	50	ug/L	82	64	25	---
Pyrene	129-00-0	52	115	31	50	50	ug/L	80	78	3	---

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

(1) QUAL - * = LCS Outside Control Limits; # = LCSD Outside Control Limits; @ = RPD Outside Control Limits; --- = Value Within Control Limits
 "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
 "LCS,SD Add" - The conc. of analyte added to the LCS or LCSD sample.
 "LCS %REC" - Laboratory Control Sample Percent Recovery
 "LCSD %REC" - Laboratory Control Sample Duplicate Percent Recovery
 "LCS/LCSD RPD" - Laboratory Control Sample / Laboratory Control Sample Duplicate Relative Percent Difference
 NR - Not Reported

Single Laboratory Control Spike QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Sample Id: SLCS
 Work Group Id: WG6093-2
 Run Id: R3505
 GALP Record Id: Not Reported
 Preparation Date: 04-APR-96
 Analysis Date: 10-APR-96
 Report Date: 08-MAY-96

Analyte	CAS No.	Sample Value	Units	Spike Conc.	Low Limit	High Limit	SLCS %REC	QUAL (1)
SW846 Methods 3520/8080								
Preparation Date: 04-APR-96								
Analysis Date: 10-APR-96 19:45								
Workgroup Number: WG6093								
Aldrin	309-00-2	.0197	ug/ml	.02	40	120	99	-
gamma-BHC (Lindane)	58-89-9	.0189	ug/ml	.02	56	123	95	-
4,4'-DDT	50-29-3	.0487	ug/ml	.05	38	127	97	-
Dieldrin	60-57-1	.0521	ug/ml	.05	52	126	104	-
Endrin	72-20-8	.04	ug/ml	.05	56	121	80	-
Heptachlor	76-44-8	.0211	ug/ml	.02	40	131	106	-

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

(1) QUAL - * = LCS Outside Control Limits; '-' = Value Within Control Limits
 "Limits" - The "Limits" reported above (Low and High) are in units of percent (%).
 "LCS Add" - The conc. of analyte added to the SLCS sample.
 "SLCS %REC" - Laboratory Control Sample Percent Recovery
 NR - Not Reported

Laboratory Control Spike / Laboratory Control Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Sample Id: /usr/users/seed2/pe3000/960411r3
 Work Group Id: WG6124-2
 Run Id: R3498
 GALP Record Id: Not Reported
 Preparation Date: 09-APR-96
 Analysis Date: 11-APR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	LCS Add	LCSD Add	Units	LCS %REC	LCSD %REC	LCS/LCSD RPD	QUAL (1)
SW846 Met. 6010 (APIX)											
Preparation Date: 09-APR-96											
Analysis Date: 11-APR-96 12:14											
Workgroup Number: WG6124											
Barium	7440-39-3	80	120	20	2	2	mg/L	101	103	2	---
Beryllium	7440-41-7	80	120	20	.05	.05	mg/L	100	102	2	---
Cadmium	7440-43-9	80	120	20	.05	.05	mg/L	99	100	1	---
Chromium	7440-47-3	80	120	20	.2	.2	mg/L	109	110	1	---
Cobalt	7440-48-4	80	120	20	.5	.5	mg/L	102	103	1	---
Copper	7440-50-8	80	120	20	.25	.25	mg/L	101	102	1	---
Nickel	7440-02-0	80	120	20	.5	.5	mg/L	104	105	1	---
Silver	7440-22-4	80	120	20	.05	.05	mg/L	92	95	3	---
Vanadium	7440-62-2	80	120	20	.5	.5	mg/L	103	105	2	---
Zinc	7440-66-6	80	120	20	.5	.5	mg/L	103	107	4	---

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

(1) QUAL - * = LCS Outside Control Limits; # = LCSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
 "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
 "LCS,SD Add" - The conc. of analyte added to the LCS or LCSD sample.
 "LCS %REC" - Laboratory Control Sample Percent Recovery
 "LCSD %REC" - Laboratory Control Sample Duplicate Percent Recovery
 "LCS/LCSD RPD" - Laboratory Control Sample / Laboratory Control Sample Duplicate Relative Percent Difference
 NR - Not Reported

Laboratory Control Spike / Laboratory Control Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Sample Id: LCS/LCSD Pair
 Work Group Id: WG6173-2
 Run Id: R3498
 GALP Record Id: Not Reported
 Preparation Date: 10-APR-96
 Analysis Date: 12-APR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	LCS Add	LCSD Add	Units	LCS %REC	LCSD %REC	LCS/LCSD RPD	QUAL (1)
SWB46 Met. 6010 (APIX) Preparation Date: 10-APR-96 Analysis Date: 12-APR-96 09:31 Workgroup Number: WG6173											
Tin	7440-31-5	80	120	20	2	2	mg/L	105	106	1	---

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

(1) QUAL - * = LCS Outside Control Limits; # = LCSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
 "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
 "LCS,SD Add" - The conc. of analyte added to the LCS or LCSD sample.
 "LCS %REC" - Laboratory Control Sample Percent Recovery
 "LCSD %REC" - Laboratory Control Sample Duplicate Percent Recovery
 "LCS/LCSD RPD" - Laboratory Control Sample / Laboratory Control Sample Duplicate Relative Percent Difference
 NR - Not Reported

Laboratory Control Spike / Laboratory Control Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Sample Id: LCS/LCSD Pair
 Work Group Id: WG6131-2
 Run Id: R3506
 GALP Record Id: Not Reported
 Preparation Date: 10-APR-96
 Analysis Date: 11-APR-96
 Report Date: 11-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	LCS Add	LCSD Add	Units	LCS %REC	LCSD %REC	LCS/LCSD RPD	QUAL (1)
SW846 Method 7041 Analysis Date: 11-APR-96 07:56 Workgroup Number: WG6131 Antimony	7440-36-0	75	125	20	.02	.02	mg/L	101	95	6	---

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

(1) QUAL - * = LCS Outside Control Limits; # = LCSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
 "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
 "LCS,SD Add" - The conc. of analyte added to the LCS or LCSD sample.
 "LCS %REC" - Laboratory Control Sample Percent Recovery
 "LCSD %REC" - Laboratory Control Sample Duplicate Percent Recovery
 "LCS/LCSD RPD" - Laboratory Control Sample / Laboratory Control Sample Duplicate Relative Percent Difference
 NR - Not Reported

Laboratory Control Spike / Laboratory Control Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Sample Id: LCS/LCSD Pair
 Work Group Id: WG6128-2
 Run Id: R3494
 GALP Record Id: Not Reported
 Preparation Date: 09-APR-96
 Analysis Date: 10-APR-96
 Report Date: 11-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	LCS Add	LCSD Add	Units	LCS %REC	LCSD %REC	LCS/LCSD RPD	QUAL (1)
SW846 Method 7060 Analysis Date: 10-APR-96 10:31 Workgroup Number: WG6128 Arsenic	7440-38-2	75	125	20	.04	.04	mg/L	109	110	1	---

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

(1) QUAL - * = LCS Outside Control Limits; # = LCSD Outside Control Limits; @ = RPD Outside Control Limits; --- = Value Within Control Limits
 "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
 "LCS,SD Add" - The conc. of analyte added to the LCS or LCSD sample.
 "LCS %REC" - Laboratory Control Sample Percent Recovery
 "LCSD %REC" - Laboratory Control Sample Duplicate Percent Recovery
 "LCS/LCSD RPD" - Laboratory Control Sample / Laboratory Control Sample Duplicate Relative Percent Difference
 NR - Not Reported

Laboratory Control Spike / Laboratory Control Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Sample Id: LCS/LCSD Pair
 Work Group Id: WG6126-2
 Run Id: R3493
 GALP Record Id: Not Reported
 Preparation Date: 09-APR-96
 Analysis Date: 10-APR-96
 Report Date: 11-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	LCS Add	LCSD Add	Units	LCS %REC	LCSD %REC	LCS/LCSD RPD	QUAL (1)
SW846 Method 7421 Analysis Date: 10-APR-96 07:35 Workgroup Number: WG6126 Lead	7439-92-1	75	125	20	.02	.02	mg/L	111	113	2	---

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

(1) QUAL - * = LCS Outside Control Limits; # = LCSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
 "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
 "LCS,SD Add" - The conc. of analyte added to the LCS or LCSD sample.
 "LCS %REC" - Laboratory Control Sample Percent Recovery
 "LCSD %REC" - Laboratory Control Sample Duplicate Percent Recovery
 "LCS/LCSD RPD" - Laboratory Control Sample / Laboratory Control Sample Duplicate Relative Percent Difference
 NR - Not Reported

Laboratory Control Spike / Laboratory Control Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Sample Id: LCS/LCSD Pair
 Work Group Id: WG6127-2
 Run Id: R3495
 GALP Record Id: Not Reported
 Preparation Date: 09-APR-96
 Analysis Date: 10-APR-96
 Report Date: 08-MAY-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	LCS Add	LCSD Add	Units	LCS %REC	LCSD %REC	LCS/LCSD RPD	QUAL (1)
SW846 Method 7740											
Analysis Date: 10-APR-96 09:56											
Workgroup Number: WG6127											
Selenium	7782-49-2	75	125	20	.01	.01	mg/L	136	133	2	*#--

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

(1) QUAL - * = LCS Outside Control Limits; # = LCSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
 "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
 "LCS,SD Add" - The conc. of analyte added to the LCS or LCSD sample.
 "LCS %REC" - Laboratory Control Sample Percent Recovery
 "LCSD %REC" - Laboratory Control Sample Duplicate Percent Recovery
 "LCS/LCSD RPD" - Laboratory Control Sample / Laboratory Control Sample Duplicate Relative Percent Difference
 NR - Not Reported

Laboratory Control Spike / Laboratory Control Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Sample Id: LCS/LCSD Pair
 Work Group Id: WG6129-2
 Run Id: R3492
 GALP Record Id: Not Reported
 Preparation Date: 09-APR-96
 Analysis Date: 10-APR-96
 Report Date: 11-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	LCS Add	LCSD Add	Units	LCS %REC	LCSD %REC	LCS/LCSD RPD	QUAL (1)
SW846 Method 7841 Analysis Date: 10-APR-96 08:25 Workgroup Number: WG6129 Thallium	7440-26-0	75	125	20	.05	.05	mg/L	101	103	2	---

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

(1) QUAL - * = LCS Outside Control Limits; # = LCSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
 "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
 "LCS,SD Add" - The conc. of analyte added to the LCS or LCSD sample.
 "LCS %REC" - Laboratory Control Sample Percent Recovery
 "LCSD %REC" - Laboratory Control Sample Duplicate Percent Recovery
 "LCS/LCSD RPD" - Laboratory Control Sample / Laboratory Control Sample Duplicate Relative Percent Difference
 NR - Not Reported

Laboratory Control Spike / Laboratory Control Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Sample Id: LCS/LCSD Pair
 Work Group Id: WG6180-2
 Run Id: R3521
 GALP Record Id: Not Reported
 Preparation Date: 12-APR-96
 Analysis Date: 12-APR-96
 Report Date: 15-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	LCS Add	LCSD Add	Units	LCS %REC	LCSD %REC	LCS/LCSD RPD	QUAL (1)
SW846 Method 7470											
Analysis Date: 12-APR-96 14:40											
Workgroup Number: WG6180											
Mercury	7439-97-6	80	120	20	.002	.002	mg/L	95	95	0	---

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

(1) QUAL - * = LCS Outside Control Limits; # = LCSD Outside Control Limits; @ = RPD Outside Control Limits; ' ' = Value Within Control Limits
 "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
 "LCS,SD Add" - The conc. of analyte added to the LCS or LCSD sample.
 "LCS %REC" - Laboratory Control Sample Percent Recovery
 "LCSD %REC" - Laboratory Control Sample Duplicate Percent Recovery
 "LCS/LCSD RPD" - Laboratory Control Sample / Laboratory Control Sample Duplicate Relative Percent Difference
 NR - Not Reported

Laboratory Control Spike / Laboratory Control Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Sample Id: LCS/LCSD Pair
 Work Group Id: WG6094-2
 Run Id: R3451
 GALP Record Id: Not Reported
 Preparation Date: 02-APR-96
 Analysis Date: 03-APR-96
 Report Date: 05-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	LCS Add	LCSD Add	Units	LCS %REC	LCSD %REC	LCS/LCSD RPD	QUAL (1)
SWB46 Method 9012											
Analysis Date: 03-APR-96 11:30											
Workgroup Number: WG6094											
Cyanide (amen.)	N/A	85	115	20	.25	.25	mg/L	102	102	0	---

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

(1) QUAL - * = LCS Outside Control Limits; # = LCSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
 "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
 "LCS,SD Add" - The conc. of analyte added to the LCS or LCSD sample.
 "LCS %REC" - Laboratory Control Sample Percent Recovery
 "LCSD %REC" - Laboratory Control Sample Duplicate Percent Recovery
 "LCS/LCSD RPD" - Laboratory Control Sample / Laboratory Control Sample Duplicate Relative Percent Difference
 NR - Not Reported

Laboratory Control Spike / Laboratory Control Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Sample Id: LCS/LCSD Pair
 Work Group Id: WG6048-2
 Run Id: R3417
 GALP Record Id: Not Reported
 Preparation Date: 01-APR-96
 Analysis Date: 01-APR-96
 Report Date: 01-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	LCS Add	LCSD Add	Units	LCS %REC	LCSD %REC	LCS/LCSD RPD	QUAL (1)
SW-846, Method 9030											
Preparation Date: 01-APR-96											
Analysis Date: 01-APR-96 08:42											
Workgroup Number: WG6048											
Sulfide	N/A	80	120	20	1000	1000	mg/L	90	88	2	---

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

(1) QUAL - * = LCS Outside Control Limits; # = LCSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
 "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
 "LCS,SD Add" - The conc. of analyte added to the LCS or LCSD sample.
 "LCS %REC" - Laboratory Control Sample Percent Recovery
 "LCSD %REC" - Laboratory Control Sample Duplicate Percent Recovery
 "LCS/LCSD RPD" - Laboratory Control Sample / Laboratory Control Sample Duplicate Relative Percent Difference
 NR - Not Reported

Laboratory Control Spike / Laboratory Control Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Sample Id: LCS/LCSD Pair
 Work Group Id: WG6046-2
 Run Id: R3416
 GALP Record Id: Not Reported
 Preparation Date: 01-APR-96
 Analysis Date: 01-APR-96
 Report Date: 01-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	LCS Add	LCSD Add	Units	LCS %REC	LCSD %REC	LCS/LCSD RPD	QUAL (1)
SW-846, Method 9060 Analysis Date: 01-APR-96 09:30 Workgroup Number: WG6046 Total Organic Carbon	N/A	80	120	20	43.2	43.2	mg/L	96	95	1	---

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

(1) QUAL - * = LCS Outside Control Limits; # = LCSD Outside Control Limits; @ = RPD Outside Control Limits; --- = Value Within Control Limits
 "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
 "LCS,SD Add" - The conc. of analyte added to the LCS or LCSD sample.
 "LCS %REC" - Laboratory Control Sample Percent Recovery
 "LCSD %REC" - Laboratory Control Sample Duplicate Percent Recovery
 "LCS/LCSD RPD" - Laboratory Control Sample / Laboratory Control Sample Duplicate Relative Percent Difference
 NR - Not Reported

Laboratory Control Spike / Laboratory Control Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Sample Id: LCS/LCSD Pair
 Work Group Id: WG6122-2
 Run Id: R3470
 GALP Record Id: Not Reported
 Preparation Date: 08-APR-96
 Analysis Date: 08-APR-96
 Report Date: 09-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	LCS Add	LCSD Add	Units	LCS %REC	LCSD %REC	LCS/LCSD RPD	QUAL (1)
SW-846, Method 9020											
Analysis Date: 08-APR-96 10:18											
Workgroup Number: WG6122											
Total Organic Halides	N/A	80	120	20	.205	.205	mg/L	91	90	1	---

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

(1) QUAL - * = LCS Outside Control Limits; # = LCSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
 "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
 "LCS,SD Add" - The conc. of analyte added to the LCS or LCSD sample.
 "LCS %REC" - Laboratory Control Sample Percent Recovery
 "LCSD %REC" - Laboratory Control Sample Duplicate Percent Recovery
 "LCS/LCSD RPD" - Laboratory Control Sample / Laboratory Control Sample Duplicate Relative Percent Difference
 NR - Not Reported

Matrix Spike / Matrix Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Client Id: /usr/users/seed2/target/A5189
 Work Group Id: WG6107-4
 Run Id: R3503
 GALP Record Id: Not Reported
 Preparation Date: 05-APR-96
 Analysis Date: 05-APR-96
 Report Date: 11-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	MS Add	MSD Add	Units	Sample Conc	MS %REC	MSD %REC	MS/MSD RPD	QUAL (1)
SW846 Met. 8260 (APIX)												
Preparation Date: 05-APR-96												
Analysis Date: 05-APR-96 17:59												
Workgroup Number: WG6107												
Benzene	71-43-2	76	127	13	50	50	ug/L	ND	88	86	2	----
Chlorobenzene	108-90-7	75	130	13	50	50	ug/L	ND	90	84	7	----
1,1-Dichloroethene	75-35-4	61	145	14	50	50	ug/L	ND	92	84	9	----
Toluene	108-88-3	76	125	13	50	50	ug/L	ND	86	80	7	----
Trichloroethene	79-01-6	71	120	14	50	50	ug/L	ND	84	78	7	----

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

-
- (1) QUAL - * = MS Outside Control Limits; # = MSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
 - (1) QUAL - ! = The sample concentration is greater than two times the MS or MSD spike conc. High analyte conc. will effect the MS/MSD recoveries.
 - "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
 - "MS, MSD Add" - The conc. of analyte added to the MS or MSD sample (soil results are corrected for % moisture).
 - "Sample Conc" - The units are the same as those reported on the Form 1 Data Summary Report (soil results are corrected for % moisture).
 - "MS %REC" - Matrix Spike Percent Recovery
 - "MSD %REC" - Matrix Spike Duplicate Percent Recovery
 - "MS/MSD RPD" - Matrix Spike / Matrix Spike Duplicate Relative Percent Difference
 - NR - Not Reported
 - ND - Analyte "Not Detected" above the method detection limit.

Matrix Spike / Matrix Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Client Id: L2646-2
 Work Group Id: WG6064-4
 Run Id: R3549
 GALP Record Id: Not Reported
 Preparation Date: 02-APR-96
 Analysis Date: 11-APR-96
 Report Date: 17-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	MS Add	MSD Add	Units	Sample Conc	MS %REC	MSD %REC	MS/MSD RPD	QUAL (1)
SW846 Met. 8270 (APIX)												
Preparation Date: 02-APR-96												
Analysis Date: 11-APR-96 22:25												
Workgroup Number: WG6064												
Acenaphthene	83-32-9	47	118	31	50	50	ug/L	ND	76	76	0	----
4-Chloro-3-methylphenol	59-50-7	23	97	42	100	100	ug/L	ND	73	70	4	----
2-Chlorophenol	95-57-8	27	123	40	100	100	ug/L	ND	64	59	8	----
1,4-Dichlorobenzene	106-46-7	36	97	28	50	50	ug/L	ND	62	58	7	----
2,4-Dinitrotoluene	121-14-2	39	96	38	50	50	ug/L	ND	62	58	7	----
4-Nitrophenol	100-02-7	10	80	50	100	100	ug/L	ND	56	52	7	----
N-Nitrosodipropylamine	621-64-7	41	116	38	50	50	ug/L	ND	82	72	13	----
Pentachlorophenol	87-86-5	14	103	50	100	100	ug/L	ND	49	38	25	----
Phenol	108-95-2	12	89	42	100	100	ug/L	ND	60	56	7	----
Pyrene	129-00-0	52	115	31	50	50	ug/L	ND	88	76	15	----
1,2,4-Trichlorobenzene	120-82-1	44	98	28	50	50	ug/L	ND	66	62	6	----

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

(1) QUAL - * = MS Outside Control Limits; # = MSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
 (1) QUAL - ! = The sample concentration is greater than two times the MS or MSD spike conc. High analyte conc. will effect the MS/MSD recoveries.
 "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
 "MS, MSD Add" - The conc. of analyte added to the MS or MSD sample (soil results are corrected for % moisture).
 "Sample Conc" - The units are the same as those reported on the Form 1 Data Summary Report (soil results are corrected for % moisture).
 "MS %REC" - Matrix Spike Percent Recovery
 "MSD %REC" - Matrix Spike Duplicate Percent Recovery
 "MS/MSD RPD" - Matrix Spike / Matrix Spike Duplicate Relative Percent Difference
 NR - Not Reported
 ND - Analyte "Not Detected" above the method detection limit.

Matrix Spike / Matrix Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Client Id: L2646-2
 Work Group Id: WG6064-4
 Run Id: R3549
 GALP Record Id: Not Reported
 Preparation Date: 02-APR-96
 Analysis Date: 11-APR-96
 Report Date: 17-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	MS Add	MSD Add	Units	Sample Conc	MS %REC	MSD %REC	MS/MSD RPD	QUAL (1)
SW846 Method 3520/8270												
Preparation Date: 02-APR-96												
Analysis Date: 11-APR-96 22:25												
Workgroup Number: WG6064												
Acenaphthene	83-32-9	47	118	31	50	50	ug/L	ND	76	76	0	----
Pyrene	129-00-0	52	115	31	50	50	ug/L	ND	88	76	15	----

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

-
- (1) QUAL - * = MS Outside Control Limits; # = MSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
 - (1) QUAL - ! = The sample concentration is greater than two times the MS or MSD spike conc. High analyte conc. will effect the MS/MSD recoveries.
 - "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
 - "MS, MSD Add" - The conc. of analyte added to the MS or MSD sample (soil results are corrected for % moisture).
 - "Sample Conc" - The units are the same as those reported on the Form 1 Data Summary Report (soil results are corrected for % moisture).
 - "MS %REC" - Matrix Spike Percent Recovery
 - "MSD %REC" - Matrix Spike Duplicate Percent Recovery
 - "MS/MSD RPD" - Matrix Spike / Matrix Spike Duplicate Relative Percent Difference
 - NR - Not Reported
 - ND - Analyte "Not Detected" above the method detection limit.

Matrix Spike / Matrix Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Client Id: /usr/users/seed2/pe3000/960411r3
 Work Group Id: WG6124-5
 Run Id: R3498
 GALP Record Id: Not Reported
 Preparation Date: 09-APR-96
 Analysis Date: 11-APR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	MS Add	MSD Add	Units	Sample Conc	MS %REC	MSD %REC	MS/MSD RPD	QUAL (1)
SW846 Met. 6010 (APIX)												
Preparation Date: 09-APR-96												
Analysis Date: 11-APR-96 12:26												
Workgroup Number: WG6124												
Barium	7440-39-3	75	125	20	2	2	mg/L	.0609	98	98	0	----
Beryllium	7440-41-7	75	125	20	.05	.05	mg/L	ND	99	99	0	----
Cadmium	7440-43-9	75	125	20	.05	.05	mg/L	ND	97	95	2	----
Chromium	7440-47-3	75	125	20	.2	.2	mg/L	ND	106	106	0	----
Cobalt	7440-48-4	75	125	20	.5	.5	mg/L	ND	99	97	2	----
Copper	7440-50-8	75	125	20	.25	.25	mg/L	ND	95	95	0	----
Nickel	7440-02-0	75	125	20	.5	.5	mg/L	ND	98	98	0	----
Silver	7440-22-4	75	125	20	.05	.05	mg/L	ND	85	84	1	----
Vanadium	7440-62-2	75	125	20	.5	.5	mg/L	.012	102	102	0	----
Zinc	7440-66-6	75	125	20	.5	.5	mg/L	.0058	99	99	0	----

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

- (1) QUAL - * = MS Outside Control Limits; # = MSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
- (1) QUAL - ! = The sample concentration is greater than two times the MS or MSD spike conc. High analyte conc. will effect the MS/MSD recoveries.
- "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
- "MS, MSD Add" - The conc. of analyte added to the MS or MSD sample (soil results are corrected for % moisture).
- "Sample Conc" - The units are the same as those reported on the Form 1 Data Summary Report (soil results are corrected for % moisture).
- "MS %REC" - Matrix Spike Percent Recovery
- "MSD %REC" - Matrix Spike Duplicate Percent Recovery
- "MS/MSD RPD" - Matrix Spike / Matrix Spike Duplicate Relative Percent Difference
- NR - Not Reported
- ND - Analyte "Not Detected" above the method detection limit.

Matrix Spike / Matrix Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Client Id: Not Reported
 Work Group Id: WG6173-5
 Run Id: R3498
 GALP Record Id: Not Reported
 Preparation Date: 10-APR-96
 Analysis Date: 12-APR-96
 Report Date: 12-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	MS Add	MSD Add	Units	Sample Conc	MS %REC	MSD %REC	MS/MSD RPD	QUAL (1)
SW846 Met. 6010 (APIX)												
Preparation Date: 10-APR-96												
Analysis Date: 12-APR-96 09:46												
Workgroup Number: WG6173												
Tin	7440-31-5	75	125	20	2	2	mg/L	ND	104	104	0	----

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

- (1) QUAL - * = MS Outside Control Limits; # = MSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
- (1) QUAL - ! = The sample concentration is greater than two times the MS or MSD spike conc. High analyte conc. will effect the MS/MSD recoveries.
- "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
- "MS, MSD Add" - The conc. of analyte added to the MS or MSD sample (soil results are corrected for % moisture).
- "Sample Conc" - The units are the same as those reported on the Form 1 Data Summary Report (soil results are corrected for % moisture).
- "MS %REC" - Matrix Spike Percent Recovery
- "MSD %REC" - Matrix Spike Duplicate Percent Recovery
- "MS/MSD RPD" - Matrix Spike / Matrix Spike Duplicate Relative Percent Difference
- NR - Not Reported
- ND - Analyte "Not Detected" above the method detection limit.

Matrix Spike / Matrix Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Client Id: Not Reported
 Work Group Id: WG6131-5
 Run Id: R3506
 GALP Record Id: Not Reported
 Preparation Date: 10-APR-96
 Analysis Date: 11-APR-96
 Report Date: 11-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	MS Add	MSD Add	Units	Sample Conc	MS %REC	MSD %REC	MS/MSD RPD	QUAL (1)
SW846 Method 7041												
Analysis Date: 11-APR-96 08:26												
Workgroup Number: WG6131												
Antimony	7440-36-0	75	125	20	.02	.02	mg/L	ND	112	114	2	----

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

- (1) QUAL - * = MS Outside Control Limits; # = MSD Outside Control Limits; @ = RPD Outside Control Limits; ' ' = Value Within Control Limits
- (1) QUAL - ! = The sample concentration is greater than two times the MS or MSD spike conc. High analyte conc. will effect the MS/MSD recoveries.
- "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
- "MS, MSD Add" - The conc. of analyte added to the MS or MSD sample (soil results are corrected for % moisture).
- "Sample Conc" - The units are the same as those reported on the Form 1 Data Summary Report (soil results are corrected for % moisture).
- "MS %REC" - Matrix Spike Percent Recovery
- "MSD %REC" - Matrix Spike Duplicate Percent Recovery
- "MS/MSD RPD" - Matrix Spike / Matrix Spike Duplicate Relative Percent Difference
- NR - Not Reported
- ND - Analyte "Not Detected" above the method detection limit.

Matrix Spike / Matrix Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Client Id: Not Reported
 Work Group Id: WG6128-5
 Run Id: R3494
 GALP Record Id: Not Reported
 Preparation Date: 09-APR-96
 Analysis Date: 10-APR-96
 Report Date: 11-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	MS Add	MSD Add	Units	Sample Conc	MS %REC	MSD %REC	MS/MSD RPD	QUAL (1)
SW846 Method 7060												
Analysis Date: 10-APR-96 10:52												
Workgroup Number: WG6128												
Arsenic	7440-38-2	75	125	20	.04	.04	mg/L	ND	116	113	3	----

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

-
- (1) QUAL - * = MS Outside Control Limits; # = MSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
 - (1) QUAL - ! = The sample concentration is greater than two times the MS or MSD spike conc. High analyte conc. will effect the MS/MSD recoveries.
 - "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
 - "MS, MSD Add" - The conc. of analyte added to the MS or MSD sample (soil results are corrected for % moisture).
 - "Sample Conc" - The units are the same as those reported on the Form 1 Data Summary Report (soil results are corrected for % moisture).
 - "MS %REC" - Matrix Spike Percent Recovery
 - "MSD %REC" - Matrix Spike Duplicate Percent Recovery
 - "MS/MSD RPD" - Matrix Spike / Matrix Spike Duplicate Relative Percent Difference
 - NR - Not Reported
 - ND - Analyte "Not Detected" above the method detection limit.

Matrix Spike / Matrix Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Client Id: Not Reported
 Work Group Id: WG6126-5
 Run Id: R3493
 GALP Record Id: Not Reported
 Preparation Date: 09-APR-96
 Analysis Date: 10-APR-96
 Report Date: 11-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	MS Add	MSD Add	Units	Sample Conc	MS %REC	MSD %REC	MS/MSD RPD	QUAL (1)
SW846 Method 7421 Analysis Date: 10-APR-96 07:58 Workgroup Number: WG6126 Lead	7439-92-1	75	125	20	.02	.02	mg/L	ND	114	113	1	----

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

- (1) QUAL - * = MS Outside Control Limits; # = MSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
- (1) QUAL - ! = The sample concentration is greater than two times the MS or MSD spike conc. High analyte conc. will effect the MS/MSD recoveries.
- "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
- "MS, MSD Add" - The conc. of analyte added to the MS or MSD sample (soil results are corrected for % moisture).
- "Sample Conc" - The units are the same as those reported on the Form 1 Data Summary Report (soil results are corrected for % moisture).
- "MS %REC" - Matrix Spike Percent Recovery
- "MSD %REC" - Matrix Spike Duplicate Percent Recovery
- "MS/MSD RPD" - Matrix Spike / Matrix Spike Duplicate Relative Percent Difference
- NR - Not Reported
- ND - Analyte "Not Detected" above the method detection limit.

Matrix Spike / Matrix Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Client Id: Not Reported
 Work Group Id: WG6127-5
 Run Id: R3495
 GALP Record Id: Not Reported
 Preparation Date: 09-APR-96
 Analysis Date: 10-APR-96
 Report Date: 08-MAY-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	MS Add	MSD Add	Units	Sample Conc	MS %REC	MSD %REC	MS/MSD RPD	QUAL (1)
SW846 Method 7740												
Analysis Date: 10-APR-96 10:18												
Workgroup Number: WG6127												
Selenium	7782-49-2	75	125	20	.01	.01	mg/L	.0136	89	90	1	----

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

(1) QUAL - * = MS Outside Control Limits; # = MSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
 (1) QUAL - ! = The sample concentration is greater than two times the MS or MSD spike conc. High analyte conc. will effect the MS/MSD recoveries.
 "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
 "MS, MSD Add" - The conc. of analyte added to the MS or MSD sample (soil results are corrected for % moisture).
 "Sample Conc" - The units are the same as those reported on the Form 1 Data Summary Report (soil results are corrected for % moisture).
 "MS %REC" - Matrix Spike Percent Recovery
 "MSD %REC" - Matrix Spike Duplicate Percent Recovery
 "MS/MSD RPD" - Matrix Spike / Matrix Spike Duplicate Relative Percent Difference
 NR - Not Reported
 ND - Analyte "Not Detected" above the method detection limit.

Matrix Spike / Matrix Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Client Id: Not Reported
 Work Group Id: WG6129-5
 Run Id: R3492
 GALP Record Id: Not Reported
 Preparation Date: 09-APR-96
 Analysis Date: 10-APR-96
 Report Date: 11-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	MS Add	MSD Add	Units	Sample Conc	MS %REC	MSD %REC	MS/MSD RPD	QUAL (1)
SW846 Method 7841												
Analysis Date: 10-APR-96 08:49												
Workgroup Number: WG6129												
Thallium	7440-26-0	75	125	20	.05	.05	mg/L	ND	81	83	2	----

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

- (1) QUAL - * = MS Outside Control Limits; # = MSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
- (1) QUAL - ! = The sample concentration is greater than two times the MS or MSD spike conc. High analyte conc. will effect the MS/MSD recoveries.
- "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
- "MS, MSD Add" - The conc. of analyte added to the MS or MSD sample (soil results are corrected for % moisture).
- "Sample Conc" - The units are the same as those reported on the Form 1 Data Summary Report (soil results are corrected for % moisture).
- "MS %REC" - Matrix Spike Percent Recovery
- "MSD %REC" - Matrix Spike Duplicate Percent Recovery
- "MS/MSD RPD" - Matrix Spike / Matrix Spike Duplicate Relative Percent Difference
- NR - Not Reported
- ND - Analyte "Not Detected" above the method detection limit.

Matrix Spike / Matrix Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Client Id: Not Reported
 Work Group Id: WG6180-5
 Run Id: R3521
 GALP Record Id: Not Reported
 Preparation Date: 12-APR-96
 Analysis Date: 12-APR-96
 Report Date: 15-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	MS Add	MSD Add	Units	Sample Conc	MS %REC	MSD %REC	MS/MSD RPD	QUAL (1)
SW846 Method 7470												
Analysis Date: 12-APR-96 15:31												
Workgroup Number: WG6180												
Mercury	7439-97-6	75	125	20	.002	.002	mg/L	ND	90	90	0	----

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

-
- (1) QUAL - * = MS Outside Control Limits; # = MSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
 - (1) QUAL - ! = The sample concentration is greater than two times the MS or MSD spike conc. High analyte conc. will effect the MS/MSD recoveries.
 - "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
 - "MS, MSD Add" - The conc. of analyte added to the MS or MSD sample (soil results are corrected for % moisture).
 - "Sample Conc" - The units are the same as those reported on the Form 1 Data Summary Report (soil results are corrected for % moisture).
 - "MS %REC" - Matrix Spike Percent Recovery
 - "MSD %REC" - Matrix Spike Duplicate Percent Recovery
 - "MS/MSD RPD" - Matrix Spike / Matrix Spike Duplicate Relative Percent Difference
 - NR - Not Reported
 - ND - Analyte "Not Detected" above the method detection limit.

Matrix Spike / Matrix Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Client Id: Not Reported
 Work Group Id: WG6046-5
 Run Id: R3416
 GALP Record Id: Not Reported
 Preparation Date: 01-APR-96
 Analysis Date: 01-APR-96
 Report Date: 01-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	MS Add	MSD Add	Units	Sample Conc	MS %REC	MSD %REC	MS/MSD RPD	QUAL (1)
SW-846, Method 9060												
Analysis Date: 01-APR-96 09:30												
Workgroup Number: WG6046												
Total Organic Carbon	N/A	75	125	20	16	16	mg/L	.8	89	90	1	----

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

- (1) QUAL - * = MS Outside Control Limits; # = MSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
- (1) QUAL - ! = The sample concentration is greater than two times the MS or MSD spike conc. High analyte conc. will effect the MS/MSD recoveries.
- "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
- "MS, MSD Add" - The conc. of analyte added to the MS or MSD sample (soil results are corrected for % moisture).
- "Sample Conc" - The units are the same as those reported on the Form 1 Data Summary Report (soil results are corrected for % moisture).
- "MS %REC" - Matrix Spike Percent Recovery
- "MSD %REC" - Matrix Spike Duplicate Percent Recovery
- "MS/MSD RPD" - Matrix Spike / Matrix Spike Duplicate Relative Percent Difference
- NR - Not Reported
- ND - Analyte "Not Detected" above the method detection limit.

Matrix Spike / Matrix Spike Duplicate QC Report
 Prepared By: HydroLogic Laboratories, Inc.

Client Id: Not Reported
 Work Group Id: WG6122-5
 Run Id: R3470
 GALP Record Id: Not Reported
 Preparation Date: 08-APR-96
 Analysis Date: 08-APR-96
 Report Date: 09-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	MS Add	MSD Add	Units	Sample Conc	MS %REC	MSD %REC	MS/MSD RPD	QUAL (1)
SW-846, Method 9020												
Analysis Date: 08-APR-96 15:09												
Workgroup Number: WG6122												
Total Organic Halides	N/A	75	125	20	.103	.103	mg/L	.012	58	61	5	*#--

Note:
 Technical Review By: Bob Cathel

Note:
 Report Approved By: Ty Garber

- (1) QUAL - * = MS Outside Control Limits; # = MSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
 (1) QUAL - ! = The sample concentration is greater than two times the MS or MSD spike conc. High analyte conc. will effect the MS/MSD recoveries.
 "Limits" - The "Limits" reported above (Low, High and RPD) are in units of percent (%).
 "MS, MSD Add" - The conc. of analyte added to the MS or MSD sample (soil results are corrected for % moisture).
 "Sample Conc" - The units are the same as those reported on the Form 1 Data Summary Report (soil results are corrected for % moisture).
 "MS %REC" - Matrix Spike Percent Recovery
 "MSD %REC" - Matrix Spike Duplicate Percent Recovery
 "MS/MSD RPD" - Matrix Spike / Matrix Spike Duplicate Relative Percent Difference
 NR - Not Reported
 ND - Analyte "Not Detected" above the method detection limit.

Replicate Sample QC Report
Prepared By: HydroLogic Laboratories, Inc.

Work Group Id: WG6124-4
Run Id: R3498
GALP Record Id: Not Reported
Preparation Date: 09-APR-96
Analysis Date: 11-APR-96
Report Date: 16-APR-96

Analyte	CAS No.	Sample Conc	REP Conc	Units	RPD
SW846 Met. 6010 (APIX)					
Preparation Date: 09-APR-96					
Analysis Date: 11-APR-96 12:23					
Workgroup Number: WG6124					
Barium	7440-39-3	.0609	.0613	mg/L	1
Nickel	7440-02-0	ND	.00773	mg/L	181
Vanadium	7440-62-2	.012	.0136	mg/L	13
Zinc	7440-66-6	.0058	ND	mg/L	37

SW846 Met. 6010 (Total)
Preparation Date: 09-APR-96
Analysis Date: 10-APR-96 15:06
Workgroup Number:

Barium	7440-39-3	.0609	.0613	mg/L	1
Iron	7439-89-6	.0464	.0464	mg/L	0
Manganese	7439-96-5	.00171	.00171	mg/L	0
Nickel	7440-02-0	ND	.00773	mg/L	181
Vanadium	7440-62-2	.012	.0136	mg/L	13
Zinc	7440-66-6	.0058	ND	mg/L	37

Note:
Technical Review By: Bob Cathel

Note:
Report Approved By: Ty Garber

Note	- Only analytes with concentrations above the method detection limit are reported. Some samples may be reported above without any analyte concentrations. For these samples, analytes were not detected in the sample or in the sample replicate.
"Sample Conc"	- The sample concentration.
"REP Conc"	- The replicate sample concentration.
"RPD"	- Relative percent difference
"ND"	- Not Detected

Replicate Sample QC Report
Prepared By: HydroLogic Laboratories, Inc.

Work Group Id: WG6131-4
Run Id: R3506
GALP Record Id: Not Reported
Preparation Date: 10-APR-96
Analysis Date: 11-APR-96
Report Date: 11-APR-96

Analyte	CAS No.	Sample Conc	REP Conc	Units	RPD
SW846 Method 7041					
Analysis Date: 11-APR-96 08:21					
Workgroup Number: WG6131					
Antimony	7440-36-0	ND	.018	mg/L	198

Note:
Technical Review By: Bob Cathel

Note:
Report Approved By: Ty Garber

Note - Only analytes with concentrations above the method detection limit are reported. Some samples may be reported above without any analyte concentrations. For these samples, analytes were not detected in the sample or in the sample replicate.

"Sample Conc" - The sample concentration.
"REP Conc" - The replicate sample concentration.
"RPD" - Relative percent difference
"ND" - Not Detected

Replicate Sample QC Report
Prepared By: Hydrologic Laboratories, Inc.

Work Group Id: WG6127-4
Run Id: R3495
GALP Record Id: Not Reported
Preparation Date: 09-APR-96
Analysis Date: 10-APR-96
Report Date: 11-APR-96

Analyte	CAS No.	Sample Conc	REP Conc	Units	RPD
SW846 Method 7740 Analysis Date: 10-APR-96 10:09 Workgroup Number: WG6127					
Selenium	7782-49-2	.0136	.0128	mg/L	6

Note:
Technical Review By: Bob Cathel

Note:
Report Approved By: Ty Garber

Note	- Only analytes with concentrations above the method detection limit are reported. Some samples may be reported above without any analyte concentrations. For these samples, analytes were not detected in the sample or in the sample replicate.
"Sample Conc"	- The sample concentration.
"REP Conc"	- The replicate sample concentration.
"RPD"	- Relative percent difference
"ND"	- Not Detected

Replicate Sample QC Report
Prepared By: HydroLogic Laboratories, Inc.

Work Group Id: WG6046-4
Run Id: R3416
GALP Record Id: Not Reported
Preparation Date: 01-APR-96
Analysis Date: 01-APR-96
Report Date: 01-APR-96

Analyte	CAS No.	Sample Conc	REP Conc	Units	RPD
SW-846, Method 9060 Analysis Date: 01-APR-96 09:30 Workgroup Number: WG6046					
Total Organic Carbon	N/A	1.8	1.4	mg/L	25

Note:
Technical Review By: Bob Cathel

Note:
Report Approved By: Ty Garber

Note - Only analytes with concentrations above the method detection limit are reported. Some samples may be reported above without any analyte concentrations. For these samples, analytes were not detected in the sample or in the sample replicate.

"Sample Conc" - The sample concentration.
"REP Conc" - The replicate sample concentration.
"RPD" - Relative percent difference
"ND" - Not Detected

Replicate Sample QC Report
Prepared By: HydroLogic Laboratories, Inc.

Work Group Id: WG6122-4
Run Id: R3470
GALP Record Id: Not Reported
Preparation Date: 08-APR-96
Analysis Date: 08-APR-96
Report Date: 09-APR-96

Analyte	CAS No.	Sample Conc	REP Conc	Units	RPD
SW-846, Method 9020 Analysis Date: 08-APR-96 16:01 Workgroup Number: WG6122					
Total Organic Halides	N/A	.012	.008	mg/L	40

Note:
Technical Review By: Bob Cathel

Note:
Report Approved By: Ty Garber

Note - Only analytes with concentrations above the method detection limit are reported. Some samples may be reported above without any analyte concentrations. For these samples, analytes were not detected in the sample or in the sample replicate.

"Sample Conc" - The sample concentration.

"REP Conc" - The replicate sample concentration.

"RPD" - Relative percent difference

"ND" - Not Detected

APPENDIX III
DATA ASSESSMENT

DATA ASSESSMENT
CANNON AIR FORCE BASE
QUARTERLY MONITORING

Data for the Quarterly Sampling event (March 28, 1996) at Canon Air Force Base was reviewed and validated as specified in the Final Work Plan (FEC, February 1996). Data are usable for project objectives. The following paragraphs discuss specific findings of the data review process for sample CAFB-MWO-032896-1.

VOCs. The sample was analyzed within the required 14-day hold time for volatile organic compounds via SW-846 8260. Method blank associated with the sample did not contain detectable concentrations of VOCs. Surrogate percent recoveries for dibromofluoromethane and toluene were slightly below QC limits. Per USEPA Funtional Guidelines for Reviewing Organic Data, quantitation limits are to be qualified as estimated, UJ, to indicate the potential of false negative results for the associated compounds. Relative percent differences (RPDs) amongst laboratory control sample and laboratory control sample duplicate (LCS/LCSD) were outside of QC limits as well. All other QC data, including MS/MSD, and initial and continuing calibration data, were within QC limits. No tentatively identified compounds were detected. VOC results are usable for project objectives. The end user of the data should consider the possibility of false negative results for VOCs associated with surrogates dibromofluoromethane and toluene.

SVOCs. The sample was extracted within the required 7-day hold time for semivolatile organic compounds via SW-846 8270. The associated method blank was free of SVOCs. Surrogate percent recoveries were within QC limits. Several RPDs amongst LCS/LCSD were outside of QC limits. All other QC data, including MS/MSD, and initial and continuing calibration data, were within QC limits. No tentatively identified compounds were detected. Results are usable without qualification.

PAH. The sample was extracted within the required 7-day hold time for polyaromatic hydrocarbons via SW-846 8270. The associated method blank did not contain detectable concentrations of PAHs. Surrogate percent recoveries were within QC limits. Several RPDs amongst LCS/LCSD were outside of QC limits. All other QC data, including MS/MSD, and initial and continuing calibration data, were within QC limits. No tentatively identified compounds were detected. Results are usable without qualification.

Pesticides/PCBs. The sample was extracted three days past the required 7-day holding time for analysis via SW-846 8080. All other QC data, including surrogate percent recoveries, LCS/LCSD, MS/MSD, and method blank results were acceptable. Results are usable without qualification.

Metals. Analyses for metals were performed within required holding time. Method blanks did not contain detectable concentrations of metal analytes. All QC data, with the exception of high LCS and LCSD percent recoveries for selenium, were within QC limits. Results are usable without qualification.

Dioxin (2,3,7,8), Cyanide, Sulfide. The sample was analyzed one day past the required 7-day hold time for dioxin. Hold times for sulfide and cyanide were met. Other QC data, such as method blank results and LCS/LCSD percent recoveries and RPDs were within QC limits. Results are usable without qualification.

Total Organic Carbon The sample was analyzed within hold time for TOC. TOC was detected in the method blank at 0.4 mg/l. MS/MSD and LCS/LCSD data were acceptable. The result for TOC did not require qualification.

Total Organic Halides The sample was analyzed four days past holding time for TOX. MS and MSD percent recoveries were low. All other QC data was acceptable. The result for TOX did not require qualification.

CONTENTS

EXECUTIVE SUMMARY ES-1

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- 1 Summary of Concentrations of Analytes in Groundwater from Monitoring Well Q at Landfill 5, Cannon Air Force Base, New Mexico

APPENDIXES

- I ASSESSMENT MONITORING QUARTERLY REPORT
II ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED MARCH 21, 1996
III CASE NARRATIVES FOR GROUNDWATER SAMPLES COLLECTED MARCH 21, 1996
IV MONITORING WELL CONSTRUCTION DIAGRAM, WELL DEVELOPMENT LOG, GROUNDWATER SAMPLING FORM, AND SURVEY DATA FOR MONITORING WELL Q

EXECUTIVE SUMMARY

This report summarizes the installation and development activities and presents the data resulting from the sampling of Monitoring Well Q at Landfill Number 5, Cannon Air Force Base, Clovis, New Mexico. Monitoring Well Q is located upgradient of Landfill 5.

INSTALLATION, DEVELOPMENT, AND GROUNDWATER SAMPLING OF MW-Q

MW-Q was installed by Harding Lawson Associates (HLA) between February 21 and 26, 1996.

MW-Q was completed to a depth of approximately 295 feet using a Drill Systems Inc. Model AP 1000 dual-tube casing hammer drill rig. The drilling subcontractor was Layne Environmental Services of Denver, Colorado. The well drilling and construction activities were performed in accordance with the HLA's work plan titled "Final Work Plan: Landfill No. 5 Monitoring Wells, Cannon Air Force Base, Clovis, New Mexico" dated January 25, 1996 (Work Plan). MW-Q was developed on February 25 and 27, 1996, using a surge block and bailer. The Monitoring Well Construction Diagram and Well Development Log for MW-Q are provided in Appendix IV.

The first round of groundwater samples was collected from this well on March 21, 1996, in accordance with the procedures outlined in the Work Plan. The Ground Water Sampling Form and survey data for MW-Q are provided in Appendix IV.

GROUNDWATER ANALYTICAL RESULTS

The well was sampled for the analytes listed below.

- Volatile organic compounds, SW-846 Method 8260
- Semivolatile organic compounds, SW-846 Method 8270
- Dioxins (2,3,7,8-TCDD), SW-846 Method 8280
- Polynuclear aromatic hydrocarbons, SW-846 Method 8310
- Pesticides/polychlorinated biphenyls, SW-846 Method 8080
- Herbicides, SW-846 Method 8150

Executive Summary

- Metals, SW-846 Method 6010 and 7000
- Cyanide, SW-846 Method 9012
- Sulfide, SW-846 Method 9030
- Total organic carbon, SW-846 Method 9060
- Total organic halides, SW-846 Method 9020

Monitoring Well Q was also sampled for duplicate analyses of the same parameters; a third set of samples, without total organic carbon and total organic halides, was collected and sent to the U.S. Army Corps of Engineers, Missouri River Division laboratory as an independent quality control sample.

Concentrations of detected analytes are summarized in Table 1. The Assessment Monitoring Quarterly Report for Monitoring Well Q, presented in appropriate New Mexico Environmental Department data forms, is in Appendix I. The analytical results from ARDL, Inc., are contained in Appendix II. The ARDL Case Narratives for organic and inorganic analyses are in Appendix III.

As part of the quality assurance/quality control (QA/QC) procedures for this sampling event, a trip blank, matrix spike-matrix spike duplicate, and duplicate sample were analyzed for the Appendix IX parameters listed above. Chemical data from MW-Q indicate that no organic contaminants were detected above method detection limits, with the exception of methylene chloride, which was reported at a concentration of approximately 3 micrograms per liter ($\mu\text{g/l}$). Because methylene chloride is a common laboratory contaminant and was also detected in laboratory blank and trip blank samples at similar concentrations, HLA considers this methylene chloride reporting a nondetection. Other analytes detected in the sample include metals commonly found in groundwater. Concentrations of these analytes are listed in Table 1.

A full data validation was performed on this initial data set to provide a baseline evaluation of the analytical laboratory's performance for future data submissions. The data validation found that

QA/QC procedures were properly implemented according to analytical method operating procedures. No discrepancies or errors were detected that would compromise the quality of the data for their intended use.

**Table 1: Summary of Quarterly Groundwater Sampling for Monitoring Well Q
First Quarter 1996, Groundwater Sample Summary
Cannon Air Force Base, Clovis, New Mexico**

Analyte-Method	Well/Sample ID:	CAF B-MWQ-032196-1*	CAF B-MWQ-032196-2#	Reporting Limit
	Sample Date:	March 21, 1996	March 21, 1996	
		Concentration	Concentration	
Arsenic - (7061)		0.0031 mg/l	0.0034 mg/l	0.00050 mg/l
Barium - (6010)		0.054 mg/l	0.053 mg/l	0.01 mg/l
Copper - (6010)		0.0061 mg/l U	ND	0.0050 mg/l
Selenium - (7741)		0.0052 mg/l	0.0052 mg/l	0.00050 mg/l
Vanadium - (6010)		0.017 mg/l	0.017 mg/l	0.0050 mg/l
TOC - (9060)		ND	NA	1.0 mg/l
TOX - (9020)		ND	NA	0.010 mg/l
Methylene Chloride - (8260)		2.7 µg/l BJU	3.0 µg/l BJU	0.36 µg/l
SVOCs - (8270)		ND	ND	Varies
PAHs - (8310)		ND	ND	Varies
Organochlorine Pesticides/PCBs - (8080)		ND	ND	Varies
Herbicides - (8150)		ND	ND	Varies
Dioxin-2,3,7,8-TCDD (8280)		ND	ND	Varies
Cyanide (9012)		ND	ND	0.010 mg/l
Sulfide (9030)		ND	ND	1.0 mg/l

B Analyte detected in blank sample
 J Estimated concentration
 mg/l Milligrams per liter
 NA Not analyzed
 ND Not detected
 U Not detected
 µg/l Micrograms per liter

* Groundwater field sample
 # Groundwater field duplicate

Appendix I
ASSESSMENT MONITORING QUARTERLY REPORT

ASSESSMENT MONITORING QUARTERLY REPORT

Facility Name: Cannon Air Force Base, Landfill No. 5, Solid Waste Management
Unit No. 113, Installation Restoration Program No. LF-5

EPA ID. No.: NM7572124454

MRD LIMS No.: 3593

Well No.: MW-Q

Sample Collection by: Jeffrey Minchak and Leonard Stockton - HLA, Albuquerque

Laboratory Name: ARDL, Inc.
P.O. Box 1566, Mt. Vernon Airport, Rt. 15E,
Mt. Vernon, IL 62864

Date Sampled: March 21, 1996

Time Sampled: 1900-1955

Laboratory Sample ID. No.: 300198

Date Received by Laboratory: March 23, 1996

ASSESSMENT MONITORING QUARTERLY REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
 HAZARDOUS & RADIOACTIVE MATERIALS BUREAU
 525 CAMINO DE LOS MARQUEZ, SUITE 4
 SANTA FE, NM 87502

This set of data sheets is for use by all facilities in assessment monitoring (20 NMAC 4.1, Subpart VI, Section 265.93(d)(4), (5) and (7)(e) and (f), and Section 265.94 (b)).

FACILITY NAME Cannon Air Force Base EPA I.D. # NM7572124454

WELL NUMBER MW-Q SAMPLE COLLECTION BY Harding Lawson Associates

LABORATORY NAME ARDL, Inc. Mt. Vernon, IL DATE SAMPLED March 21, 1996

TIME SAMPLED 1900 DATE RECEIVED BY LAB. March 23, 1996

PARAMETERS	STORET CODE	UNITS	VALUE	DATE ANALYZED
Elevation of G.Water	71993	ft.	<u>3992.69</u>	<u>3/21/96</u>
Well Depth	N/A	ft.	<u>296.00</u>	<u>3/21/96</u>
Well Casing Volume	N/A	gal.	<u>14.2</u>	<u>3/21/96</u>
Pump Rate	N/A	gal/min	<u>1</u>	<u>3/21/96</u>
Pump Period	72004	min.	<u>70</u>	<u>3/21/96</u>
Volume Evacuated	73675	gal.	<u>70</u>	<u>3/21/96</u>
Sampler Material	N/A	N/A	<u>tubing</u>	N/A

Well Sampling Method: Polyethylene discharge tubing from pump.

Assessment Monitoring Quarterly Report cont.

Well Number: MW-0

Facility Name Cannon Air Force Base

INDICATOR PARAMETERS

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	<u>7.07f</u>	<u>0.01</u>	<u>3/21/96</u>	
	00400	S.U.	<u>7.21f</u>	<u>0.01</u>	<u>3/21/96</u>	Field Instrument
	00400	S.U.	<u>7.26f</u>	<u>0.01</u>	<u>3/21/96</u>	
	00400	S.U.	<u>7.36f</u>	<u>0.01</u>	<u>3/21/96</u>	
Specific Conductivity	00095	umhos/cm	<u>500f</u>	<u>10</u>	<u>3/21/96</u>	
	00095	umhos/cm	<u>480f</u>	<u>10</u>	<u>3/21/96</u>	Field Instrument
	00095	umhos/cm	<u>500f</u>	<u>10</u>	<u>3/21/96</u>	
	00095	umhos/cm	<u>500f</u>	<u>10</u>	<u>3/21/96</u>	
T.O.X.	70354	mg/l	<u>ND</u>	<u>0.010</u>	<u>4/3/96</u>	
	70354	mg/l	<u> </u>	<u> </u>	<u> </u>	9020
	70354	mg/l	<u> </u>	<u> </u>	<u> </u>	
	70354	mg/l	<u> </u>	<u> </u>	<u> </u>	
T.O.C.	00680	mg/l	<u>ND</u>	<u>1.0</u>	<u>3/25/96</u>	
	00680	mg/l	<u> </u>	<u> </u>	<u> </u>	9060
	00680	mg/l	<u> </u>	<u> </u>	<u> </u>	
	00680	mg/l	<u> </u>	<u> </u>	<u> </u>	

Assessment Monitoring Quarterly Report cont.

Well Number: MW-Q Facility Name Cannon Air Force Base

GROUND WATER QUALITY PARAMETERS

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
Chloride	00940	mg/l	<u>NA</u>			
Iron	01045	mg/l	<u>ND</u>	<u>0.050 mg/L</u>	<u>3/26/96</u>	<u>6010</u>
Manganese	71883	mg/l	<u>0.067</u>	<u>0.0050 mg/L</u>	<u>3/26/96</u>	<u>6010</u>
Phenols	32730	mg/l	<u>NA</u>			
Sodium	00929	mg/l	<u>47.9</u>	<u>0.40 mg/L</u>	<u>3/26/96</u>	<u>6010</u>
Sulfate	00945	mg/l	<u>NA</u>			
Turbidity		TU	<u>1.24f</u>	<u>0.01</u>	<u>3/21/96</u>	<u>Field Instrument</u>

ND = Not Detected
 NA = Not Analyzed

DATE OF THIS REPORT: May 28, 1996
 SIGNATURE: *John A. Helfrich*
 NAME (PRINTED): JOHN A. HELFRICH

Appendix II

**ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES
COLLECTED MARCH 21, 1996**

ARDL, INC.
Rt. 15E, Mt. Vernon Airport Industrial Park
Mt. Vernon, Illinois 62864

Lab Report No: 300198

Report Date: 04/11/1996

Project Name: CANNON AFB
 Project No: COMML

Analysis: Inorganics

Field ID: MWQ
 Sampling Loc'n: WELL
 Sampling Date: 03/21/1996
 Sampling Time: 1903

ARDL No: 300198-01
 Received: 03/23/1996
 Matrix: WATER
 Moisture: NA

Analyte	Detection		Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
	Limit	Result						
ALUMINUM	0.050	ND	MG/L	3010	6010	03/26/96	03/26/96	P1318
ANTIMONY	0.020	ND	MG/L	3010	6010	03/26/96	03/26/96	P1318
ARSENIC	0.00050	0.0031	MG/L	3020	7061	03/26/96	03/27/96	BH2530
BARIUM	0.010	0.054	MG/L	3010	6010	03/26/96	03/26/96	P1318
BERYLLIUM	0.0010	ND	MG/L	3010	6010	03/26/96	03/26/96	P1318
CADMIUM	0.0050	ND	MG/L	3010	6010	03/26/96	03/26/96	P1318
CALCIUM	0.10	47.2	MG/L	3010	6010	03/26/96	03/26/96	P1318
CHROMIUM	0.0050	ND	MG/L	3010	6010	03/26/96	03/26/96	P1318
COBALT	0.0050	ND	MG/L	3010	6010	03/26/96	03/26/96	P1318
COPPER	0.0050	0.0061 U	MG/L	3010	6010	03/26/96	03/26/96	P1318
IRON	0.050	ND	MG/L	3010	6010	03/26/96	03/26/96	P1318
LEAD	0.0010	ND	MG/L	3020	7421	03/26/96	03/28/96	F1316
MAGNESIUM	0.10	39.3	MG/L	3010	6010	03/26/96	03/26/96	P1318
MANGANESE	0.0050	0.067	MG/L	3010	6010	03/26/96	03/26/96	P1318
MERCURY	0.00020	ND	MG/L	7470	7470	03/26/96	03/26/96	C0588
NICKEL	0.020	ND	MG/L	3010	6010	03/26/96	03/26/96	P1318
POTASSIUM	1.5	6.5	MG/L	3010	6010	03/26/96	03/26/96	P1318
SELENIUM	0.00050	0.0052	MG/L	3020	7741	03/26/96	03/27/96	BH2531
SILVER	0.0050	ND	MG/L	3010	6010	03/26/96	03/26/96	P1318
SODIUM	0.40	47.9	MG/L	3010	6010	03/26/96	03/26/96	P1318
THALLIUM	0.0010	ND	MG/L	3020	7841	03/26/96	03/28/96	F1317
VANADIUM	0.0050	0.017	MG/L	3010	6010	03/26/96	03/26/96	P1318
ZINC	0.0050	ND	MG/L	3010	6010	03/26/96	03/26/96	P1318
CYANIDE	0.010	ND J	MG/L	9012	9012	03/26/96	03/26/96	03272095
SULFIDE, TOTAL	1.0	ND	MG/L	NONE	9030	NA	03/26/96	03292101
TOTAL ORGANIC CARBON	1.0	ND	MG/L	NONE	9060	NA	03/25/96	03262092
TOTAL ORGANIC HALIDES	0.010	ND	MG/L	NONE	9020	NA	04/03/96	04042117

VALIDATED

Reviewed By *[Signature]*
 Date 5/7/96

ARDL, INC.
Rt. 15E, Mt. Vernon Airport Industrial Park
Mt. Vernon, Illinois 62864

Lab Report No: 300198

Report Date: 04/11/1996

Project Name: CANNON AFB
 Project No: COMML

Analysis: Inorganics

Field ID: MWQ-D
 Sampling Loc'n: WELL
 Sampling Date: 03/21/1996
 Sampling Time: 1903

ARDL No: 300198-02
 Received: 03/23/1996
 Matrix: WATER
 Moisture: NA

Analyte	Detection Limit	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
ALUMINUM	0.050	ND	MG/L	3010	6010	03/26/96	03/26/96	P1318
ANTIMONY	0.020	ND	MG/L	3010	6010	03/26/96	03/26/96	P1318
ARSENIC	0.00050	0.0034	MG/L	3020	7061	03/26/96	03/27/96	BH2530
BARIUM	0.010	0.053	MG/L	3010	6010	03/26/96	03/26/96	P1318
BERYLLIUM	0.0010	ND	MG/L	3010	6010	03/26/96	03/26/96	P1318
CADMIUM	0.0050	ND	MG/L	3010	6010	03/26/96	03/26/96	P1318
CALCIUM	0.10	46.6	MG/L	3010	6010	03/26/96	03/26/96	P1318
CHROMIUM	0.0050	ND	MG/L	3010	6010	03/26/96	03/26/96	P1318
COBALT	0.0050	ND	MG/L	3010	6010	03/26/96	03/26/96	P1318
COPPER	0.0050	ND	MG/L	3010	6010	03/26/96	03/26/96	P1318
IRON	0.050	ND	MG/L	3010	6010	03/26/96	03/26/96	P1318
LEAD	0.0010	ND	MG/L	3020	7421	03/26/96	03/28/96	F1316
MAGNESIUM	0.10	39.0	MG/L	3010	6010	03/26/96	03/26/96	P1318
MANGANESE	0.0050	0.065	MG/L	3010	6010	03/26/96	03/26/96	P1318
MERCURY	0.00020	ND	MG/L	7470	7470	03/26/96	03/26/96	C0588
NICKEL	0.020	ND	MG/L	3010	6010	03/26/96	03/26/96	P1318
POTASSIUM	1.5	6.3	MG/L	3010	6010	03/26/96	03/26/96	P1318
SELENIUM	0.00050	0.0052	MG/L	3020	7741	03/26/96	03/27/96	BH2531
SILVER	0.0050	ND	MG/L	3010	6010	03/26/96	03/26/96	P1318
SODIUM	0.40	48.5	MG/L	3010	6010	03/26/96	03/26/96	P1318
THALLIUM	0.0010	ND	MG/L	3020	7841	03/26/96	03/28/96	F1317
VANADIUM	0.0050	0.017	MG/L	3010	6010	03/26/96	03/26/96	P1318
ZINC	0.0050	ND	MG/L	3010	6010	03/26/96	03/26/96	P1318
CYANIDE	0.010	ND ^J	MG/L	9012	9012	03/26/96	03/26/96	03272095
SULFIDE, TOTAL	10.0	ND	MG/L	NONE	9030	NA	03/26/96	03292101

VALIDATED

Reviewed By *Fernando*
 Date *5/5/96*

ARDL, INC.
Rt. 15E, Mt. Vernon Airport Industrial Park
Mt. Vernon, Illinois 62864

Lab Report No: 300198

Report Date: 04/19/1996

Project Name: CANNON AFB
 Project No.: HLA

Analysis: BNA'S (METHOD 8270)
 Analytical Method: SW8270
 Prep Method: SW3510

Field ID: MWQ	ARDL Lab No.: 300198-01
Desc/Location: WELL	Lab Filename:
Sample Date: 03/21/1996	Received Date: 03/23/1996
Sample Time: 1903	Prep. Date: 03/26/1996
Matrix: WATER	Analysis Date: 04/04/1996
Amount Used: 1000 mL	QC Batch: B1147
% Moisture: NA	

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
PYRIDINE	2.1	10.0	ND		UG/L	1.00
N-NITROSODIMETHYLAMINE	2.5	10.0	ND		UG/L	1.00
2-PICOLINE	2.4	10.0	ND		UG/L	1.00
N-NITROSOMETHYLETHYLAMINE	2.5	10.0	ND		UG/L	1.00
METHYL METHANESULFONATE	1.4	10.0	ND		UG/L	1.00
N-NITROSODIETHYLAMINE	2.4	10.0	ND		UG/L	1.00
ETHYL METHANESULFONATE	2.0	10.0	ND		UG/L	1.00
ANILINE	1.7	10.0	ND		UG/L	1.00
PHENOL	1.8	10.0	ND		UG/L	1.00
BIS(-2-CHLOROETHYL)ETHER	2.9	10.0	ND		UG/L	1.00
2-CHLOROPHENOL	2.5	10.0	ND		UG/L	1.00
1,3-DICHLOROENZENE	3.2	10.0	ND		UG/L	1.00
1,4-DICHLOROENZENE	1.6	10.0	ND		UG/L	1.00
BENZYL ALCOHOL	3.3	10.0	ND		UG/L	1.00
1,2-DICHLOROENZENE	2.4	10.0	ND		UG/L	1.00
2-METHYLPHENOL	1.8	10.0	ND		UG/L	1.00
BIS(2-CHLOROISOPROPYL)ETHER	2.7	10.0	ND		UG/L	1.00
ACETOPHENONE	1.8	10.0	ND		UG/L	1.00
N-NITROSOPYRROLIDINE	1.8	10.0	ND		UG/L	1.00
N-NITROSOMORPHOLINE	1.6	10.0	ND		UG/L	1.00
o-TOLUIDINE	2.0	10.0	ND		UG/L	1.00
4-METHYLPHENOL	2.0	10.0	ND		UG/L	1.00
N-NITROSO-DI-N-PROPYLAMINE	3.2	10.0	ND		UG/L	1.00
HEXACHLOROETHANE	3.2	10.0	ND		UG/L	1.00
NITROBENZENE	2.7	10.0	ND		UG/L	1.00
N-NITROSOPIPERIDINE	2.0	10.0	ND		UG/L	1.00
ISOPHORONE	3.2	10.0	ND		UG/L	1.00
2-NITROPHENOL	3.4	10.0	ND		UG/L	1.00
2,4-DIMETHYLPHENOL	2.1	10.0	ND		UG/L	1.00
BIS(-2-CHLOROETHOXY)METHANE	3.3	10.0	ND		UG/L	1.00
o,o,o-TRIETHYLPHOSPHOROTHIOATE	2.1	10.0	ND		UG/L	1.00
2,4-DICHLOROPHENOL	3.2	10.0	ND		UG/L	1.00

Sample 300198-01, BNA'S (METHOD 8270)

VALIDATED

Page 1 of 4

Reviewed By *Kenneth J. Smith*

30016

Date 4/17/96

ARDL, INC.
Rt. 15E, Mt. Vernon Airport Industrial Park
Mt. Vernon, Illinois 62864

Lab Report No: 300198

Report Date: 04/23/1996

Project Name: CANNON AFB	Analysis: BNA'S (METHOD 8270)
Project No.: HLA	Analytical Method: SW8270
	Prep Method: SW3510

Field ID: MWQ	ARDL Lab No.: 300198-01 (cont'd)
Desc/Location: WELL	Lab Filename:
Sample Date: 03/21/1996	Received Date: 03/23/1996
Sample Time: 1903	Prep. Date: 03/26/1996
Matrix: WATER	Analysis Date: 04/04/1996
Amount Used: 1000 mL	QC Batch: B1147
% Moisture: NA	

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
1,2,4-TRICHLOROENZENE	2.8	10.0	ND		UG/L	1.00
NAPHTHALENE	3.4	10.0	ND		UG/L	1.00
4-CHLOROANILINE	4.6	10.0	ND		UG/L	1.00
2,6-DICHLOROPHENOL	1.7	10.0	ND		UG/L	1.00
HEXACHLOROPROPENE	2.0	10.0	ND		UG/L	1.00
HEXACHLOROBUTADIENE	2.8	10.0	ND		UG/L	1.00
N-NITROSO-DI-N-BUTYLAMINE	1.7	10.0	ND		UG/L	1.00
4-CHLORO-3-METHYLPHENOL	3.4	10.0	ND		UG/L	1.00
SAFROLE	1.9	10.0	ND		UG/L	1.00
2-METHYLNAPHTHALENE	3.3	10.0	ND		UG/L	1.00
1,2,4,5-TETRACHLOROENZENE	1.5	10.0	ND		UG/L	1.00
HEXACHLOROCYCLOPENTADIENE	1.7	10.0	ND		UG/L	1.00
ISOSAFROLE	2.6	10.0	ND		UG/L	1.00
2,4,6-TRICHLOROPHENOL	4.7	10.0	ND		UG/L	1.00
2,4,5-TRICHLOROPHENOL	4.2	50.0	ND		UG/L	1.00
2-CHLORONAPHTHALENE	2.7	10.0	ND		UG/L	1.00
2-NITROANILINE	2.8	50.0	ND		UG/L	1.00
1,4-NAPHTHOQUINONE	1.5	10.0	ND		UG/L	1.00
ACENAPHTHYLENE	3.1	10.0	ND		UG/L	1.00
DIMETHYL PHTHALATE	5.7	10.0	ND		UG/L	1.00
2,6-DINITROTOLUENE	2.1	10.0	ND		UG/L	1.00
3-NITROANILINE	5.9	50.0	ND		UG/L	1.00
ACENAPHTHENE	2.3	10.0	ND		UG/L	1.00
2,4-DINITROPHENOL	3.7	50.0	ND		UG/L	1.00
PENTACHLOROENZENE	1.2	10.0	ND		UG/L	1.00
4-NITROPHENOL	2.0	50.0	ND J		UG/L	1.00
DIBENZOFURAN	2.4	10.0	ND		UG/L	1.00
2,4-DINITROTOLUENE	2.3	10.0	ND		UG/L	1.00
1-NAPHTHYLAMINE	2.6	10.0	ND		UG/L	1.00
2-NAPHTHYLAMINE	1.2	10.0	ND		UG/L	1.00
2,3,4,6-TETRACHLOROPHENOL	0.86	10.0	ND		UG/L	1.00
DIETHYLPHTHALATE	3.5	10.0	ND		UG/L	1.00

Sample 300198-01, BNA'S (METHOD 8270)

VALIDATED
 Reviewed By *[Signature]*
 Date 4/23/96

Page 2 of 4

30017

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MWQ

Lab Name: ARDL, INC. Contract: CANNON AFB

Lab Code: --- Case No.: --- SAS No.: --- SDG No.: MWQ

Matrix: (soil/water) WATER Lab Sample ID: 300198-01

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: >W6109

Level: (low/med) LOW Date Received: 3/23/96

Moisture: not dec. --- Decanted: (Y/N) N Date Extracted: 3/26/96

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 4/04/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) N pH: 7.1

Number TICs found: 1 CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.78	5.	J B U
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VALIDATED

Reviewed By *[Signature]*
Date *3/9/96*

ARDL, INC.
Rt. 15E, Mt. Vernon Airport Industrial Park
Mt. Vernon, Illinois 62864

Lab Report No: 300198

Report Date: 04/23/1996

Project Name: CANNON AFB	Analysis: BNA'S (METHOD 8270)
Project No.: HLA	Analytical Method: SW8270
	Prep Method: SW3510

Field ID: MWQ	ARDL Lab No.: 300198-02 (cont'd)
Desc/Location: WELL	Lab Filename:
Sample Date: 03/21/1996	Received Date: 03/23/1996
Sample Time: 1903	Prep. Date: 03/26/1996
Matrix: WATER	Analysis Date: 04/04/1996
Amount Used: 1000 mL	QC Batch: B1147
% Moisture: NA	

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
1,2,4-TRICHLOROBENZENE	2.8	10.0	ND		UG/L	1.00
NAPHTHALENE	3.4	10.0	ND		UG/L	1.00
4-CHLOROANILINE	4.6	10.0	ND		UG/L	1.00
2,6-DICHLOROPHENOL	1.7	10.0	ND		UG/L	1.00
HEXACHLOROPROPENE	2.0	10.0	ND		UG/L	1.00
HEXACHLOROBUTADIENE	2.8	10.0	ND		UG/L	1.00
N-NITROSO-DI-N-BUTYLAMINE	1.7	10.0	ND		UG/L	1.00
4-CHLORO-3-METHYLPHENOL	3.4	10.0	ND		UG/L	1.00
SAFROLE	1.9	10.0	ND		UG/L	1.00
2-METHYLNAPHTHALENE	3.3	10.0	ND		UG/L	1.00
1,2,4,5-TETRACHLOROBENZENE	1.5	10.0	ND		UG/L	1.00
HEXACHLOROCYCLOPENTADIENE	1.7	10.0	ND		UG/L	1.00
ISOSAFROLE	2.6	10.0	ND		UG/L	1.00
2,4,6-TRICHLOROPHENOL	4.7	10.0	ND		UG/L	1.00
2,4,5-TRICHLOROPHENOL	4.2	50.0	ND		UG/L	1.00
2-CHLORONAPHTHALENE	2.7	10.0	ND		UG/L	1.00
2-NITROANILINE	2.8	50.0	ND		UG/L	1.00
1,4-NAPHTHOQUINONE	1.5	10.0	ND		UG/L	1.00
ACENAPHTHYLENE	3.1	10.0	ND		UG/L	1.00
DIMETHYL PHTHALATE	5.7	10.0	ND		UG/L	1.00
2,6-DINITROTOLUENE	2.1	10.0	ND		UG/L	1.00
3-NITROANILINE	5.9	50.0	ND		UG/L	1.00
ACENAPHTHENE	2.3	10.0	ND		UG/L	1.00
2,4-DINITROPHENOL	3.7	50.0	ND		UG/L	1.00
PENTACHLOROBENZENE	1.2	10.0	ND		UG/L	1.00
4-NITROPHENOL	2.0	50.0	ND	J	UG/L	1.00
DIBENZOFURAN	2.4	10.0	ND		UG/L	1.00
2,4-DINITROTOLUENE	2.3	10.0	ND		UG/L	1.00
1-NAPHTHYLAMINE	2.6	10.0	ND		UG/L	1.00
2-NAPHTHYLAMINE	1.2	10.0	ND		UG/L	1.00
2,3,4,6-TETRACHLOROPHENOL	0.86	10.0	ND		UG/L	1.00
DIETHYLPHTHALATE	3.5	10.0	ND		UG/L	1.00

Sample 300198-02, BNA'S (METHOD 8270)

VALIDATED

Page 2 of 4

Reviewed By *[Signature]*
Date 4/23/96

30031

ARDL, INC.
 Rt. 15E, Mt. Vernon Airport Industrial Park
 Mt. Vernon, Illinois 62864

Lab Report No: 300198

Report Date: 04/19/1996

Project Name: CANNON AFB	Analysis: BNA'S (METHOD 8270)
Project No.: HLA	Analytical Method: SW8270
	Prep Method: SW3510
Field ID: MWQ-D	ARDL Lab No.: 300198-02 (cont'd)
Desc/Location: WELL	Lab Filename:
Sample Date: 03/21/1996	Received Date: 03/23/1996
Sample Time: 1903	Prep. Date: 03/26/1996
Matrix: WATER	Analysis Date: 04/04/1996
Amount Used: 1000 mL	QC Batch: B1147
% Moisture: NA	

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
3,3'-DIMETHYLBENZIDINE	3.2	10.0	ND		UG/L	1.00
FAMPHUR	1.3	10.0	ND		UG/L	1.00
BUTYLBENZYLPHthalate	3.6	10.0	ND		UG/L	1.00
2-ACETYLAMINOFLUORENE	0.95	10.0	ND		UG/L	1.00
3,3'-DICHLOROBENZIDINE	10.0	20.0	ND		UG/L	1.00
BENZO(a)ANTHRACENE	3.3	10.0	ND		UG/L	1.00
BIS(2-ETHYLHEXYL) PHTHALATE	3.5	10.0	ND		UG/L	1.00
CHRYSENE	2.5	10.0	ND		UG/L	1.00
DI-N-OCTYL PHTHALATE	2.7	10.0	ND		UG/L	1.00
BENZO(b) FLUORANTHENE	3.5	10.0	ND		UG/L	1.00
BENZO(k) FLUORANTHENE	3.4	10.0	ND		UG/L	1.00
7,12-DIMETHYLBENZ[A]ANTHRACENE	0.74	10.0	ND		UG/L	1.00
BENZO(a) PYRENE	1.3	10.0	ND		UG/L	1.00
3-METHYLCHOLANTHRENE	1.2	10.0	ND		UG/L	1.00
INDENO(1,2,3-cd) PYRENE	2.3	10.0	ND		UG/L	1.00
DIBENZO(a,h)ANTHRACENE	1.9	10.0	ND		UG/L	1.00
BENZO(g,h,i)PERYLENE	3.1	10.0	ND		UG/L	1.00

SURROGATE RECOVERIES:	Limits	Results
D5 NITROBENZENE	35-114	54%
2-FLUOROBIPHENYL	43-116	63%
D14 TERPHENYL	33-141	77%
D5 PHENOL	10-94	22%
2-FLUOROPHENOL	21-100	35%
2,4,6-TRIBROMOPHENOL	10-123	79%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 300198-02, BNA'S (METHOD 8270)

VALIDATED

Page 4 of 4

Reviewed By *[Signature]*

Date 4/22/96

30033

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MWQ-2

Lab Name: ARDL, INC.

Contract: CANNON AFB

Lab Code: ---

Case No.: ---

SAS No.: ---

SDG No.: MWQ

Matrix: (soil/water) WATER

Lab Sample ID: 300198-02

Sample wt/vol: 1000.0 (g/mL) ML

Lab File ID: >W6112

Level: (low/med) LOW

Date Received: 3/23/96

% Moisture: not dec. --- decanted: (Y/N) N

Date Extracted: 3/26/96

Concentrated Extract Volume: 1000.0 (uL)

Date Analyzed: 4/04/96

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N

pH: 7.1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.78	4.	J B U
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VALIDATED

FORM I SV-TIC Reviewed By [Signature] 30034
Date 4/2/96

ARDL, INC.
Rt. 15E, Mt. Vernon Airport Industrial Park
Mt. Vernon, Illinois 62864

Lab Report No: 300198

Report Date: 04/09/1996

Project Name: CANNON AFB	Analysis: CHLORINATED PESTICIDES & PCB'S
Project No.: COMML	Analytical Method: SW8080
	Prep Method: SW3510

Field ID: MWQ	ARDL Lab No.: 300198-01
Desc/Location: WELL	Lab Filename:
Sample Date: 03/21/1996	Received Date: 03/23/1996
Sample Time: 1903	Prep. Date: 03/26/1996
Matrix: WATER	Analysis Date: 03/29/1996
Amount Used: 1000 mL	QC Batch: B1148
% Moisture: NA	

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Isodrin	0.0090	0.050	ND		UG/L	1.00
BHC, ALPHA	0.0090	0.050	ND		UG/L	1.00
BHC, BETA-	0.0090	0.050	ND		UG/L	1.00
BHC, DELTA-	0.0090	0.050	ND		UG/L	1.00
LINDANE	0.0080	0.050	ND		UG/L	1.00
HEPTACHLOR	0.010	0.050	ND		UG/L	1.00
ALDRIN	0.0080	0.050	ND		UG/L	1.00
HEPTACHLOR EPOXIDE	0.0080	0.050	ND		UG/L	1.00
ENDOSULFAN I	0.0090	0.050	ND		UG/L	1.00
DIELDRIN	0.0080	0.10	ND		UG/L	1.00
4,4'-DDE	0.0080	0.10	ND		UG/L	1.00
ENDRIN	0.0080	0.10	ND		UG/L	1.00
ENDOSULFAN II	0.0080	0.10	ND		UG/L	1.00
4,4'-DDD	0.0080	0.10	ND		UG/L	1.00
ENDOSULFAN SULFATE	0.0090	0.10	ND		UG/L	1.00
4,4'-DDT	0.0080	0.10	ND		UG/L	1.00
METHOXYCHLOR	0.0090	0.10	ND		UG/L	1.00
ENDRIN ALDEHYDE	0.0090	0.10	ND		UG/L	1.00
CHLORDANE	0.017	0.14	ND		UG/L	1.00
TOXAPHENE	0.17	1.7	ND		UG/L	1.00
AROCLOR 1016	0.17	1.0	ND		UG/L	1.00
AROCLOR 1221	0.33	2.0	ND		UG/L	1.00
AROCLOR 1232	0.16	1.0	ND		UG/L	1.00
AROCLOR 1242	0.16	1.0	ND		UG/L	1.00
AROCLOR 1248	0.17	1.0	ND		UG/L	1.00
AROCLOR 1254	0.17	1.0	ND		UG/L	1.00
AROCLOR 1260	0.17	1.0	ND		UG/L	1.00
ENDRIN KETONE	0.0080	0.10	ND		UG/L	1.00

VALIDATED

Reviewed By *Kevin J. Smith*
Date *5/17/96*

ARDL, INC.
Rt. 15E, Mt. Vernon Airport Industrial Park
Mt. Vernon, Illinois 62864

Lab Report No: 300198

Report Date: 04/09/1996

Project Name: CANNON AFB		Analysis: CHLORINATED PESTICIDES & PCB'S			
Project No.: COMML		Analytical Method: SW8080		Prep Method: SW3510	
Field ID:	MWQ-D	ARDL Lab No.:	300198-02		
Desc/Location:	WELL	Lab Filename:			
Sample Date:	03/21/1996	Received Date:	03/23/1996		
Sample Time:	1903	Prep. Date:	03/26/1996		
Matrix:	WATER	Analysis Date:	03/29/1996		
Amount Used:	1000 mL	QC Batch:	B1148		
% Moisture:	NA				

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Isodrin	0.0090	0.050	ND		UG/L	1.00
BHC, ALPHA	0.0090	0.050	ND		UG/L	1.00
BHC, BETA-	0.0090	0.050	ND		UG/L	1.00
BHC, DELTA-	0.0090	0.050	ND		UG/L	1.00
LINDANE	0.0080	0.050	ND		UG/L	1.00
HEPTACHLOR	0.010	0.050	ND		UG/L	1.00
ALDRIN	0.0080	0.050	ND		UG/L	1.00
HEPTACHLOR EPOXIDE	0.0080	0.050	ND		UG/L	1.00
ENDOSULFAN I	0.0090	0.050	ND		UG/L	1.00
DIELDRIN	0.0080	0.10	ND		UG/L	1.00
4,4'-DDE	0.0080	0.10	ND		UG/L	1.00
ENDRIN	0.0080	0.10	ND		UG/L	1.00
ENDOSULFAN II	0.0080	0.10	ND		UG/L	1.00
4,4'-DDD	0.0080	0.10	ND		UG/L	1.00
ENDOSULFAN SULFATE	0.0090	0.10	ND		UG/L	1.00
4,4'-DDT	0.0080	0.10	ND		UG/L	1.00
METHOXYCHLOR	0.0090	0.10	ND		UG/L	1.00
ENDRIN ALDEHYDE	0.0090	0.10	ND		UG/L	1.00
CHLORDANE	0.017	0.14	ND		UG/L	1.00
TOXAPHENE	0.17	1.7	ND		UG/L	1.00
AROCLOR 1016	0.17	1.0	ND		UG/L	1.00
AROCLOR 1221	0.33	2.0	ND		UG/L	1.00
AROCLOR 1232	0.16	1.0	ND		UG/L	1.00
AROCLOR 1242	0.16	1.0	ND		UG/L	1.00
AROCLOR 1248	0.17	1.0	ND		UG/L	1.00
AROCLOR 1254	0.17	1.0	ND		UG/L	1.00
AROCLOR 1260	0.17	1.0	ND		UG/L	1.00
ENDRIN KETONE	0.0080	0.10	ND		UG/L	1.00

VALIDATED

Reviewed By *G. J. [Signature]*
Date *5/14/96*

ARDL, INC.
Rt. 15E, Mt. Vernon Airport Industrial Park
Mt. Vernon, Illinois 62864

Lab Report No: 300198

Report Date: 04/17/1996

Project Name: CANNON AFB	Analysis: VOLATILES, GC/MS (8260)
Project No.: COMML	Analytical Method: SW8260
	Prep Method: SW5030

Field ID: MWQ	ARDL Lab No.: 300198-01 (cont'd)
Desc/Location: WELL	Lab Filename:
Sample Date: 03/21/1996	Received Date: 03/23/1996
Sample Time: 1903	Prep. Date: 03/26/1996
Matrix: WATER	Analysis Date: 03/26/1996
Amount Used: 5 mL	QC Batch: 0402LS7
% Moisture: NA	

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
BROMODICHLOROMETHANE	0.13	5.0	ND		UG/L	1.00
METHYLMETHACRYLATE	1.5	5.0	ND		UG/L	1.00
cis-1,3-DICHLOROPROPENE	0.40	5.0	ND		UG/L	1.00
4-METHYL-2-PENTANONE	0.79	10.0	ND		UG/L	1.00
TOLUENE	0.15	5.0	ND		UG/L	1.00
trans-1,3-DICHLOROPROPENE	0.35	5.0	ND		UG/L	1.00
1,1,2-TRICHLOROETHANE	0.49	5.0	ND		UG/L	1.00
1,2-DIBROMOETHANE	0.43	5.0	ND		UG/L	1.00
TETRACHLOROETHENE	0.27	5.0	ND		UG/L	1.00
1,3-DICHLOROPROPANE	0.31	5.0	ND		UG/L	1.00
2-HEXANONE	1.7	10.0	ND		UG/L	1.00
DIBROMOCHLOROMETHANE	0.21	5.0	ND		UG/L	1.00
CHLOROBENZENE	0.090	5.0	ND		UG/L	1.00
1,1,1,2-TETRACHLOROETHANE	0.19	5.0	ND		UG/L	1.00
ETHYLBENZENE	0.20	5.0	ND		UG/L	1.00
m & p-XYLENE	0.54	5.0	ND		UG/L	1.00
o-XYLENE	0.20	5.0	ND		UG/L	1.00
STYRENE	0.080	5.0	ND		UG/L	1.00
BROMOFORM	0.29	5.0	ND		UG/L	1.00
ISOPROPYLBENZENE	0.27	5.0	ND		UG/L	1.00
1,1,2,2-TETRACHLOROETHANE	0.44	5.0	ND		UG/L	1.00
BROMOBENZENE	0.28	5.0	ND		UG/L	1.00
1,2,3-TRICHLOROPROPANE	0.29	5.0	ND		UG/L	1.00
n-PROPYLBENZENE	0.38	5.0	ND		UG/L	1.00
2-CHLOROTOLUENE	0.28	5.0	ND		UG/L	1.00
trans-1,4-DICHLORO-2-BUTENE	3.1	5.0	ND		UG/L	1.00
4-CHLOROTOLUENE	0.16	5.0	ND		UG/L	1.00
1,3,5-TRIMETHYLBENZENE	0.23	5.0	ND		UG/L	1.00
tert-BUTYLBENZENE	0.23	5.0	ND		UG/L	1.00
1,2,4-TRIMETHYLBENZENE	0.090	5.0	ND		UG/L	1.00
sec-BUTYLBENZENE	0.40	5.0	ND		UG/L	1.00
p-ISOPROPYLTOLUENE	0.27	5.0	ND		UG/L	1.00

Sample 300198-01, VOLATILES, GC/MS (8260)

VALIDATED

Page 2 of 3

20017

Reviewed By *[Signature]*

Date 5/2/96

ARDL, INC.
 Rt. 15E, Mt. Vernon Airport Industrial Park
 Mt. Vernon, Illinois 62864

Lab Report No: 300198

Report Date: 04/17/1996

Project Name: CANNON AFB	Analysis: VOLATILES, GC/MS (8260)
Project No.: COMML	Analytical Method: SW8260
	Prep Method: SW5030

Field ID: MWQ	ARDL Lab No.: 300198-01 (cont'd)
Desc/Location: WELL	Lab Filename:
Sample Date: 03/21/1996	Received Date: 03/23/1996
Sample Time: 1903	Prep. Date: 03/26/1996
Matrix: WATER	Analysis Date: 03/26/1996
Amount Used: 5 mL	QC Batch: 0402LS7
% Moisture: NA	

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
1,3-DICHLOROBENZENE	0.14	5.0	ND		UG/L	1.00
1,4-DICHLOROBENZENE	0.090	5.0	ND		UG/L	1.00
1,2-DICHLOROBENZENE	0.17	5.0	ND		UG/L	1.00
n-BUTYLBENZENE	0.44	5.0	ND		UG/L	1.00
1,2-DIBROMO-3-CHLOROPROPANE	1.4	10.0	ND		UG/L	1.00
1,2,4-TRICHLOROBENZENE	0.34	5.0	ND		UG/L	1.00
HEXACHLOROBUTADIENE	0.75	5.0	ND		UG/L	1.00
NAPHTHALENE	0.39	5.0	ND		UG/L	1.00
1,2,3-TRICHLOROBENZENE	0.44	5.0	ND		UG/L	1.00

SURROGATE RECOVERIES:	Limits	Results
DIBROMOFLUOROMETHANE	86-118	102%
1,2-DICHLOROETHANE-D4	80-120	87%
TOLUENE-D8	88-110	94%
4-BROMOFLUOROBENZENE	86-115	91%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

VALIDATED

Reviewed By *[Signature]*
 Date 5/3/96

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MWQ

b Name: ARDL, INC.

Contract: CANNON AFB

b Code: ---

Case No.: ---

SAS No.: ---

SDG No.: MWQ

Matrix: (soil/water) WATER

Lab Sample ID: 300198-01

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: >K1439

Level: (low/med) LOW

Date Received: 3/23/96

Moisture: not dec. ---

Date Analyzed: 3/26/96

Column: J&W DB-624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: --- (uL)

Soil Aliquot Volume: --- (uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.76131	ETHANE, 1,1,2-TRICHLORO-1,2,	3.71	120.	JNB U
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VALIDATED /20019

FORM I VOA-TIC

Reviewed By *Ben W...*

3/90

Date 5/3/96

ARDL, INC.
Rt. 15E, Mt. Vernon Airport Industrial Park
Mt. Vernon, Illinois 62864

Lab Report No: 300198

Report Date: 04/17/1996

Project Name: CANNON AFB		Analysis: VOLATILES, GC/MS (8260)				
Project No.: COMML		Analytical Method: SW8260				
		Prep Method: SW5030				
Field ID:	MWQ-D	ARDL Lab No.:	300198-02			
Desc/Location:	WELL	Lab Filename:				
Sample Date:	03/21/1996	Received Date:	03/23/1996			
Sample Time:	1903	Prep. Date:	03/26/1996			
Matrix:	WATER	Analysis Date:	03/26/1996			
Amount Used:	5 mL	QC Batch:	0402LS7			
% Moisture:	NA					

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
DICHLORODIFLUOROMETHANE	0.92	5.0	ND		UG/L	1.00
CHLOROMETHANE	0.94	5.0	ND		UG/L	1.00
VINYL CHLORIDE	0.73	5.0	ND		UG/L	1.00
BROMOMETHANE	0.80	5.0	ND		UG/L	1.00
CHLOROETHANE	1.2	5.0	ND		UG/L	1.00
TRICHLOROFLUOROMETHANE	0.86	5.0	ND		UG/L	1.00
1,1-DICHLOROETHENE	0.67	5.0	ND		UG/L	1.00
2-PROPENAL	4.6	10.0	ND		UG/L	1.00
ACETONE	5.1	25.0	ND		UG/L	1.00
CARBON DISULFIDE	0.33	10.0	ND		UG/L	1.00
IODOMETHANE	0.73	5.0	ND		UG/L	1.00
ALLYL CHLORIDE	1.1	5.0	ND		UG/L	1.00
METHYLENE CHLORIDE	0.36	5.0	3	BJU	UG/L	1.00
trans-1,2-DICHLOROETHENE	0.61	5.0	ND		UG/L	1.00
ACRYLONITRILE	2.9	10.0	ND		UG/L	1.00
1,1-DICHLOROETHANE	0.31	5.0	ND		UG/L	1.00
CHLOROPRENE	0.69	5.0	ND		UG/L	1.00
VINYL ACETATE	0.37	10.0	ND		UG/L	1.00
2,2-DICHLOROPROPANE	1.7	5.0	ND		UG/L	1.00
cis-1,2-DICHLOROETHENE	0.34	5.0	ND		UG/L	1.00
2-BUTANONE	2.6	25.0	ND	J	UG/L	1.00
BROMOCHLOROMETHANE	0.37	5.0	ND		UG/L	1.00
CHLOROFORM	0.20	5.0	ND		UG/L	1.00
1,1,1-TRICHLOROETHANE	0.36	5.0	ND		UG/L	1.00
1,1-DICHLOROPROPENE	0.40	5.0	ND		UG/L	1.00
CARBON TETRACHLORIDE	0.54	5.0	ND		UG/L	1.00
BENZENE	0.17	5.0	ND		UG/L	1.00
1,2-DICHLOROETHANE	0.50	5.0	ND		UG/L	1.00
ISOBUTYL ALCOHOL	8.0	100	ND	R	UG/L	1.00
TRICHLOROETHENE	0.26	5.0	ND		UG/L	1.00
1,2-DICHLOROPROPANE	0.24	5.0	ND		UG/L	1.00
DIBROMOMETHANE	0.39	5.0	ND		UG/L	1.00

Sample 300198-02, VOLATILES, GC/MS (8260)

VALIDATED

Page 1 of 3

Reviewed By *[Signature]*

20028

Date 5/9/96

ARDL, INC.
Rt. 15E, Mt. Vernon Airport Industrial Park
Mt. Vernon, Illinois 62864

Lab Report No: 300198

Report Date: 04/17/1996

Project Name: CANNON AFB		Analysis: VOLATILES, GC/MS (8260)			
Project No.: COMML		Analytical Method: SW8260			
		Prep Method: SW5030			
Field ID:	MWQ-D	ARDL Lab No.:	300198-02 (cont'd)		
Desc/Location:	WELL	Lab Filename:			
Sample Date:	03/21/1996	Received Date:	03/23/1996		
Sample Time:	1903	Prep. Date:	03/26/1996		
Matrix:	WATER	Analysis Date:	03/26/1996		
Amount Used:	5 mL	QC Batch:	0402LS7		
% Moisture:	NA				

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
BROMODICHLOROMETHANE	0.13	5.0	ND		UG/L	1.00
METHYLMETHACRYLATE	1.5	5.0	ND		UG/L	1.00
cis-1,3-DICHLOROPROPENE	0.40	5.0	ND		UG/L	1.00
4-METHYL-2-PENTANONE	0.79	10.0	ND		UG/L	1.00
TOLUENE	0.15	5.0	ND		UG/L	1.00
trans-1,3-DICHLOROPROPENE	0.35	5.0	ND		UG/L	1.00
1,1,2-TRICHLOROETHANE	0.49	5.0	ND		UG/L	1.00
1,2-DIBROMOETHANE	0.43	5.0	ND		UG/L	1.00
TETRACHLOROETHENE	0.27	5.0	ND		UG/L	1.00
1,3-DICHLOROPROPANE	0.31	5.0	ND		UG/L	1.00
2-HEXANONE	1.7	10.0	ND		UG/L	1.00
DIBROMOCHLOROMETHANE	0.21	5.0	ND		UG/L	1.00
CHLOROBENZENE	0.090	5.0	ND		UG/L	1.00
1,1,1,2-TETRACHLOROETHANE	0.19	5.0	ND		UG/L	1.00
ETHYLBENZENE	0.20	5.0	ND		UG/L	1.00
m & p-XYLENE	0.54	5.0	ND		UG/L	1.00
o-XYLENE	0.20	5.0	ND		UG/L	1.00
STYRENE	0.080	5.0	ND		UG/L	1.00
BROMOFORM	0.29	5.0	ND		UG/L	1.00
ISOPROPYLBENZENE	0.27	5.0	ND		UG/L	1.00
1,1,2,2-TETRACHLOROETHANE	0.44	5.0	ND		UG/L	1.00
BROMOBENZENE	0.28	5.0	ND		UG/L	1.00
1,2,3-TRICHLOROPROPANE	0.29	5.0	ND		UG/L	1.00
n-PROPYLBENZENE	0.38	5.0	ND		UG/L	1.00
2-CHLOROTOLUENE	0.28	5.0	ND		UG/L	1.00
trans-1,4-DICHLORO-2-BUTENE	3.1	5.0	ND		UG/L	1.00
4-CHLOROTOLUENE	0.16	5.0	ND		UG/L	1.00
1,3,5-TRIMETHYLBENZENE	0.23	5.0	ND		UG/L	1.00
tert-BUTYLBENZENE	0.23	5.0	ND		UG/L	1.00
1,2,4-TRIMETHYLBENZENE	0.090	5.0	ND		UG/L	1.00
sec-BUTYLBENZENE	0.40	5.0	ND		UG/L	1.00
p-ISOPROPYLTOLUENE	0.27	5.0	ND		UG/L	1.00

Sample 300198-02, VOLATILES, GC/MS (8260)

VALIDATED

Page 2 of 3

Reviewed By *Kevin G. Smith*

Date 5/2/96

20029

ARLD, INC.
 Rt. 15E, Mt. Vernon Airport Industrial Park
 Mt. Vernon, Illinois 62864

Lab Report No: 300198

Report Date: 04/17/1996

Project Name: CANNON AFB		Analysis: VOLATILES, GC/MS (8260)			
Project No.: COMML		Analytical Method: SW8260		Prep Method: SW5030	
Field ID: MWQ-D	ARLD Lab No.:	300198-02 (cont'd)			
Desc/Location: WELL	Lab Filename:				
Sample Date: 03/21/1996	Received Date:	03/23/1996			
Sample Time: 1903	Prep. Date:	03/26/1996			
Matrix: WATER	Analysis Date:	03/26/1996			
Amount Used: 5 mL	QC Batch:	0402LS7			
% Moisture: NA					

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
1,3-DICHLOROBENZENE	0.14	5.0	ND		UG/L	1.00
1,4-DICHLOROBENZENE	0.090	5.0	ND		UG/L	1.00
1,2-DICHLOROBENZENE	0.17	5.0	ND		UG/L	1.00
n-BUTYLBENZENE	0.44	5.0	ND		UG/L	1.00
1,2-DIBROMO-3-CHLOROPROPANE	1.4	10.0	ND		UG/L	1.00
1,2,4-TRICHLOROBENZENE	0.34	5.0	ND		UG/L	1.00
HEXACHLOROBUTADIENE	0.75	5.0	ND		UG/L	1.00
NAPHTHALENE	0.39	5.0	ND		UG/L	1.00
1,2,3-TRICHLOROBENZENE	0.44	5.0	ND		UG/L	1.00

SURROGATE RECOVERIES:	Limits	Results
DIBROMOFLUOROMETHANE	86-118	109%
1,2-DICHLOROETHANE-D4	80-120	92%
TOLUENE-D8	88-110	100%
4-BROMOFLUOROBENZENE	86-115	95%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

VALIDATED

Reviewed By *[Signature]*
 Date 5/7/96

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MWQ-D

Lab Name: ARDL, INC.

Contract: CANNON AFB

Lab Code: ---

Case No.: ---

SAS No.: ---

SDG No.: MWQ

Matrix: (soil/water) WATER

Lab Sample ID: 300198-02

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: >K1440

Level: (low/med) LOW

Date Received: 3/23/96

Moisture: not dec. ---

Date Analyzed: 3/26/96

Column: J&W DB-624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: --- (uL)

Soil Aliquot Volume: --- (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.76131	ETHANE, 1,1,2-TRICHLORO-1,2,	3.63	100.	JNB U
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VALIDATED 20031

FORM I VOA-TIC

Reviewed By *Sam W...* 3/90

Date 5/2/96

ARDL, INC.
Rt. 15E, Mt. Vernon Airport Industrial Park
Mt. Vernon, Illinois 62864

Lab Report No: 300198

Report Date: 04/17/1996

Project Name: CANNON AFB	Analysis: VOLATILES, GC/MS (8260)
Project No.: COMML	Analytical Method: SW8260
	Prep Method: SW5030

Field ID: MWQ-T	ARDL Lab No.: 300198-03
Desc/Location: TRIP BLANK	Lab Filename:
Sample Date: 03/11/1996	Received Date: 03/23/1996
Sample Time: 1600	Prep. Date: 03/26/1996
Matrix: WATER	Analysis Date: 03/26/1996
Amount Used: 5 mL	QC Batch: 0402LS7
% Moisture: NA	

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
DICHLORODIFLUOROMETHANE	0.92	5.0	ND		UG/L	1.00
CHLOROMETHANE	0.94	5.0	ND		UG/L	1.00
VINYL CHLORIDE	0.73	5.0	ND		UG/L	1.00
BROMOMETHANE	0.80	5.0	ND		UG/L	1.00
CHLOROETHANE	1.2	5.0	ND		UG/L	1.00
TRICHLOROFLUOROMETHANE	0.86	5.0	ND		UG/L	1.00
1,1-DICHLOROETHENE	0.67	5.0	ND		UG/L	1.00
2-PROPENAL	4.6	10.0	ND		UG/L	1.00
ACETONE	5.1	25.0	ND		UG/L	1.00
CARBON DISULFIDE	0.33	10.0	ND		UG/L	1.00
IODOMETHANE	0.73	5.0	ND		UG/L	1.00
ALLYL CHLORIDE	1.1	5.0	ND		UG/L	1.00
METHYLENE CHLORIDE	0.36	5.0	4.2	BJU	UG/L	1.00
trans-1,2-DICHLOROETHENE	0.61	5.0	ND		UG/L	1.00
ACRYLONITRILE	2.9	10.0	ND		UG/L	1.00
1,1-DICHLOROETHANE	0.31	5.0	ND		UG/L	1.00
CHLOROPRENE	0.69	5.0	ND		UG/L	1.00
VINYL ACETATE	0.37	10.0	ND		UG/L	1.00
2,2-DICHLOROPROPANE	1.7	5.0	ND		UG/L	1.00
cis-1,2-DICHLOROETHENE	0.34	5.0	ND		UG/L	1.00
2-BUTANONE	2.6	25.0	ND	J	UG/L	1.00
BROMOCHLOROMETHANE	0.37	5.0	ND		UG/L	1.00
CHLOROFORM	0.20	5.0	ND		UG/L	1.00
1,1,1-TRICHLOROETHANE	0.36	5.0	ND		UG/L	1.00
1,1-DICHLOROPROPENE	0.40	5.0	ND		UG/L	1.00
CARBON TETRACHLORIDE	0.54	5.0	ND		UG/L	1.00
BENZENE	0.17	5.0	ND		UG/L	1.00
1,2-DICHLOROETHANE	0.50	5.0	ND		UG/L	1.00
ISOBUTYL ALCOHOL	8.0	100	ND	R	UG/L	1.00
TRICHLOROETHENE	0.26	5.0	ND		UG/L	1.00
1,2-DICHLOROPROPANE	0.24	5.0	ND		UG/L	1.00
DIBROMOMETHANE	0.39	5.0	ND		UG/L	1.00

Sample 300198-03, VOLATILES, GC/MS (8260)

VALIDATED

Page 1 of 3
20039

Reviewed By *[Signature]*
Date 5/17/96

ARDL, INC.
Rt. 15E, Mt. Vernon Airport Industrial Park
Mt. Vernon, Illinois 62864

Lab Report No: 300198

Report Date: 04/17/1996

Project Name: CANNON AFB		Analysis: VOLATILES, GC/MS (8260)			
Project No.: COMML		Analytical Method: SW8260		Prep Method: SW5030	
Field ID: MWQ-T		ARDL Lab No.:	300198-03 (cont'd)		
Desc/Location: TRIP BLANK		Lab Filename:			
Sample Date: 03/11/1996		Received Date:	03/23/1996		
Sample Time: 1600		Prep. Date:	03/26/1996		
Matrix: WATER		Analysis Date:	03/26/1996		
Amount Used: 5 mL		QC Batch:	0402LS7		
% Moisture: NA					

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
1,3-DICHLOROBENZENE	0.14	5.0	ND		UG/L	1.00
1,4-DICHLOROBENZENE	0.090	5.0	ND		UG/L	1.00
1,2-DICHLOROBENZENE	0.17	5.0	ND		UG/L	1.00
n-BUTYLBENZENE	0.44	5.0	ND		UG/L	1.00
1,2-DIBROMO-3-CHLOROPROPANE	1.4	10.0	ND		UG/L	1.00
1,2,4-TRICHLOROBENZENE	0.34	5.0	ND		UG/L	1.00
HEXACHLOROBUTADIENE	0.75	5.0	ND		UG/L	1.00
NAPHTHALENE	0.39	5.0	ND		UG/L	1.00
1,2,3-TRICHLOROBENZENE	0.44	5.0	ND		UG/L	1.00

SURROGATE RECOVERIES:	Limits	Results
DIBROMOFLUOROMETHANE	86-118	105%
1,2-DICHLOROETHANE-D4	80-120	92%
TOLUENE-D8	88-110	98%
4-BROMOFLUOROBENZENE	86-115	93%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 300198-03, VOLATILES, GC/MS (8260)

VALIDATED

Reviewed By *[Signature]*

Date 5/2/96

20041

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MWQ-T

Lab Name: ARDL, INC.

Contract: CANNON AFB

Lab Code: ---

Case No.: ---

SAS No.: ---

SDG No.: MWQ

Matrix: (soil/water) WATER

Lab Sample ID: 300198-03

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: >K1441

Level: (low/med) LOW

Date Received: 3/23/96

Moisture: not dec. ---

Date Analyzed: 3/26/96

GC Column: J&W DB-624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: --- (uL)

Soil Aliquot Volume: --- (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.76131	ETHANE, 1,2,2-TRICHLORO-1,2,	3.68	110.	JNB U
2.				
3.				
4.				
5.				
6.				
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28.				
29.				
30.				

VALIDATED

Reviewed By *[Signature]* 20042
Date 5/2/96 3/90

ARDL, INC.
Rt. 15E, Mt. Vernon Airport Industrial Park
Mt. Vernon, Illinois 62864

Lab Report No: 300198

Report Date: 04/10/1996

Project Name: CANNON AFB	Analysis: POLYNUCLEAR AROMATICS, HPLC
Project No.: COMML	Analytical Method: SW8310
	Prep Method: SW3510

Field ID: MWQ-D	ARDL Lab No.: 300198-02
Desc/Location: WELL	Lab Filename:
Sample Date: 03/21/1996	Received Date: 03/23/1996
Sample Time: 1903	Prep. Date: 03/26/1996
Matrix: WATER	Analysis Date: 03/26/1996
Amount Used: 1000 mL	QC Batch: B1143
% Moisture: NA	

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
ACENAPHTHENE	0.13	18.0	ND		UG/L	1.00
ACENAPHTHYLENE	0.053	10.0	ND		UG/L	1.00
ANTHRACENE	0.21	6.6	ND	J	UG/L	1.00
BENZO(A)ANTHRACENE	0.11	0.13	ND		UG/L	1.00
BENZO(A)PYRENE	0.096	0.23	ND		UG/L	1.00
BENZO(B)FLUORANTHENE	0.17	0.18	ND		UG/L	1.00
BENZO(G,H,I)PERYLENE	0.091	0.76	ND		UG/L	1.00
BENZO(K)FLUORANTHENE	0.12	0.17	ND		UG/L	1.00
CHRYSENE	0.13	1.5	ND		UG/L	1.00
DIBENZO(A,H)ANTHRACENE	0.13	0.30	ND		UG/L	1.00
FLUORANTHENE	0.093	2.1	ND		UG/L	1.00
FLUORENE	0.31	2.1	ND		UG/L	1.00
INDENO(1,2,3-CD)PYRENE	0.070	0.43	ND		UG/L	1.00
NAPHTHALENE	0.2	10.0	ND		UG/L	1.00
PHENANTHRENE	0.12	6.4	ND		UG/L	1.00
PYRENE	0.17	2.7	ND		UG/L	1.00

SURROGATE RECOVERIES:	Limits	Results
9-PHENYLANTHRACENE	0-173	76.2%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

VALIDATED
Reviewed By *[Signature]*
Date 5/3/96

ARDL, INC.
Rt. 15E, Mt. Vernon Airport Industrial Park
Mt. Vernon, Illinois 62864

Lab Report No: 300198

Report Date: 04/09/1996

Project Name: CANNON AFB	Analysis: HERBICIDES
Project No.: COMML	Analytical Method: SW8150
	Prep Method: SW3510

Field ID: MWQ-D	ARDL Lab No.: 300198-02
Desc/Location: WELL	Lab Filename:
Sample Date: 03/21/1996	Received Date: 03/23/1996
Sample Time: 1903	Prep. Date: 03/26/1996
Matrix: WATER	Analysis Date: 03/29/1996
Amount Used: 1000 mL	QC Batch: B1150
% Moisture: NA	

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
2,4-D	0.063	0.60	ND	J	UG/L	1.00
2,4-DB	0.058	0.60	ND	↓	UG/L	1.00
2,4,5-TRICHLOROPHOXYACETIC ACID	0.068	0.60	ND	↓	UG/L	1.00
DALAPON	0.066	0.66	ND	↓	UG/L	1.00
DICAMBA	0.059	0.60	ND	↓	UG/L	1.00
DICHLORPROP	0.071	0.71	ND	↓	UG/L	1.00
DINOSEB	0.059	0.60	ND	↓	UG/L	1.00
SILVEX	0.064	0.60	ND	↓	UG/L	1.00
MCPA	35.1	350	ND	↓	UG/L	1.00
MCPP	33.0	330	ND	↓	UG/L	1.00

SURROGATE RECOVERIES:	Limits	Results
2,4-DICHLOROPHENYL ACETIC ACID	12-108	60%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

VALIDATED

Reviewed By *[Signature]*
Date 5/7/96

ARDL, Inc.

TLI Project: **36742**
 Client Sample: **300198-1**
 Client Project: **HLA**

Method 8280 PCDD/PCDF Analysis (b)
 Analysis File: **E961052**
 Matrix: **WATER**

PCDD/PCDF SUMMARY REPORT

Specific Analytes	Conc. (ppt)	DL (ppt)	Blank (ppt)	Definitions:
2,3,7,8-TCDD	ND	0.32	ND	
1,2,3,7,8-PeCDD	ND	6.4	ND	
1,2,3,4,7,8-HxCDD	ND	4	ND	
1,2,3,6,7,8-HxCDD	ND	1.4	ND	
1,2,3,7,8,9-HxCDD	ND	2	ND	
1,2,3,4,6,7,8-HpCDD	ND	4.1	ND	
1,2,3,4,6,7,8,9-OCDD	ND	4.4	ND	
2,3,7,8-TCDF	ND	0.36	ND	
1,2,3,7,8-PeCDF	ND	5.6	ND	
2,3,4,7,8-PeCDF	ND	8	ND	
1,2,3,4,7,8-HxCDF	ND J	7	ND	
1,2,3,6,7,8-HxCDF	ND	6.5	ND	
2,3,4,6,7,8-HxCDF	ND	4.2	ND	
1,2,3,7,8,9-HxCDF	ND	3.8	ND	
1,2,3,4,6,7,8-HpCDF	ND	1.4	ND	
1,2,3,4,7,8,9-HpCDF	ND	4.3	ND	
1,2,3,4,6,7,8,9-OCDF	ND	2.5	ND	

Total Analytes	Conc. (ppt)	DL (ppt)
Total TCDD	ND	0.32
Total PeCDD	ND	6.4
Total HxCDD	ND	2.47
Total HpCDD	ND	4.1
Total TCDF	ND	0.36
Total PeCDF	ND	6.8
Total HxCDF	ND	5.38
Total HpCDF	ND	2.85

VALIDATED

Reviewed By Alvin A. Harris
 Date 5/15/96



Work Authorization Number: _____

CHAIN-OF-CUSTODY RECORD

Sample Round/Episode: 1

Project Name/Project No.: Cannon Air Force Base 33364 2.4.2		Sample Date: <u>3/21/96</u>	Sample Technique: Grab	Site Identification: MWQ
Sampler: (Signature) <i>Jeffrey Minchale</i>		Sample Depth: (Ft) <u>NA</u>	File-Type/Matrix: CGW/Groundwater	Site Type: Well
TIME	TAG NO.	ANALYSIS REQUIRED	CONTAINER	PRESERVATIVE/REMARKS
<u>1903</u>	CN00001	VOCs/8260	40ml VOA vial	HCl, pH < 2, Cool 4 de
<u>1903</u>	CN00002	VOCs/8260	40ml VOA vial	HCl, pH < 2, Cool 4 de
<u>1903</u>	CN00003	VOCs/8260	40ml VOA vial	HCl, pH < 2, Cool 4 de
<u>1903</u>	CN00004	VOCs/8260	40ml VOA vial	HCl, pH < 2, Cool 4 de
<u>1903</u>	CN00005	VOCs/8260	40ml VOA vial	HCl, pH < 2, Cool 4 de
<u>1903</u>	CN00006	VOCs/8260	40ml VOA vial	HCl, pH < 2, Cool 4 de
<u>1903</u>	CN00007	VOCs/8260	40ml VOA vial	HCl, pH < 2, Cool 4 de
<u>1903</u>	CN00008	VOCs/8260	40ml VOA vial	HCl, pH < 2, Cool 4 de
<u>1903</u>	CN00009	VOCs/8260	40ml VOA vial	HCl, pH < 2, Cool 4 de
<u>1915</u>	CN00010	SVOCs/8270	1L glass, amber	Cool 4 deg C
<u>1915</u>	CN00011	SVOCs/8270	1L glass, amber	Cool 4 deg C
<u>1915</u>	CN00012	SVOCs/8270	1L glass, amber	Cool 4 deg C
<u>1940</u>	CN00013	Dioxins/8280	1L glass, amber	Cool 4 deg C
<u>1940</u>	CN00014	Dioxins/8280	1L glass, amber	Cool 4 deg C
<u>1940</u>	CN00015	Dioxins/8280	1L glass, amber	Cool 4 deg C
<u>1922</u>	CN00016	PAH/8310	1L glass, amber	Cool 4 deg C
<u>1922</u>	CN00017	PAH/8310	1L glass, amber	Cool 4 deg C
<u>1922</u>	CN00018	PAH/8310	1L glass, amber	Cool 4 deg C
<u>1930</u>	CN00019	Pesticides/PCBs/8080	1L glass, amber	Cool 4 deg C
<u>1930</u>	CN00020	Pesticides/PCBs/8080	1L glass, amber	Cool 4 deg C
<u>1930</u>	CN00021	Pesticides/PCBs/8080	1L glass, amber	Cool 4 deg C
<u>1935</u>	CN00022	Herbicides/8150	1L glass, amber	Cool 4 deg C
Relinquished by: (Signature) <i>Jeffrey D. Minchale</i>		Date/Time <u>3/22/96 1430</u>	Received by: (Signature)	
Relinquished by: (Signature)		Date/Time <u>3/23/96 1030</u>	Received by: (Signature) <i>D. L. Lukrum</i>	
Relinquished by: (Signature)		Date/Time	Received by: (Signature)	
Relinquished by: (Signature)		Date/Time	Received by: (Signature)	

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Harding Lawson Associates
 2400 Arco Tower
 707 Seventeenth Street
 Denver, Colorado 80202
 303/292-5365
 Telecopy 303/292-5411

Lab I.D.: _____

Work Authorization Number: _____

Sample Round/Episode: _____

CHAIN-OF-CUSTODY RECORD

Project Name/Project No.: Cannon Air Force Base 33364 2.4.2		Sample Date: 3/21/96	Sample Technique: Grab	Site Identification: MWQ
Sampler: (Signature) <i>Jeffrey Minchale</i>		Sample Depth: (Ft) NA	File-Type/Matrix: CGW/Groundwater	Site Type: well
TIME	TAG NO.	ANALYSIS REQUIRED	CONTAINER	PRESERVATIVE/REMARKS
1935	CN00023	Herbicides/8150	1L glass, amber	Cool 4 deg C
1935	CN00024	Herbicides/8150	1L glass, amber	Cool 4 deg C
1945	CN00025	Metals/ICP, Metals/GFAA, Mercury/CVAA	1L glass , amber poly	HNO3, pH <2
1950	CN00026	Cyanide/9012	1L poly	NaOH, pH > 12, Cool 4
1950	CN00027	Sulfide/9030	500ml poly	NAOH, pH > 9, ZnAc
1955	CN00028	TOX/9020, TOC/9060	500 mL glass, amber	H2SO4, pH < 2, Cool 4
1955	CN00029	TOX/9020, TOC/9060	500 mL glass, amber	H2SO4, pH < 2, Cool 4
1955	CN00030	TOX/9020, TOC/9060	500 mL glass, amber	H2SO4, pH < 2, Cool 4
<i>Note:</i>				
<i>MS + MSD samples to come from MWQ site identification samples.</i>				

Relinquished by: (Signature) <i>Jeffrey D. Minchale</i>	Date/Time 3/22/96 1430	Received by: (Signature)
Relinquished by: (Signature)	Date/Time 3/23/96 1030	Received by: (Signature) <i>Donna L. Cochran</i>
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)

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Harding Lawson Associates
 2400 Arco Tower
 707 Seventeenth Street
 Denver, Colorado 80202
 303/292-5365
 Telecopy 303/292-5411

Page 1 of 1
 Lab I.D.: AR - ARDL

Work Authorization Number: _____

CHAIN-OF-CUSTODY RECORD

Sample Round/Episode: 1

Project Name/Project No.:		Sample Date:	Sample Technique:	Site Identification:
Cannon Air Force Base 33364 2.4.2		3/21/96	Grab	MWQ-D
Sampler: (Signature)		Sample Depth: (Ft)	File-Type/Matrix:	Site Type:
<i>Jeffrey Minchak</i>		NA	CGW/Groundwater	Well
TIME	TAG NO.	ANALYSIS REQUIRED	CONTAINER	PRESERVATIVE/REMARKS
1903	CN00050	VOCs/8260	40ml VOA vial	HCl, pH < 2, Cool 4 de
1903	CN00051	VOCs/8260	40ml VOA vial	HCl, pH < 2, Cool 4 de
1903	CN00052	VOCs/8260	40ml VOA vial	HCl, pH < 2, Cool 4 de
1915	CN00053	SVOCs/8270	1L glass, amber	Cool 4 deg C
1940	CN00054	Dioxins/8280	1L glass, amber	Cool 4 deg C
1922	CN00055	PAH/8310	1L glass, amber	Cool 4 deg C
1930	CN00056	Pesticides/PCBs/8080	1L glass, amber	Cool 4 deg C
1935	CN00057	Herbicides/8150	1L glass, amber	Cool 4 deg C
1945	CN00058	Metals/ICP, Metals/GFAA, Mercury/CVAA	1L glass, amber	HNO3, pH <2
1950	CN00059	Cyanide/9012	1L poly	NaOH, pH > 12, Cool 4
1950	CN00060	Sulfide/9030	500ml poly	NAOH, pH > 9, ZnAc
Relinquished by: (Signature)		Date/Time	Received by: (Signature)	
<i>Jeffrey D. Minchak</i>		3/22/96 1430		
Relinquished by: (Signature)		Date/Time	Received by: (Signature)	
		3/23/96 1030	<i>Danna Beckum</i>	
Relinquished by: (Signature)		Date/Time	Received by: (Signature)	
Relinquished by: (Signature)		Date/Time	Received by: (Signature)	
Airbill Number <u>752321 7634 Federal Express</u>				

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Appendix III

**CASE NARRATIVES FOR GROUNDWATER SAMPLES
COLLECTED MARCH 21, 1996**

ORGANIC ANALYSIS DATA PACKAGE

Harding Lawson Associates

Date: 4/26/96

Lab Name: ARDL, Inc.

ARDL Report No.: 300198

Samples Received at ARDL: 03/23/96

Project Name: Cannon AFB

CASE NARRATIVE

VOLATILE FRACTION - METHOD 8260

Three (3) water samples were received by ARDL, Inc. on March 23, 1996, for VOA analysis by GC/MS. All analyses were performed according to low level protocol.

The initial calibration dated March 12, 1996, is a combination of two (2) initial calibrations. The calibration file contains response factors from January 15, 1996, for the standard 8260 analyte list and response factors from March 12, 1996, for the Appendix 9 compounds requested in this analysis. The calibration date appearing on the form is the last date an update was made.

A separate initial calibration was performed for the compound chloroprene. As explained in the vendor supplied data, chloroprene polymerizes rapidly and is available only as a qualitative solution in mixed xylenes. Because xylenes are target compounds, the separate calibration was implemented.

Although the B qualifier is not a requirement for IRPIMS, it has been added to the hardcopy data.

No other unusual problems were encountered during the sample analyses.

SEMIVOLATILE FRACTION - METHOD 8270

Two (2) water samples were received by ARDL, Inc. on March 23, 1996, for BNA analysis by GC/MS. All analyses were performed according to low level protocol.

Two of the target analytes requested were not possible in this analysis. 1,4-Phenylenediamine was attempted in several spiked blanks, with no recovery. As stated in the method, the other compound, diphenylamine, cannot be separated chromatographically from another target analyte, N-Nitroso-diphenylamine.

No other unusual problems were encountered during the sample analyses.

ORGANIC ANALYSIS DATA PACKAGE

Harding Lawson Associates

Date: 4/19/96

Lab Name: ARDL, Inc.

ARDL Report No.: 300198

Samples Received at ARDL: 03/23/96

Project Name: Cannon AFB

CASE NARRATIVE (Continued)

PESTICIDE/PCB FRACTION - METHOD 8080

Two (2) water samples were received by ARDL, Inc. on March 23, 1996, for Pesticide/PCB analysis. The samples were extracted and concentrated per SW-846.

No additional problems were encountered in the analyses of these samples.

HERBICIDE FRACTION - METHOD 8150

Two (2) water samples were received by ARDL, Inc. on March 23, 1996, for Herbicide analysis. The samples were extracted and concentrated per SW-846.

Recoveries of 2,4-D in the MS/MSD samples and 2,4-D and silvex in the spike blank samples were outside QC limits. An independent QC standard verified the calibration curve by yielding acceptable results. Surrogate recoveries of all samples were within control limits. Due to lack of sample remaining, re-extraction and reanalysis of the samples could not be performed.

No additional problems were encountered in the analyses of these samples.

POLYNUCLEAR AROMATIC HYDROCARBONS FRACTION - METHOD 8310

Two (2) water samples were received by ARDL, Inc. on March 23, 1996, for PNA analysis. The samples were extracted and concentrated per SW-846.

Recoveries of dibenzo(a,h)anthracene and benzo(g,h,i)perylene were high in the MS/MSD and spike blank samples. This is believed to be due to a difference in lot preparation of standards used for calibration and those used for spiking. These target analytes were not identified in the sample. No further analysis were performed.

No additional problems were encountered in the analyses of these samples.

20007

ORGANIC ANALYSIS DATA PACKAGE

arding Lawson Associates

Date: 4/19/96

ab Name: ARDL, Inc.

RDL Report No.: 300198

Samples Received at ARDL: 03/23/96

roject Name: Cannon AFB

CASE NARRATIVE (Continued)

ORGANIC DATA REPORTING QUALIFIERS

he following organic data reporting qualifiers are used as required.

- Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.
- Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.
- Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- This flag applies to pesticide results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, do not apply this flag, instead use a laboratory-defined flag.
- This flag is used when the analyte is found in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag must be used for a TIC as well as for a positively identified target compound.

ORGANIC ANALYSIS DATA PACKAGE

Harding Lawson Associates

Date: 4/19/96

Lab Name: ARDL, Inc.

ARDL Report No.: 300198

Samples Received at ARDL: 03/23/96

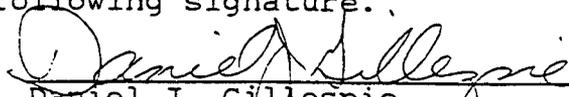
Project Name: Cannon AFB

CASE NARRATIVE (Continued)

ORGANIC DATA REPORTING QUALIFIERS (Continued)

- E - This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. If one or more compounds have a response greater than full scale, except as noted in Exhibit D, the sample or extract must be diluted and re-analyzed according to the specifications in Exhibit D. All such compounds with a response greater than full scale should have the concentration flagged with an "E" on the Form 1 for the original analysis. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses shall be reported on separate copies of Form 1. The Form 1 for the diluted sample shall have the "DL" suffix appended to the sample number.
- D - This flag identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form 1 for the diluted sample, and all concentration values reported on that Form 1 are flagged with the "D" flag.
- A - This flag indicates that a TIC is a suspected aldol-condensation product.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized for the Laboratory Manager or his designee, as verified by the following signature.


Daniel J. Gillespie
Technical Services Manager

20009

INORGANIC ANALYSIS DATA PACKAGE

Harding Lawson Associates

Date: 04/04/96
ARDL Report No.: 300198

Lab Name: ARDL, Inc.

Samples Received at ARDL: 03/23/96

Project Name: Cannon AFB

CASE NARRATIVE

<u>Sample ID No.</u>	<u>Date Collected</u>	<u>Lab ID No.</u>	<u>Analysis Requested</u>
MWQ	03/21/96	300198-1	Total Metals(1), Cyanide, Sulfide, TOC, TOX
MWQ-D	03/21/96	300198-2	Total Metals(1), Cyanide, Sulfide

(1) Including aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium and zinc.

NOTE: Due to sample volume limitations after preliminary evaluations of 300198-1 for sulfide, insufficient sample quantity remained for further analysis at the appropriate dilution to reduce the matrix interferences.

The quality control data are summarized as follows:

LABORATORY CONTROL SAMPLES

Percent recovery of all LCS analyses were within control limits.

MATRIX SPIKES

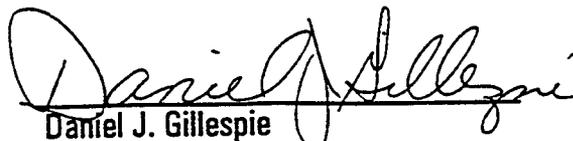
Percent recovery of all matrix spikes and matrix spike duplicates except 1 of 2 for cyanide were within control limits.

DUPLICATES

RPD on all duplicate analyses were within control limits.

All duplicate analyses are reported as MS/MSD.

Release of the data contained in this package has been authorized by the Technical Services Manager or his designee as verified by the following signature.


Daniel J. Gillespie
Technical Services Manager

10001

TRIANGLE LABS

CASE NARRATIVE

**Analysis of Samples for the Presence of
Polychlorinated Dibenzo-*p*-Dioxins and Dibenzofurans by
High-Resolution Chromatography / Low-Resolution Mass Spectrometry**

Method 8280 Rev. 0 (9/86)

Date: April 15, 1996
Client ID: ARDL, Inc.
P.O. Number:
TLI Project Number: 36742

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Rev. 06/21/95

Triangle Laboratories, Inc.
801 Capitola Drive
Durham, NC 27713-4411
919-544-5729
P.O. Box 13485
Research Triangle Park, NC 27709-3485
Fax # 919-544-5491

Overview

The samples and any associated QC samples were extracted and analyzed according to procedures described in EPA Method 8280. Any particular difficulties encountered during the sample handling by Triangle Laboratories will be discussed in the QC Remarks section below. Results reported relate only to the items tested.

Sample Extraction

The water samples have been separatory funnel extracted with methylene chloride to produce a final extract. Eighty percent of the extract was archived while twenty percent was processed through the cleanup procedures.

The cleanup of extracts may include the use of bulk acid/base washes, and acid silica, basic silica, activated alumina, and carbon column liquid chromatography.

Sample Analysis

A five point initial calibration curve was analyzed, in triplicate, on each instrument used for sample analysis. Calibration ranges are listed below and are based on sample size. A continuing calibration check and a column performance evaluation are analyzed at the beginning of each twelve hour period of sample analysis. The column performance solution, which is used to evaluate the GC resolution is also performed at the end of each twelve hour analytical sequence.

Calibration Ranges

<u>Compounds</u>	<u>Solid</u> (10 g sample)	<u>Water</u> (1 L sample)	
	<u>ppb</u> ($\mu\text{g}/\text{Kg}$)	<u>ppt</u> (ng/L)	<u>ppb</u> ($\mu\text{g}/\text{L}$)
TCDD/TCDF PeCDD/PeCDF	1-20	10-200	0.01-0.2
HxCDD/HxCDF HpCDD/HpCDF	2.5-50	25-500	0.025-0.5
OCDD/OCDF	5-100	50-1000	0.05-1.0

Some of the labeled standards used in the analysis have ion fragments with the same mass as the quantitation mass of some of the analytes. These lower mass fragments appear as peaks or 'breakthrough' in the analyte channels. This can often be witnessed in the cases of $^{13}\text{C}_{12}$ -TCDF internal standard appearing in the TCDD analyte channels, $^{13}\text{C}_{12}$ -HxCDD internal and recovery standards appearing the HpCDF analyte channels, and $^{13}\text{C}_{12}$ -HpCDF internal standard appearing the HpCDD analyte channels. For most of the above situations, the interfering peaks due to the labeled standards lie outside the retention time window of the analyte. In the case of TCDD/TCDF, the interferences usually lie within the retention time window. Whenever breakthrough peaks occur from the labeled standards, these peaks are reported as EMPCs, and may be considered artifacts from the labeled standards. This is a limitation caused by the use of low-resolution mass spectrometry, recommended in the method.

Quality Control Samples

A laboratory method blank, identified as the TLI Water Blank, was prepared along with the samples. One such sample per 20 field samples (or less) of a given matrix is prepared.

Matrix spike (MS) and matrix spike duplicate (MSD) samples were created using sample 300198-1. The matrix spike samples were extracted and analyzed along with the samples. A report summarizing the analyte recoveries and relative percent differences

The advisory quality control range for internal and clean-up standard percent recoveries is 40-120 percent recovery (25-120 for the OCDD internal standard). If recoveries are below the advisory range, analyte results are judged to be valid as long as the ratio of signal to noise for the standard is greater than ten to one and the percent recovery is greater than ten percent.

Quality Control Remarks

This release of this particular set of ARDL, Inc. analytical data by Triangle Laboratories was authorized by the Quality Control Chemist who has reviewed each sample data package individually following a series of inspections/reviews. When applicable, general deviations from acceptable QC requirements are identified below and comments are made on the effect of these deviations upon the validity and reliability of the results. Specific QC issues associated with this particular project are:

Sample receipt: Two water samples were received from ARDL, Inc. at 2 °C in good condition March 27, 1996 and were stored in a refrigerator at 4°C until the time of extraction.

Sample Preparation Laboratory: None

Mass Spectrometry: None

Data Review: Analyte recoveries and relative percent differences in the Matrix Spike and Matrix Spike Duplicate samples are within QC criteria.

The internal and cleanup standards for these samples are within the QC advisory limits of 40-120 percent (25-120 percent for the OCDD internal standard) or meet ten to one signal to noise criteria in all cases.

Other Comments: No 2,3,7,8-substituted target analytes were detected in the TLI Blank above the method detection limit (MDL).

Sample Calculations:

Method 8280 does not specify which of the two monitored masses to use for quantitation of all of the isotope-labeled standards. Following the pattern established by the method, we have selected which mass to use for each analyte and standard based on the theoretical ratio. For groups with theoretical ratios that are greater than one (the pentas, hexas and heptas), the first monitored mass should be larger and is therefore used for quantitation. For channels with theoretical ratios of less than one (the tetras and octas), the second monitored mass should generally be larger and is used for quantitation.

Analyte Concentration

The concentration or amount of any analyte is calculated using the following expression.

$$C_{(\sigma)} = \frac{A_{\sigma} * Q_{\beta}}{A_{\beta} * RRF_{(\sigma)} * W}$$

Where:

$C_{(\sigma)}$ is the concentration or amount of a given analyte,

A_{σ} is the integrated ion current of the quantitation ion of the analyte,

A_{β} is the integrated ion current of the quantitation ion of the corresponding internal standard,

Q_{β} represents the amount of internal standard added to the sample before extraction,

$RRF_{(\sigma)}$ is the analyte relative response factor from the continuing calibration and,

W is the sample weight or volume

Detection Limits

The detection limit reported for a target analyte was derived from a method validation study performed by Triangle Laboratories, Inc. The reported detection limit has been adjusted for each sample using the actual sample size extracted and any dilution factors associated with that sample analysis.

Data Flags

In order to assist with data interpretation, data qualifier flags are used on the final reports. Please note that all data qualifier flags are subjective and are applied as consistently as possible. Each flag has been reviewed by two independent Chemists and the impact of the data qualifier flag on the quality of the data discussed above. The most commonly used flags are:

A 'B' flag is used to indicate that an analyte has been detected in the laboratory method blank as well as in an associated field sample. The 'B' flag will be used only when the concentration of analyte found in the sample is less than 20 times that found in the associated blank. This flag denotes possible contribution of background laboratory contamination to the concentration or amount of that analyte detected in the field sample. Under Triangle Laboratories guidelines, a laboratory blank is acceptable if the analyte levels are all below the target detection limits (TDLS) or if the contamination levels are less than 5% of the levels detected in the associated field samples. If these conditions are satisfied or if the blank is unable to be reextracted, the interpretation of the contamination levels relative to the samples should be as follows: 1) analyte quantitations should be considered valid if the level of blank contamination is less than five percent of the level detected in the field sample, 2) analyte quantitations should be considered estimated if the analyte level in the sample is five to twenty times the level of the analyte in the blank, or 3) analytes whose level in a sample is the same as or less than five times the level detected in the associated blank should be considered present likely due to laboratory contamination and not native to the sample.

An 'E' flag is used to indicate that a PCDF peak has eluted at the same time as the associated diphenyl ether (DPE) and that the DPE peak intensity is ten percent or more of the total PCDF peak intensity. Total PCDF values are flagged 'E' if the total DPE contribution to the total PCDF value is greater than ten percent. All PCDF peaks that are significantly influenced by the presence of DPE peaks are quantitated with EMPC values, regardless of the isotopic abundance ratio. These EMPC values are most likely overestimated due to the DPE contribution to the peak area.

An 'I' flag is used to indicate labeled standards have been interfered with on the GC column by coeluting, interferent peaks. The interference may have caused the standard's area to be overestimated. All quantitations relative to this standard, therefore, may be underestimated.

A 'PR' flag is used to indicate that a GC peak is poorly resolved. This resolution problem may be seen as two closely eluting peaks without a reasonable valley between the peak tops, overly broad peaks, or peaks whose shapes vary greatly from a normal distribution. The concentrations or amounts reported for such peaks are most likely overestimated.

An 'RO' flag is used to indicate that a labeled standard has an ion abundance ratio that is outside of the acceptable QC limits, most likely due to a coeluting interference. This may have caused the percent recovery of the standard to be overestimated. All quantitations versus this standard, therefore, may be underestimated.

An 'S' flag indicates that the response of a specific PCDD/PCDF isomer has exceeded the normal dynamic range of the mass spectrometer detection system. The corresponding signal is saturated and the reported analyte concentration is a 'minimum estimate'. When the 'S' qualifier is used in the reporting of 'totals', there is saturation of one (not necessarily from a specific isomer) or more saturated signals for a given class of compounds.

A 'U' flag is used to indicate that a specific isomer cannot be resolved from a large, co-eluting interferent GC peak. The specific isomer is reported as not detected as a valid concentration cannot be determined. The calculated detection limit, therefore, should be considered an underestimated value.

A 'V' flag is used to indicate that, although the percent recovery of a labeled standard may be below a specific QC limit, the signal-to-noise ratio of the peak is greater than ten-to-one. The standard is considered reliably quantifiable. All quantitations derived from the standard are considered valid as well.

The value reported for 'EMPCs' represents the estimated maximum possible concentration reported for GC/MS peaks eluting within the retention time windows established by the daily GC performance analysis, and which are characterized by a signal to noise ratio in excess of 2.5 to 1, but which do not meet the ion abundance ratio criteria. The 'EMPC' is calculated by using the same expression used for reporting the identified analyte concentrations. An EMPC can be reported for a non-detected specific isomers (e.g. 2,3,7,8-TCDD) but can also be reported for 'totals' (e.g. Total TCDD) in which case the 'total' EMPC represents the sum of all the positively identified PCDD/PCDF peaks and of the peaks that do not meet all the identification criteria.

By our interpretation, the analytical data in this project are valid based on the guidelines of EPA Method 8280. Any specific QC concerns or problems have been discussed in the QC Remarks section of this case narrative with emphasis on their affect on the data. Should ARDL, Inc. have any questions or comments regarding this data package, please feel free to contact our Project Scientist Nancy Bragg, at 919/544-5729 ext. 267.

For Triangle Laboratories, Inc.,

Report Preparation

Bracha Rosenberg

Bracha Rosenberg
Report Preparation Chemist

Quality Control

Rose West 4-15-96

Rose West
Report Preparation Chemist

The total number of pages in the data package is : _____ .

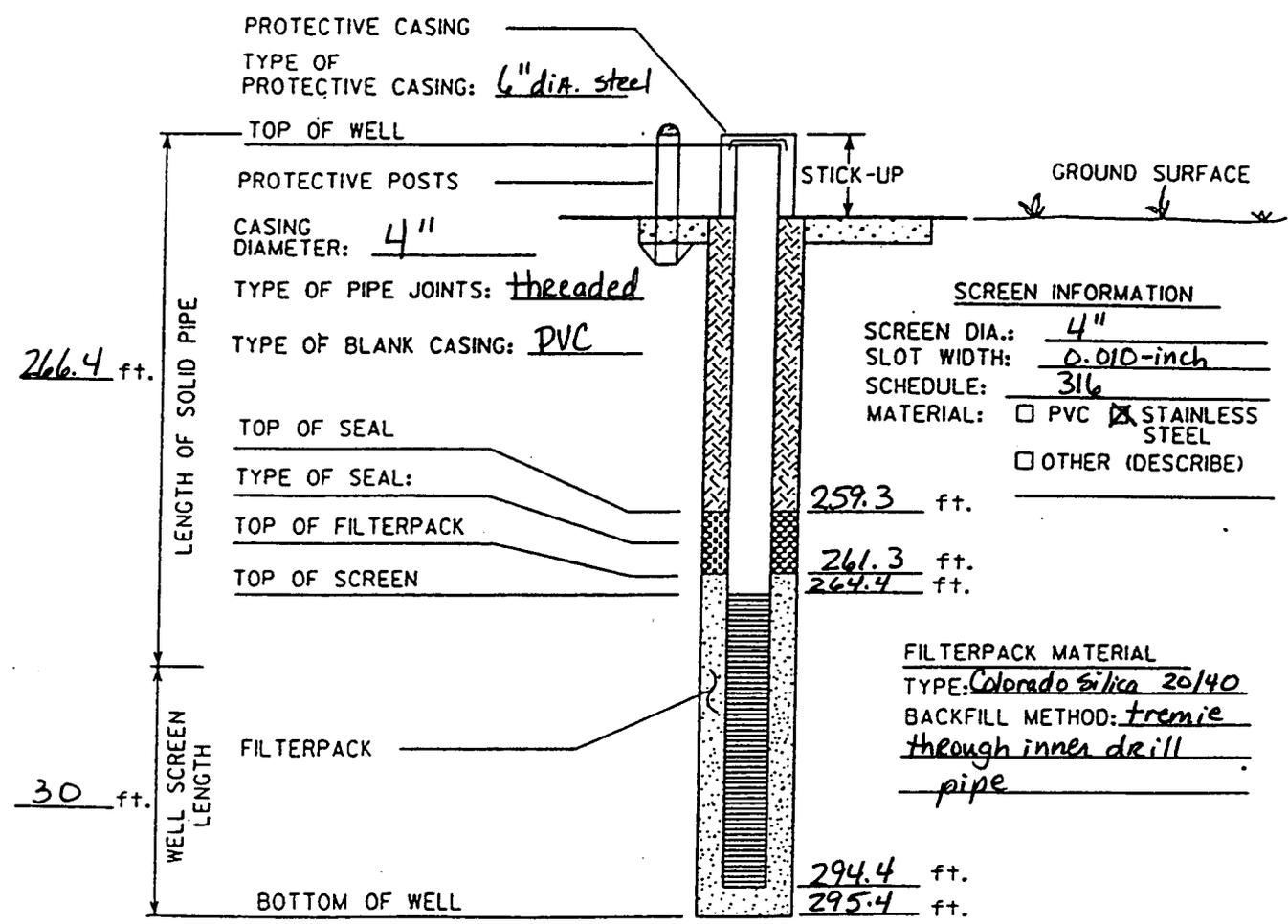
Appendix IV

**MONITORING WELL CONSTRUCTION DIAGRAM, WELL DEVELOPMENT LOG,
GROUNDWATER SAMPLING FORM, AND SURVEY DATA FOR MONITORING WELL Q**

ELEVATION GROUND WATER			PROJECT <u>Cannon AFB, Landfill No. 5 Monitoring Wells</u>
DATE INSTALLED <u>2/23/96 - 2/24/96</u>	STARTED <u>0750</u>	COMPLETED <u>1130</u>	LOCATION (Coordinates or Station) <u>±10' NE of existing well MW-A</u>
ELEVATION TOP OF HOLE			SIGNATURE OF INSPECTOR <u>Jeffrey Minchak</u>
TOTAL DEPTH OF HOLE <u>297</u> <u>formation collapsed to ± 295.4' bgs.</u>			HOLE NO. <u>MW-Q</u>

MONITORING WELL CONSTRUCTION DIAGRAM

(ALL MEASUREMENTS FROM GROUND SURFACE)



WELL DEVELOPMENT

METHOD: Bailing
 TIME SPENT DEVELOPING: 4 hours
 VOLUME OF WATER REMOVED: 70.5 gallons
 VOLUME OF WATER ADDED: 0
 DESCRIPTION OF PREDEVELOPMENT WATER:
light brown color, no odor
 DESCRIPTION OF POST DEVELOPMENT WATER:
very light brown color, no odor

WATER LEVEL SUMMARY

WATER LEVEL MEASUREMENTS

DATE/TIME/LEVEL	<u>2/24/96 1410</u>	<u>274.05</u>
	<u>2/26/96 1515</u>	<u>274.10</u>
	<u>2/27/96 1340</u>	<u>274.22</u>
	<u>1900</u>	

DEPTH FROM TOP CASING AFTER DEVELOPMENT:
274.22

Well Development Log

Date: 2126146 2127196
 Site Geologist: Jeff MINCHALL
 Checked by: _____

Well Number: MW-Q
 Pump Type: GRANDES JETSONS 3/4 HP
 Serial No.: 20' X 1" PVC bailer

	Before	Reference Point	After
Depth to water (ft.)	274.10	TOC	274.22
Depth to sediment (ft.)	0.0 275.10	TOC	N/A

Thickness of sediment (ft.) 0 295.40
 Depth of well (ft.) 296.40'
 Radius of casing (ft.) (r) 1.95" 1.94" / .16'
 Water column height (ft.) (h) = 22.3'
 Radius of boring (ft.) (R) = .375'
 Water level after 24 hrs. (ft.) = _____

Casing volume (gals.) = $\pi r^2 (h) (7.48 \text{ gals/ft.}^3) = \underline{13.7 \text{ gals}}$
 0.3 saturated annulus (gals.) = $0.3 (\pi R^2 h - \pi r^2 h) (7.48 \text{ gals/ft.}^3) = \underline{18 \text{ gal}}$
 Casing volume + 0.3 saturated annulus + drilling water + construction water = 31.7 = WV
 Total volume purged = $WV \times 5 = \underline{159}$ (gals.)

Time	pH ¹	Turbidity ² N.T.U.	Temp. °C ³	Conductivity ⁴ (umhos)	Pump Rate (gpm)	Vol. of Water Removed (gal.)	Physical Characteristics
15:00	6.67	297	17.5	760	0.25	0.25	NOODLE / LIGHT BROWN
15:35	7.16	254	16.0	748	0.50	4	"
15:55	7.35	946	16.3	728		9.5	"
16:10	7.54	599	17.1	722		15.5	"
16:27	7.72	491	17.0	716		22.5	"
16:45	7.02	372	16.1	745		28	"
17:05	7.21	268	16.4	734		35	"
17:20	7.26	254	16.4	743		40.5	"
17:35	7.33	225	16.4	741		46.5	"

Comments: BAIL with 2" SS BAILED / then 20' 1" PVC = 1.5 gal / BAILER
 Drilling water (gals.) = _____
 Construction water (gals.) = _____

Stabilization Criteria

¹ 3 consecutive measurements within 0.2 of each other
² Less than 5 N.T.U.
³ 3 consecutive measurements within 1° C of each other
⁴ 3 consecutive measurements within 10% of each other

Well Development Log

Page 1 of 2

Date: 2/27/96
 Site Geologist: Jeffrey Michak
 Checked by: _____

Well Number: MW-Q
 Pump Type: 20' x 1" PVC bailer
 Serial No.: _____

	Before	Reference Point	After
Depth to water (ft.)	274.10	TOC	274.22
Depth to sediment (ft.)			

Thickness of sediment (ft.) 0
 Depth of well (ft.) 296.40
 Radius of casing (ft.) (r) 1.94" = 0.16'
 Water column height (ft.) (h) = 22.3
 Radius of boring (ft.) (R) = 0.375'
 Water level after 24 hrs. (ft.) = _____

Casing volume (gals.) = $\pi(r)^2(h)(7.48 \text{ gals/ft.}^3)$ = _____
 0.3 saturated annulus (gals.) = $0.3(\pi R^2 h - \pi r^2 h)(7.48 \text{ gals/ft.}^3)$ = _____
 Casing volume + 0.3 saturated annulus + drilling water + construction water = _____ = *WV*
 Total volume pumped = $WV \times 5$ = _____ (gals.)

Time	pH ¹	Turbidity ² N.T.U.	Temp. °C ³	Conductivity ⁴ (umhos)	Pump Rate (gpm)	Vol. of Water Removed (gal.)	Physical Characteristics
1800	7.51	266	14.7	774	0.50	50.5	Under / Light brown ↓
1812	7.56	221	15.7	727		55.0	
1826	7.67	220	15.0	749		60.5	
1839	7.69	209	15.1	740		65.0	
1850	7.90	188	14.8	751	↓	70.5	

Comments: Bailed well MW-Q for 4 hours. Bailing was continuous and readings were collected ≈ every 5 gallons.
Development was deemed complete after 4 hours.

Drilling water (gals.) = _____
 Construction water (gals.) = _____

- Stabilization Criteria
- ¹ 3 consecutive measurements within 0.2 of each other
 - ² Less than 5 N.T.U.
 - ³ 3 consecutive measurements within 1° C of each other
 - ⁴ 3 consecutive measurements within 10% of each other



Harding Lawson Associates
Engineering and
Environmental Services

GROUND WATER SAMPLING FORM

Page 1 of 2

Job Name Cannon AFB
Job Number 33364, 2.4.1
Recorded by Jeffrey Minchale
(Signature)

Well No. MW-Q
Well Type: Monitor Extraction Other
Well Material: PVC St. Steel Other
Date 3/21/96 Time 1750
Sampled by JM + LS
(Initials)

Casing Diameter (D in inches):
 2-inch 4-inch 6-inch Other
Total Depth of Casing (TD in feet BTOC): 296
Water Level Depth (WL in feet BTOC): 274.20
Number of Well Volumes to be purged (# Vols)
 3 4 5 10 Other

Bailer - Type:
 Submersible Centrifugal Bladder; Pump No.:
 Other - Type: Pneumatic, Bennett pump
 Near Bottom Near Top Other mid-water column
Depth in feet (BTOC): 285' Screen Interval in Feet (BTOC)
from 264 to 294

$$\left(\frac{296}{\text{TD (feet)}} - \frac{274.20}{\text{WL (feet)}} \right) \times \frac{4}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{42}{\text{Calculated Purge Volume}} \text{ gallons}$$

1750 Start 1900 Stop 1:10 Elapsed Initial 1 gpm Final 1 gpm 60 gallons

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T °C	T °F	Other	Redox
5 gals	6.63	500	6.0	18.8	7.06	17.7
15 gals	7.07	500	5.6	18.6	16.07	-7.0
20	7.14	500	7.0	20.2	13.53	-12.3
25	7.21	480	6.2	19.4	9.20	-16.3
30	7.18	500	6.8	20.0	6.41	-14.5

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T °C	T °F	Other	Redox
35	7.29	500	7.2	19.9	5.13	-21.5
40	7.27	500	7.2	19.0	3.88	-19.5
45	7.26	500	7.4	18.9	2.13	-19.7
50	7.30	500	7.6	19.5	2.24	-21.7
Meter Nos.						

Observations During Purging (Well Condition, Turbidity, Color, Odor):

Discharge Water Disposal: Sanitary Sewer Storm Sewer Other 300 gallon poly Tank

Same As Above
 Bailer - Type:
 Submersible Centrifugal Bladder; Pump No.:
 Grab - Type:
 Other - Type:

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments

Duplicate Samples		Blank Samples		Other Samples	
Original Sample No.	Duplicate Sample No.	Type	Sample No.	Type	Sample No.



Harding Lawson Associates
Engineering and
Environmental Services

GROUND WATER SAMPLING FORM

Well No. MW-Q Page 2 of 2
 Well Type: Monitor Extraction Other
 Well Material: PVC St. Steel Other
 Date 3/21/96 Time 1750
 Sampled by JM + LS. (Initials)

Job Name Cannon AFB
 Job Number 33364, 24.1
 Recorded by Jeffrey Minchak (Signature)

Casing Diameter (D in inches):
 2-inch 4-inch 6-inch Other _____
 Total Depth of Casing (TD in feet BTOC): _____
 Water Level Depth (WL in feet BTOC): _____
 Number of Well Volumes to be purged (# Vols)
 3 4 5 10 Other _____

Bailer - Type: _____
 Submersible Centrifugal Bladder; Pump No.: _____
 Other - Type: _____

Near Bottom Near Top Other _____
 Depth in feet (BTOC): _____ Screen Interval in Feet (BTOC)
 from _____ to _____

(-) X X X 0.0408 = _____ gallons
 (TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume)

Start _____ Stop _____ Elapsed _____ Initial _____ gpm Final _____ gpm _____ gallons

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T <input checked="" type="checkbox"/> °C <input type="checkbox"/> °F	Other
55 gals	7.35	500	7.6	18.8
60 gals	7.36	500	7.8	18.6

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T <input type="checkbox"/> °C <input type="checkbox"/> °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor): _____

Discharge Water Disposal: Sanitary Sewer Storm Sewer Other _____

Same As Above
 Bailer - Type: _____ Grab - Type: _____
 Submersible Centrifugal Bladder; Pump No.: _____ Other - Type: _____

Sample Series: _____

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments

Duplicate Samples

Blank Samples

Other Samples

Original Sample No.	Duplicate Sample No.

Type	Sample No.

Type	Sample No.



PETTIGREW and ASSOCIATES

1110 N. GRIMES
HOBBS, NEW MEXICO 88240
(505) 393-9827

DEBRA P. HICKS, P.E.
WILLIAM M. HICKS, III, P.E.
RICHARD R. PETTIGREW, P.E.-P.S.

10 April, 1996

Harding Lawson Associates
Suite 2400
707 Seventeenth Street
Denver, CO 80202

RECEIVED
APR 12 1996

HLA

ATTN: S. Michelle Beekman

RE: Cannon AFB
Survey of Monitoring Well Q and Abandoned Well Location
HLA Project No. 33364 2.1.2

Dear Michelle:

In accordance with the above referred Subcontract, **PETTIGREW and ASSOCIATES, P.A.** has performed field surveys to determine the following data:

TABLE 1

Location	X	Y	PVC	Grd. Elev.	Top of Conc. Pad
MW-Q	809,342.66	1,228,234.10	4266.89	4264.7	4264.8
Aban. Well	810,495.88	1,225,952.17	N/A	4264.8	4264.9

A drawing of the points relative to Landfill No. 5 showing control data is attached, as well as the key to MW-Q. Should you have any questions regarding this transmittal, please contact this office.

Sincerely,

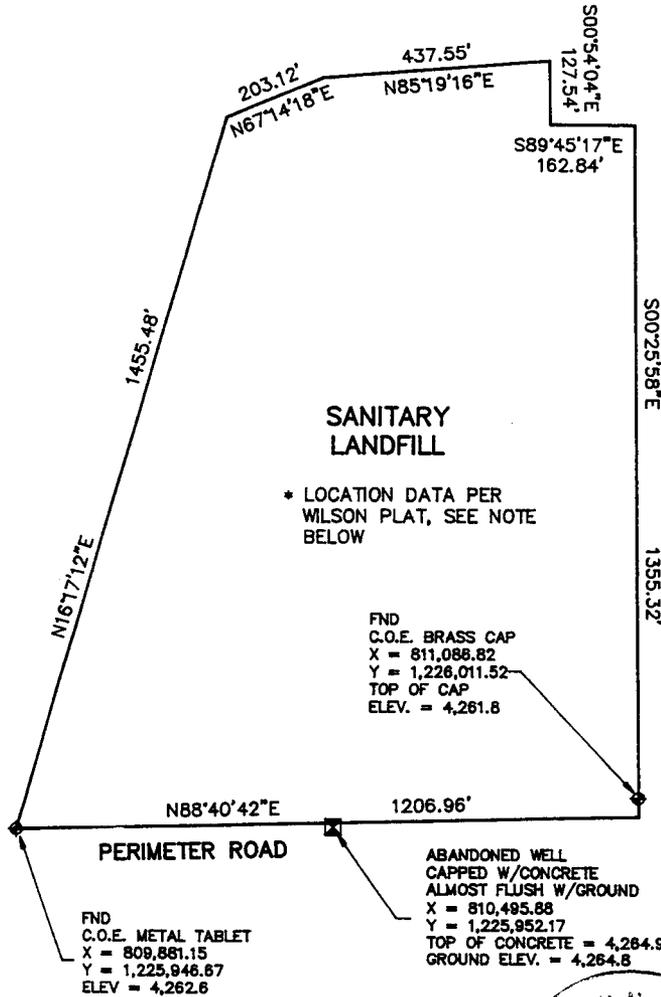
PETTIGREW and ASSOCIATES, P.A.

Debra P. Hicks, PE/LSI
Manager of Engineering

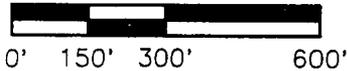
Attachments
xc: Jeanne Reedy

CANNON AIR FORCE BASE

MONITOR WELL "Q"
 X = 809,342.66
 Y = 1,228,234.10
 TOP OF OUTER CASING = 4,267.77
 TOP OF INNER CASING = 4,266.89
 CONCRETE PAD = 4,264.8
 GROUND ELEV. = 4,264.7



SCALE 1" = 300'

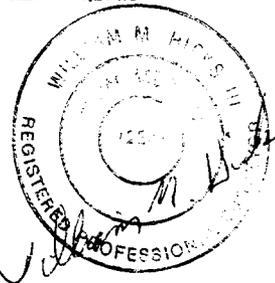


"THIS IS NOT A BOUNDARY SURVEY"

COORDINATES ARE BASED ON NAD 1927.
 ELEVATIONS ARE BASED ON NGVD 1929.
 HORIZONTAL AND VERTICAL DATUM AND
 LANDFILL LOCATION INFORMATION ARE
 AS PER PLAT BY WILSON SURVEYING Co.,
 INC. TITLED "SANITARY LANDFILL SITE
 No. 5, CELL LOCATIONS" DATED SEPT. 10, 1992.

LEGEND

- ☒ MONITOR WELL LOCATION
- ◆ FOUND C.O.E. MONUMENTS



PETTIGREW AND ASSOCIATES

1110 N. GRIMES HOBBS, N.M. 88240
 (505) 393-9827

TOPOGRAPHIC SURVEY FOR
**MONITOR WELL LOCATIONS FOR
 HARDING LAWSON ASSOC.**

REV	DATE	DESCRIPTION
0	4-10-96	ORIGINAL PLAT
1	4-96	DATE OF SURVEY

PROJ. No. 96.1053	DRN BY: B. BLACK
DWG D: \HARD-LAW\MON-WELL.DWG	
BOOK CLOVIS #6	SHT. 1 OF 1

INDEXING INFORMATION
 FOR COUNTY CLERK

OWNER: C.A.F.B.
 LOC: SE COR OF BASE