CAFB02

DEPARTMENT OF THE AIR FORCE
27TH CIVIL ENGINEER SQUADRON (ACC)
CANNON AIR FORCE BASE NEW MEXICO

ENTERED

27 FEB 2002

HSWA CAFB Landfill 5

Major Christopher G. Duffy
Commander
506 N DL Ingram Blvd
Cannon AFB NM 88103-5323

Mr. James Bearzi, Chief
Hazardous Waste Bureau
New Mexico Environment Department
2044 Galisteo Street
PO Box 26110
Santa Fe NM 87502

Dear Mr. Bearzi

Enclosed for your review and records are the final semi-annual groundwater monitoring reports for CY 2001 sampling at Monitoring Wells(MW) B, C, D, Q, S, T and U at Landfill No. 5 (SWMU 113), and Monitoring Wells E, G and H at the Sewage Lagoons (SWMU 101) at Cannon Air Force Base. New Mexico Environment Department (NMED) groundwater standards were used to determine if constituents detected in the monitorings wells exceeded applicable groundwater standards. If no NMED standard for a particular constituent was available, the US Environmental Protection Agency (EPA) groundwater Maximum Contaminant Limits or EPA Health Advisories were applied. In cases where NMED and EPA have established separate and different standards for the same constituent, the most stringent standard was applied for purposes of comparison.

The contaminants of concern in these reports are lead, pesticides, trichloroethene and carbon disulfide. Lead exceeded the Maximum Contaminant Level Goal (MCLG) for drinking water in wells MW-B and MW-E at the sewage lagoons during the March sampling event, and at MW-F during the August sampling event. The elevated lead levels in all three wells are consistent with previous sampling and concentrations are decreasing over time. Low concentrations of pesticides were also detected in MW-F during the August sampling event, and the analytes detected are all used as an insecticide for seed furrow treatment or termite control. A crop duster was observed in the area during sampling and this may have contributed to the detection. At MW-C in Landfill No. 5, trichloroethene was detected, but well below the USEPA MCL drinking-water standard. Again, this reading was consistent with previous sampling at this well. There was a detection of carbon disulfide from MW-S, but this should be taken with caution because the associated trip blank also detected this analyte at a similar level.

The results of the CY 2001 long term monitoring sampling events provide no indication that any release from Landfills No. 5 or the Sewage Lagoons has impacted groundwater. If you have any questions, please contact Mr. Denny Timmons of my staff at (505)784-4639.

Sincerely

Christopher G. Duffy

CHRISTOPHER G. DUFFY, Major, USAF

cc:
NMED (G. von Gonten)
NMED w/o enclosure (J. Jacobs)
EPA Region VI w/o enclosure (D. Neleigh)
EPA Region VI (B. Sturdivant)

LIBRARY COPY

Cannon Air Force Base, New Mexico

RCRA Ground-Water Monitoring at Sewage Lagoons and at Landfill 5

Analytical Results of Samples Collected March 20-22, 2001

Prepared for

United States Air Force Air Combat Command
Cannon Air Force Base

October 2001

CONTENTS

Page

Executive summary 1

Figure 1. Location of Cannon Air Force Base, New Mexico 4

Figure 2. Cannon Air Force Base and location of sewage lagoons and Landfill 5 5

Figure 3. Location of monitoring wells around the sewage lagoons 6

Figure 4. Location of monitoring wells around Landfill 5 7

Table 1. Summary of concentrations of analytes in ground water from monitoring wells E, G, and H for samples collected March 22, 2001, at the sewage lagoons, Cannon Air Force Base, New Mexico 8

Table 2. Summary of concentrations of analytes in ground water from monitoring wells B, C, D, Q, S, T, and U for samples collected March 20-22, 2001, at Landfill 5, Cannon Air Force Base, New Mexico 9

Monitoring well identification reports 13

Monitoring well semi-annual and annual sampling reports 23

APPENDIX I

Analytical Results from Severn Trent Services Laboratory for Ground-Water Samples Collected March 20, 2001

Severn Trent Services Report No. D1C210269 (Well S) I-1

Volatile organics I-8

Semivolatile organics I-14

Page

APPENDIX I--Continued

Analytical Results from Severn Trent Services Laboratory for Ground-Water Samples Collected March 20, 2001

Pesticides and PCB's I-19

Herbicides I-21

Polynuclear aromatic hydrocarbons I-22

Dioxins and Furans I-23

Total metals I-24

General chemistry I-26

APPENDIX II

Analytical Results from Severn Trent Services Laboratory for Ground-Water Samples Collected March 21, 2001

Severn Trent Services Report No. D1C220263 (Wells B, C, D, T, and U) II-1

Volatile organics II-9

Semivolatile organics II-33

Pesticides and PCB's II-60

Herbicides II-72

Polynuclear aromatic hydrocarbons II-78

Dioxins and Furans II-84

Total metals II-90

General chemistry II-102

APPENDIX III

Analytical Results from Severn Trent Services Laboratory for Ground-Water Samples Collected March 22, 2001

Severn Trent Services Report No. D1C230236 (Wells E, G, H and Q)..... III-1

Volatile organics..... III-8

Semivolatile organics..... III-26

Pesticides and PCB's..... III-31

Herbicides..... III-39

Polynuclear aromatic hydrocarbons..... III-40

Dioxins and Furans..... III-41

Total metals..... III-42

General chemistry..... III-50

APPENDIX IV

Laboratory Quality Assurance / Quality Control Results

Laboratory data validation checklist for D1C210269, D1C220263 and D1C230236..... IV-1

DODEC laboratory data review worksheet for D1C210269..... IV-50

Severn Trent Report No. D1C210269 quality control summary..... IV-53

U.S. Geological Survey, Water Resources Division, New Mexico District analytical request / chain of custody..... IV-117

Severn Trent sample receiving checklist..... IV-118

Page

APPENDIX I--Continued

Laboratory Quality Assurance / Quality Control Results

DODEC laboratory data review worksheet for D1C220263..... IV-119

Severn Trent No. D1C220263 quality control summary..... IV-123

U.S. Geological Survey, Water Resources Division, New Mexico
District analytical request / chain of custody..... IV-208

Severn Trent sample receiving checklist..... IV-216

DODEC laboratory data review worksheet for D1C 230236..... IV-217

Severn Trent No. D1C230236 quality control summary..... IV-221

U.S. Geological Survey, Water Resources Division, New Mexico
District analytical request / chain of custody..... IV-291

Severn Trent sample receiving checklists..... IV-293

APPENDIX V

Field Data

Sample container and preservation requirements..... V-1

Field notes..... V-3

Field methods..... V-15

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 Resource Conservation and Recovery Act (RCRA) ground-water sampling program. Cannon AFB is located in east-central New Mexico about 6 miles west of Clovis, as shown in figure 1. The ground-water sampling is at the sewage lagoons and at Landfill 5 on the east side and southeast corner of the base, as shown in figure 2. Annual sampling is conducted at the sewage lagoons (fig. 3). Detection sampling is conducted semiannually at Landfill 5 (fig. 4) as part of the July 13, 1990, Compliance Agreement between CAFB and the New Mexico Environment Department (NMED).

This report presents the water-quality data for samples collected from three wells around the sewage lagoons and seven wells around Landfill 5, CAFB, on March 20-22, 2001. The monitoring wells sampled at the sewage lagoons are upgradient well E and downgradient wells G and H. Downgradient well F at the sewage lagoons is also normally sampled at this time. Due to the decline in the water table in the area, the water lavel in well F was below the pump intake and a sample could not be collected. The hose system for well F will be extended and a sample will be collected at a later date. Wells E, G, and H were sampled for the following Appendix IX parameters: volatile organic compounds (VOC's) by method SW8260B; pesticides and PCB's by methods SW8081A and SW8082; total metals (aluminum, barium, beryllium, calcium, cobalt, copper, iron, magnesium, manganese, molybdenum, nickel, potassium, sodium, tin, vanadium, and zinc) by method SW6010B; antimony, arsenic, cadmium, chromium, lead, selenium, silver, and thallium by method SW6020; and mercury by method SW7470A; sulfate by method MCAWW300.0A; sulfide by method SW9030B/ 9034; nitrate/nitrite by method MCAWW353.2/ 354.1; and total dissolved solids by method MCAWW160.1. Well H was also sampled for perchlorate by method EPA 314.0.

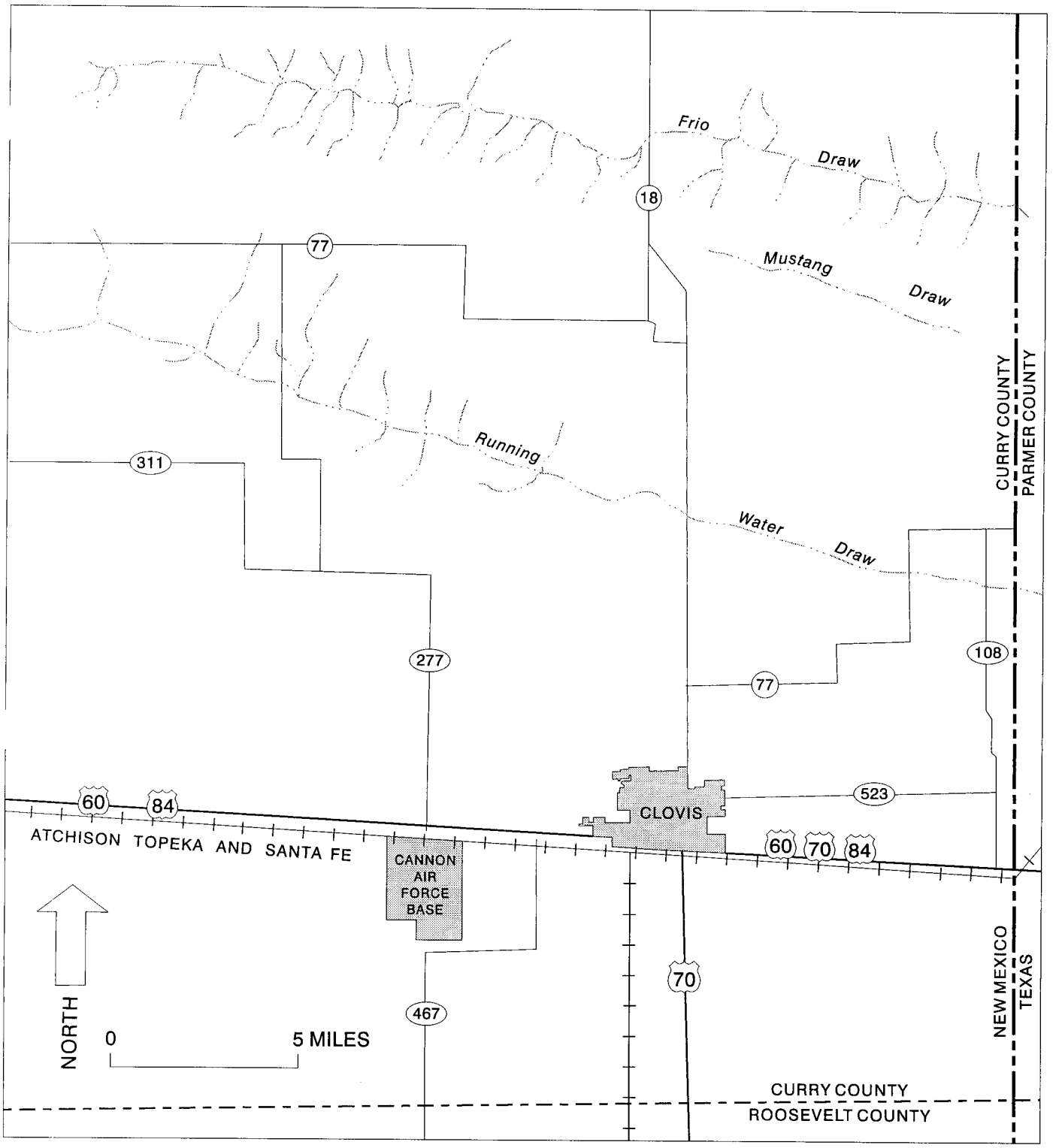
The monitoring wells sampled at Landfill 5 are downgradient wells B, C, D, S, T, and U, and upgradient well Q, as shown in figure 4. These wells were sampled for the following Appendix IX parameters: VOC's by method SW8260B; semivolatile organic compounds by method SW8270C; dioxins and furans by method SW8280; polynuclear aromatic hydrocarbons by method SW8310; pesticides and PCB's by methods SW8081A and SW8082; herbicides by method SW8151A; total metals (aluminum, barium, beryllium, calcium, cobalt, copper, iron, magnesium,

manganese, molybdenum, nickel, potassium, sodium, tin, vanadium, and zinc) by SW6010; antimony, arsenic, cadmium, chromium, lead, selenium, silver, and thallium by SW6020; and mercury by SW7470A); and general chemistry (cyanide by SW9012A, sulfide by SW9030B/ 9034, total organic carbon (TOC) by SW9060, and total organic halogens (TOX) by SW9020B). Wells Q, S, T, and U, were also sampled for perchlorate by method EPA 314.0.

Concentrations of analytes detected in ground water from wells at the sewage lagoons are presented in table 1. Only those concentrations detected above the reporting limits are discussed in this summary. Barium was detected in water samples from wells E, G, and H at concentrations of 51.8, 30.3, and 30.3 μg/L, respectively. The USEPA MCL standard for barium is 2,000 μg/L. Chromium was detected in water samples from all three wells at concentrations ranging from 3.4 μg/L (well G) to 12.0 μg/L (well E). The USEPA MCL drinking-water standard for chromium is 100 μg/L. Lead was detected in a water sample from well E at a concentration of 5.4 μg/L. The USEPA maximum contaminant level goal (SMCLG) standard for lead is zero. Selenium was detected in water samples from wells E, G, and H at concentrations of 5.2, 6.2, and 6.7 μg/L, respectively. The USEPA MCL standard for selenium is 50.0 μg/L. Zinc was detected in a water sample from well H at a concentration of 53.3 μg/L. The USEPA SMCL standard for zinc is 5,000 μg/L. Sulfate was detected in all three wells at concentrations ranging from 81.1 μg/L (well E) to 169 μg/L (well G). The USEPA MCL standard for sulfate is 500,000 μg/L.

Concentrations of analytes detected in ground water from wells at Landfill 5 are presented in table 2. Trichloroethene was detected in a water sample from well C and D at concentrations of 1.8 μg/L and 1.1 μg/L, respectively. The USEPA MCL drinking-water standard for trichloroethene is 5 μg/L. Barium was detected in water samples from all seven wells at concentrations ranging from 26.6 μg/L (well Q) to 80.0 μg/L (well D). Chromium was detected in water samples from all seven wells at concentrations ranging from 1.6 μg/L (well D), to 40.0 μg/L (well Q). Iron was detected in wells B, Q, and T at concentrations ranging from 158 μg/L (well T) to 479 μg/L (well Q). Lead was detected in a water sample from well B at a concentration of 1.0 μg/L. Manganese was detected in the water samples from wells B and Q, at concentrations of 23.5 μg/L and 13.9 μg/L, respectively. The USEPA SMCL standard for manganese is 50 μg/L. Selenium was detected in water samples from wells B, Q, S, T, and U at concentrations ranging from 6.4 μg/L (well Q) to 8.4 μg/L (well T). Zinc was detected in a water sample from well S, at a concentration of 26.9 μg/L.

As part of the quality assurance and quality control (QA/QC) procedures for the sewage lagoons and Landfill 5 sites, three trip blanks, one field duplicate samples, one pair of matrix spike, and matrix spike duplicate samples were collected. No target parameters were detected above reporting limits in the trip blanks. All the sample cooler temperatures upon receipt by the laboratory were under the EPA's recommendation of 6.0 degrees Celsius.



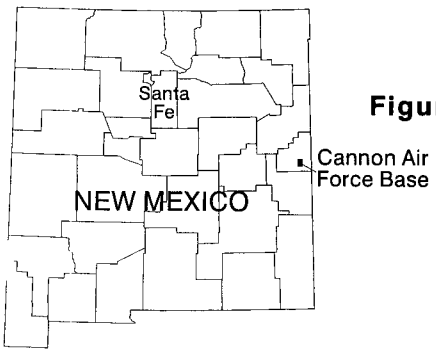


Figure 1. Location of Cannon Air Force Base, New Mexico.

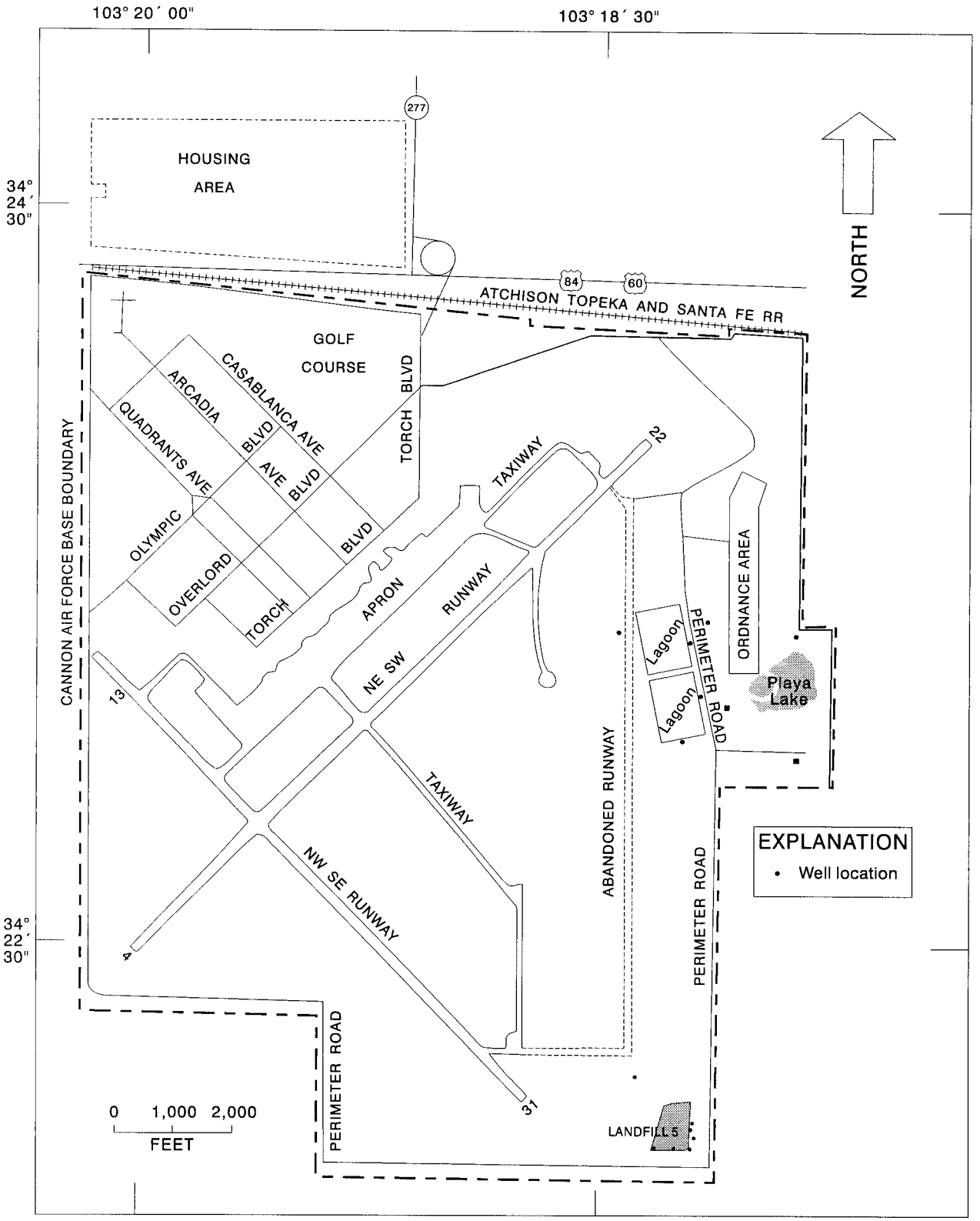


Figure 2. Cannon Air Force Base and location of sewage lagoons and Landfill 5.

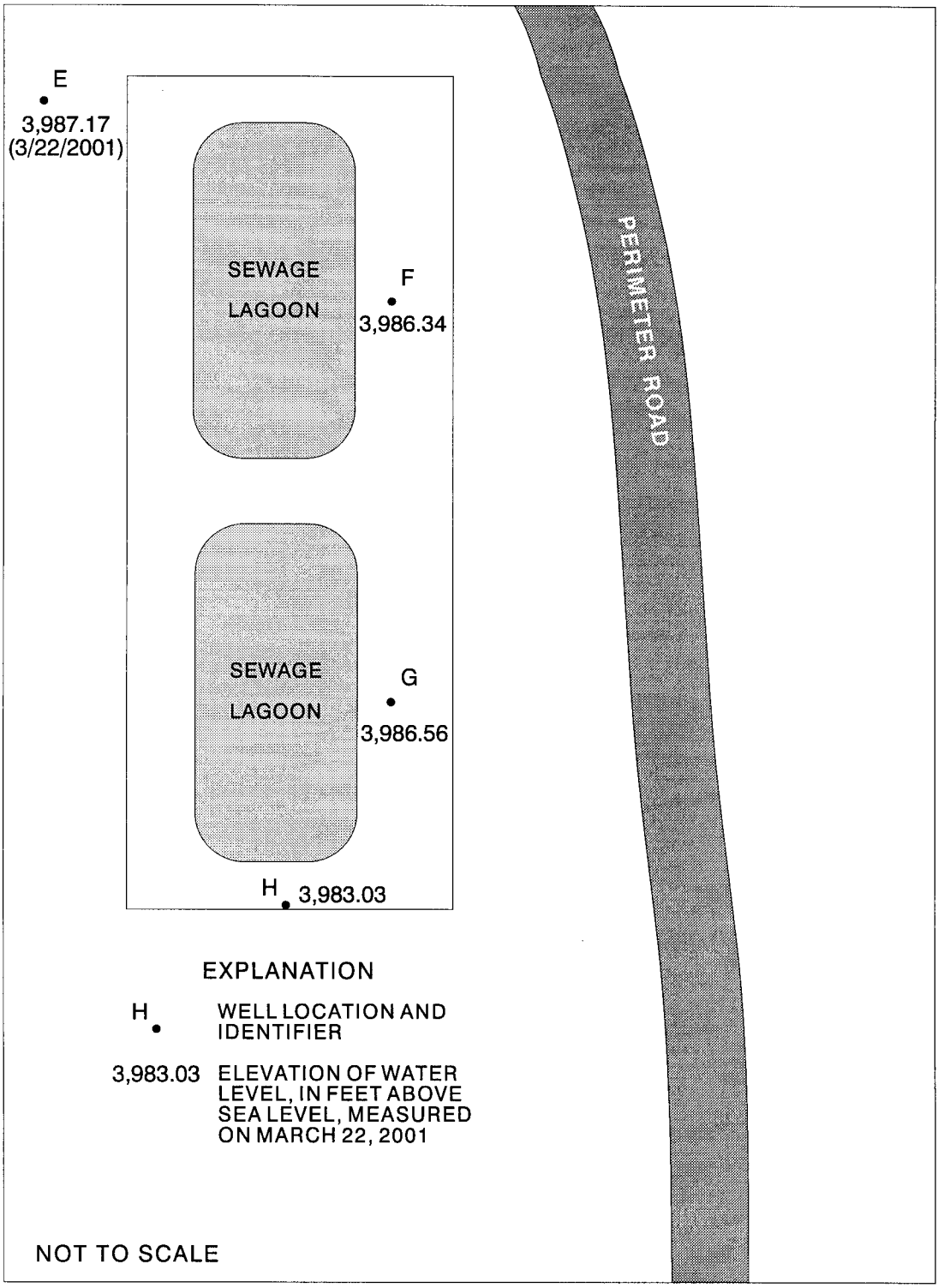


Figure 3. Location of monitoring wells around the sewage lagoons.

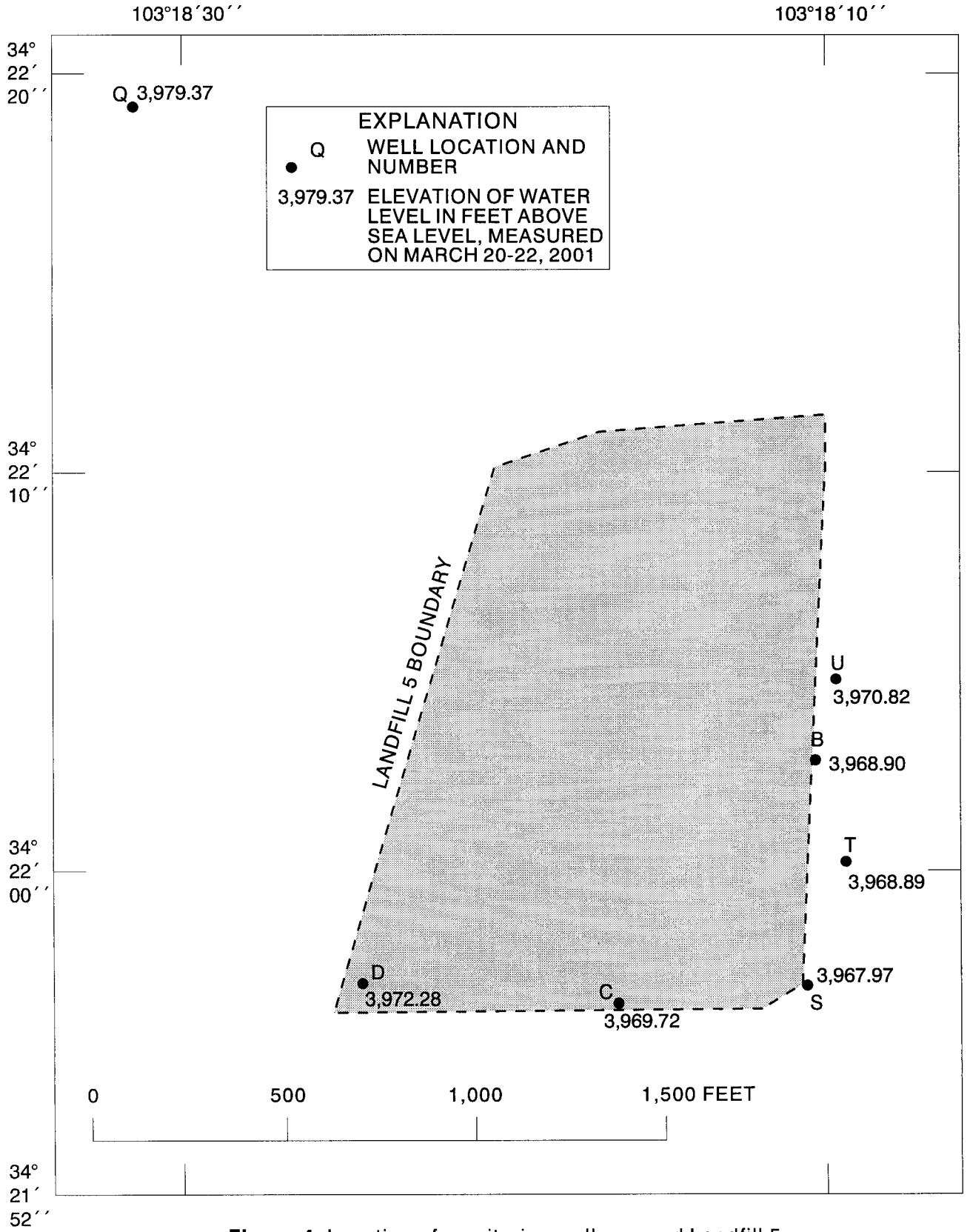


Figure 4. Location of monitoring wells around Landfill 5.

Table 1.--Summary of concentrations of analytes in ground water from monitoring wells E, G, and H for samples collected March 22, 2001 at the Sewage Lagoons, Cannon Air Force Base, New Mexico

[RL, reporting limit; µg/L, micrograms per liter; ND, not detected; J or B, result is detected below the reporting limit or is an estimated concentration; mg/L, milligrams per liter; MCAWW, methods for chemical analysis of water and wastes; Q, reporting limit is elevated due to high analyte levels]

Well/sample ID: Date sampled:		E/CAFB-E 3-22-2001		G/CAFB-G 3-22-2001		H/CAFB-H 3-22-2001	
Analytes and Methods		Result	RL	Result	RL	Result	RL
Appendix-IX Volatile organics, SW8260B, (µg/L)							
Tetrachloroethene		ND	1.0	ND	1.0	ND	1.0
Trichloroethene		ND	1.0	ND	1.0	ND	1.0
Metals, Total (µg/L)							
Aluminum	SW6010B	107	100	82.6 B	100	111	100
Arsenic	Sw6010B	3.1 B	5.0	3.0 B	5.0	3.4 B	1.0
Barium	SW6010B	51.2	10.0	30.3	10.0	30.3	10.0
Calcium	SW6010B	47,300	200	59,000	200	43,500	200
Chromium	SW6020	12.0	1.0	3.4	1.0	3.5	1.0
Iron	SW6010B	84.0 B	100	86.7 B	100	54.3 B	100
Lead	SW6020	5.4	1.0	0.65 B	1.0	0.38 B	1.0
Magnesium	SW6010B	43,500	200	56,900	200	40,400	200
Manganese	SW6010B	2.0 B	10	0.92 B	10	1.1 B	100
Potassium	SW6010B	6,700	5,000	7,610	5,000	6,630	5,000
Selenium	SW6020	5.2 B	5.0	6.2	5.0	6.7	5.0
Sodium	SW6010B	60,300	5,000	57,200	5,000	57,900	5,000
Vanadium	SW6010B	18.0	10.0	17.1	10.0	19.4	10.0
Zinc	SW6010B	7.0 B	20.0	15.9 B	20.0	53.3	20.0
General Inorganics (mg/L)							
Sulfate	MCAWW300.0A	81.1 Q	25.0	169 Q	25.0	126 Q	25.0
Nitrate	MCAWW353.2	1.4	0.10	5.6 Q	0.10	1.3	0.10
Total Dissolved Solids, MCAWW160.1		503	10.0	627	10.0	468	10.0

Table 2.--Summary of concentrations of analytes in ground water from monitoring wells CAFB-B, C, D, Q, S, T, and U for samples collected March 20-22, 2001, at Landfill 5, Cannon Air Force Base, New Mexico

[RL, reporting limit; µg/L, micrograms per liter; ND, not detected; J or B, result was detected below the reporting limit or is an estimated concentration.

Well/sample ID: Date sampled:	B/CAFB-B 3-21-2001		C/CAFB-C 3-21-2001		D/CAFB-D 3-21-2001		Q/CAFB-Q 3-22-2001		S/CAFB-S 3-20-2001	
Analytes and Methods	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Appendix-IX Volatiles, SW8260B (µg/L)										
Dichlorodifluoroethane	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0
Trichloroethene	ND	1.0	1.8	1.0	1.1	1.0	ND	1.0	ND	1.0
Trichlorofluoromethane	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0
Metals, Total (µg/L)										
Aluminum, SW6010B	87.2 B	100	26.6 B	100	ND	100	87.2 B	100	51.0 B	100
Arsenic, SW6010	5.4	5.0	6.2	5.0	4.9 B	5.0	5.3	5.0	4.7 B	5.0
Barium, SW6010B	37.9	10.0	34.5	10.0	80.0	10.0	26.6	10.0	35.6	10.0
Calcium, SW6010B	43,200	200	31,400	200	31,900	200	43,800	200	43,300	200
Chromium, SW6020	3.3	1.0	2.0	1.0	1.6	1.0	40.5	1.0	2.1	1.0
Copper, SW6010B	3.5 B	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0
Iron, SW6010B	430	100	19.2 B	100	35.1 B	100	479	100	45.5 B	100
Lead, SW6020	1.0	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0
Magnesium, SW6010B	40,800	200	30,700	200	5,980	200	40,800	200	41,500	200
Manganese, SW6010B	23.5	10.0	ND	10.0	ND	10.0	13.9	10.0	2.7 B	10.0
Molybdenium, SW6010B	4.7 B	20.0	5.6 B	20.0	4.0 B	20.0	3.8 B	20.0	3.8 B	20.0
Nickel, SW6010B	ND	40.0	ND	40.0	ND	40.0	90.5	40.0	ND	40.0
Potassium, SW6010B	6,410	3000	5,170	3000	5,290	3000	5,960	3000	6,490	3000

Table 2.--Summary of concentrations of analytes in ground water from monitoring wells CAFB-B, C, D, Q, S, T, and U for samples collected March 20-22, 2001, at Landfill 5, Cannon Air Force Base, New Mexico

Well/sample ID: Date sampled:	B/CAFB-B 3-21-2001		C/CAFB-C 3-21-2001		D/CAFB-D 3-21-20001		Q/CAFB-Q 3-22-2001		S/CAFB-S 3-20-2001	
Analytes and Methods	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Metals, Total (µg/L)										
Selenium, SW6020	6.7	5.0	1.6 B	5.0	ND	5.0	6.4	5.0	6.5	5.0
Sodium, SW6010B	58,000	5,000	47,600	5,000	46,500	5,000	51,500	5,000	49,800	5,000
Vanadium, SW6010B	29.2	10.0	40.6	10.0	38.8	10.0	27.2	10.0	29.3	10.0
Zinc, SW6010B	8.4 B	20.0	ND	20.0	3.6 B	20.0	3.5B	20.0	26.9	20.0
General Chemistry										
Perchlorate (µg/L), EPA314	ND	20.0	ND	20.0	ND	20.0	5.8 B	20.0	ND	20.0
Total Organic Carbon (mg/L), SW9060	ND	1.0	ND	1.0	ND	1.0	0.39 B	1.0	0.40 B	1.0
Total Sulfide (mg/L), SW9030B/9034	ND	4.0	0.56 B	4.0	ND	4.0	ND	4.0	ND	4.0

Table 2.--Summary of concentrations of analytes in ground water from monitoring wells CAFB-B, C, D, Q, S, T, and U for samples collected March 20-22, 2001, at Landfill 5, Cannon Air Force Base, New Mexico

[RL, reporting limit; µg/L, micrograms per liter; ND, not detected; J or B, result was detected below the reporting limit or is an estimated concentration.

Well/sample ID: Date sampled:	T/CAFB-T 3-21-2001		T/CAFB-TT 3-21-2001 Duplicate		U/CAFB-U 3-21-2001			
Analytes and Methods	Result	RL	Result	RL	Result	RL	Result	RL
Appendix-IX Volatiles, SW8260B (µg/L)								
Dichlorodifluoroethane	ND	1.0	ND	1.0	0.41 J	1.0		
Trichloroethene	ND	1.0	ND	1.0	ND	1.0		
Trichlorofluoromethane	ND	1.0	ND	1.0	0.57 J	1.0		
Metals, Total (µg/L)								
Aluminum, SW6010B	83.2 B	100	70.7 B	100	103	100		
Arsenic, SW6010	4.9 B	5.0	4.8 B	5.0	4.2 B	5.0		
Barium, SW6010B	35.4	10.0	35.2	10.0	36.8	10.0		
Calcium, SW6010B	47,800	200	46,500	200	47,000	200		
Chromium, SW6020	3.5	1.0	3.8	1.0	2.7	1.0		
Copper, SW6010B	ND	1.0	ND	1.0	ND	1.0		
Iron, SW6010B	158	100	148	100	79.3 B	100		
Lead, SW6020	ND	1.0	ND	1.0	ND	1.0		
Magnesium, SW6010B	44,200	200	43,100	200	36,800	200		
Manganese, SW6010B	3.2 B	10.0	3.1 B	10.0	3.1 B	10.0		
Molybdenium, SW6010B	4.6 B	20.0	52,900	20.0	3.9 B	20.0		
Nickel, SW6010B	ND	40.0	25.0	40.0	ND	40.0		
Potassium, SW6010B	6,180	3000	ND	3000	6,300	3000		

Table 2.--Summary of concentrations of analytes in ground water from monitoring wells CAFB-B, C, D, Q, S, T, and U for samples collected March 20-22, 2001, at Landfill 5, Cannon Air Force Base, New Mexico

Well/sample ID: Date sampled:	T/CAFB-T 3-21-2000		T/CAFB-TT 3-21-2001 Duplicate		U/CAFB-U 3-21-2001			
Analytes and Methods	Result	RL	Result	RL	Result	RL	Result	RL
Metals, Total (µg/L)								
Selenium, SW6020	8.4	5.0	9.9	5.0	7.1	5.0		
Sodium, SW6010B	54,400	5,000	52600	5,000	53,500	5,000		
Vanadium, SW6010B	28.4	10.0	27.6	10.0	25.6	10.0		
Zinc, SW6010B	17.9 B	20.0	13.8 B	20.0	14.1 B	20.0		
General Chemistry								
Perchlorate (µg/L), EPA314	19.9 B	20.0	ND	20.0	ND	20.0		
Total Organic Carbon (mg/L), SW9060	ND	1.0	ND	1.0	ND	1.0		
Total Sulfide (mg/L), SW9030B/9034	0.61 B	4.0	0.58 B	4.0	0.64 B	4.0		

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS AND 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 B -- Landfill-5

WELL LOCATION (LONGITUDE) 103 ° 18 ' 10 "

WELL LOCATION (LATITUDE) 34 ° 22 ' 03 "

AQUIFER NAME Ogallala

AQUIFER CONFINED _____ UNCONFINED X

WELL INSTALLATION DATE 11-30-1984

DRILLING METHOD HYDRT

INNER CASING DIAMETER 4 inches

BOREHOLE DIAMETER 8 inches

CASING MATERIAL PVC

METHOD OF DEVELOPMENT AIRFT

ELEV BOTTOM OF BOREHOLE 3903.11 feet above MSL

ELEV BOTTOM OF WELL CASING 3903.11 feet above MSL

ELEV BOTTOM OF SCREENED INT 3903.11 feet above MSL

ELEV OF TOP OF SCREENED INT 3918.11 feet above MSL

SURVEYED ELEV OF CASING TOP 4265.41 feet above MSL

DATE OF REPORT 10-22-01 SIGNATURE _____

NAME (TYPED) Fredrick E. Gebhardt

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS AND 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 C -- Landfill-5

WELL LOCATION (LONGITUDE) 103° 18' 08.3"

WELL LOCATION (LATITUDE) 34° 21' 56.8"

AQUIFER NAME Ogalalla

AQUIFER CONFINED _____ UNCONFINED X

WELL INSTALLATION DATE 01-11-1985

DRILLING METHOD HYDRT

INNER CASING DIAMETER 4 inches

BOREHOLE DIAMETER 8 inches

CASING MATERIAL PVC

METHOD OF DEVELOPMENT AIRFT

ELEV BOTTOM OF BOREHOLE 3905.90 feet above MSL

ELEV BOTTOM OF WELL CASING 3905.90 feet above MSL

ELEV BOTTOM OF SCREENED INT 3905.90 feet above MSL

ELEV OF TOP OF SCREENED INT 3920.90 feet above MSL

SURVEYED ELEV OF CASING TOP 4267.90 feet above MSL

DATE OF REPORT 10-22-01 SIGNATURE _____

NAME (TYPED) Fredrick E. Gebhardt

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS AND 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 D -- Landfill-5

WELL LOCATION (LONGITUDE) 103 ° 18 ' 17 "

WELL LOCATION (LATITUDE) 34 ° 21 ' 57 "

AQUIFER NAME Ogallala

AQUIFER CONFINED _____ UNCONFINED X

WELL INSTALLATION DATE 12-16-1984

DRILLING METHOD HYDRT

INNER CASING DIAMETER 4 inches

BOREHOLE DIAMETER 8 inches

CASING MATERIAL PVC

METHOD OF DEVELOPMENT AIRFT

ELEV BOTTOM OF BOREHOLE 3909.15 feet above MSL

ELEV BOTTOM OF WELL CASING 3909.15 feet above MSL

ELEV BOTTOM OF SCREENED INT 3909.15 feet above MSL

ELEV OF TOP OF SCREENED INT 3924.15 feet above MSL

SURVEYED ELEV OF CASING TOP 4265.90 feet above MSL

DATE OF REPORT 10-22-01 SIGNATURE _____

NAME (TYPED) Fredrick E. Gebhardt

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS AND 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 -- Sewage Lagoons

WELL LOCATION (LONGITUDE) 103° 18' 24.5"

WELL LOCATION (LATITUDE) 34° 23' 28.8"

AQUIFER NAME Ogalalla

AQUIFER CONFINED _____ UNCONFINED X

WELL INSTALLATION DATE 11-17-1985

DRILLING METHOD HYDRT

INNER CASING DIAMETER 4 inches

BOREHOLE DIAMETER 8 inches

CASING MATERIAL PVC

METHOD OF DEVELOPMENT AIRFT

ELEV BOTTOM OF BOREHOLE 3908.12 feet above MSL

ELEV BOTTOM OF WELL CASING 3911.12 feet above MSL

ELEV BOTTOM OF SCREENED INT 3911.12 feet above MSL

ELEV OF TOP OF SCREENED INT 3926.12 feet above MSL

SURVEYED ELEV OF CASING TOP 4281.12 feet above MSL

DATE OF REPORT 10-22-01 SIGNATURE _____

NAME (TYPED) Fredrick E. Gebhardt

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS AND 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 G -- Sewage Lagoons

WELL LOCATION (LONGITUDE) 103° 18' 08"

WELL LOCATION (LATITUDE) 34° 23' 13.4"

AQUIFER NAME Ogalalla

AQUIFER CONFINED _____ UNCONFINED X

WELL INSTALLATION DATE 11-10-1985

DRILLING METHOD HYDRT

INNER CASING DIAMETER 4 inches

BOREHOLE DIAMETER 8 inches

CASING MATERIAL PVC

METHOD OF DEVELOPMENT AIRFT

ELEV BOTTOM OF BOREHOLE 3907.99 feet above MSL

ELEV BOTTOM OF WELL CASING 3907.90 feet above MSL

ELEV BOTTOM OF SCREENED INT 3907.99 feet above MSL

ELEV OF TOP OF SCREENED INT 3922.99 feet above MSL

SURVEYED ELEV OF CASING TOP 4279.99 feet above MSL

DATE OF REPORT 10-22-01 SIGNATURE _____

NAME (TYPED) Fredrick E. Gebhardt

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS AND 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 H -- Sewage Lagoons

WELL LOCATION (LONGITUDE) 103° 18' 16.80"

WELL LOCATION (LATITUDE) 34° 23' 07"

AQUIFER NAME Ogalalla

AQUIFER CONFINED _____ UNCONFINED X

WELL INSTALLATION DATE 11-18-1985

DRILLING METHOD HYDRT

INNER CASING DIAMETER 4 inches

BOREHOLE DIAMETER 8 inches

CASING MATERIAL PVC

METHOD OF DEVELOPMENT AIRFT

ELEV BOTTOM OF BOREHOLE 3901.15 feet above MSL

ELEV BOTTOM OF WELL CASING 3901.15 feet above MSL

ELEV BOTTOM OF SCREENED INT 3901.15 feet above MSL

ELEV OF TOP OF SCREENED INT 3921.15 feet above MSL

SURVEYED ELEV OF CASING TOP 4276.15 feet above MSL

DATE OF REPORT 10-22-01 SIGNATURE _____

NAME (TYPED) Fredrick E. Gebhardt

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS AND 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 Q -- Landfill-5

WELL LOCATION (LONGITUDE) 103° 18' 31"

WELL LOCATION (LATITUDE) 34° 22' 19"

AQUIFER NAME Ogallala

AQUIFER CONFINED _____ UNCONFINED X

WELL INSTALLATION DATE 02-24-1996

DRILLING METHOD Unknown

INNER CASING DIAMETER 4 inches

BOREHOLE DIAMETER 8 inches

CASING MATERIAL PVC

METHOD OF DEVELOPMENT BAILD

ELEV BOTTOM OF BOREHOLE 3,969.30 feet above MSL

ELEV BOTTOM OF WELL CASING 3,970.30 feet above MSL

ELEV BOTTOM OF SCREENED INT 3,970.30 feet above MSL

ELEV OF TOP OF SCREENED INT 4,000.30 feet above MSL

SURVEYED ELEV OF CASING TOP 4,266.89 feet above MSL

DATE OF REPORT 10-22-01 SIGNATURE _____

NAME (TYPED) Fredrick E. Gebhardt

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS AND 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 S -- Landfill-5

WELL LOCATION (LONGITUDE) 103 ° 18 ' 10.58 "

WELL LOCATION (LATITUDE) 34 ° 21 ' 57.02 "

AQUIFER NAME Ogallala

AQUIFER CONFINED _____ UNCONFINED X

WELL INSTALLATION DATE 12 -02 to 06 -1998

DRILLING METHOD HYDRT (mud rotary)

INNER CASING DIAMETER 4 inches

BOREHOLE DIAMETER 12 inches

CASING MATERIAL PVC (Schedule-80)

METHOD OF DEVELOPMENT BAILD

ELEV BOTTOM OF BOREHOLE 3898.83 feet above MSL

ELEV BOTTOM OF WELL CASING 3898.83 feet above MSL

ELEV BOTTOM OF SCREENED INT 3939.81 feet above MSL

ELEV OF TOP OF SCREENED INT 3979.83 feet above MSL

SURVEYED ELEV OF CASING TOP 4263.83 feet above MSL

DATE OF REPORT 10-22-01 SIGNATURE _____

NAME (TYPED) Fredrick E. Gebhardt

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS AND 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 T -- Landfill-5

WELL LOCATION (LONGITUDE) 103 ° 18 ' 09.33 "

WELL LOCATION (LATITUDE) 34 ° 22 ' 00.10 "

AQUIFER NAME Ogallala

AQUIFER CONFINED _____ UNCONFINED X

WELL INSTALLATION DATE 12 -6 to 10 -1998

DRILLING METHOD HYDRT (mud rotary)

INNER CASING DIAMETER 4 inches

BOREHOLE DIAMETER 12 inches

CASING MATERIAL PVC (Schedule-80)

METHOD OF DEVELOPMENT BAILD

ELEV BOTTOM OF BOREHOLE 3898.69 feet above MSL

ELEV BOTTOM OF WELL CASING 3898.69 feet above MSL

ELEV BOTTOM OF SCREENED INT 3939.69 feet above MSL

ELEV OF TOP OF SCREENED INT 3979.69 feet above MSL

SURVEYED ELEV OF CASING TOP 4263.69 feet above MSL

DATE OF REPORT 10-22-01 SIGNATURE _____

NAME (TYPED) Fredrick E. Gebhardt

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS AND 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 U -- Landfill-5

WELL LOCATION (LONGITUDE) 103 ° 18 ' 09.84 "

WELL LOCATION (LATITUDE) 34 ° 22 ' 04.88 "

AQUIFER NAME Ogallala

AQUIFER CONFINED _____ UNCONFINED X

WELL INSTALLATION DATE 12 -10 to 13 -1998

DRILLING METHOD HYDRT (mud rotary)

INNER CASING DIAMETER 4 inches

BOREHOLE DIAMETER 12 inches

CASING MATERIAL PVC (Schedule-80)

METHOD OF DEVELOPMENT BAILD

ELEV BOTTOM OF BOREHOLE 3900.26 feet above MSL

ELEV BOTTOM OF WELL CASING 3900.26 feet above MSL

ELEV BOTTOM OF SCREENED INT 3941.26 feet above MSL

ELEV OF TOP OF SCREENED INT 3981.26 feet above MSL

SURVEYED ELEV OF CASING TOP 4265.26 feet above MSL

DATE OF REPORT 10-22-01 SIGNATURE _____

NAME (TYPED) Fredrick E. Gebhardt

MONITORING WELL
SEMI-ANNUAL SAMPLING REPORT

SAMPLE COLLECTED BY Fredrick E. Gebhardt

LABORATORY NAME Severn Trent Services WELL NUMBER CAFB-B

WELL DEPTH 362.30 feet WELL CASING VOLUME 43.41 gallons

DATE SAMPLED 03-21-2001 LABORATORY SAMPLE I.D.# D1C220263

TIME SAMPLED 1345 DATE RECEIVED BY LAB 03-22-2001

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3968.90	03-21-2001
Flow Rate	00059	gal/min	1.2	03-21-2001
Pump Period	72004	min.	33	03-21-2001
Volume Evacuated	73675	gal	40.0	03-21-2001
Well Sampling Method	84077	---	PSPMP	N/A

Sampler Material: TEFLON Well Sampling Method: BENNETT PUMP

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	7.24	N/A	03-21-2001	field electrometer
Specific Conductivity	00095	umhos/cm	781	N/A	03-21-2001	field electrometer
T.O.X.	70354	ug/L	ND	30.0	04-10-2001	SW9020B
T.O.C.	00680	mg/L	ND	1.0	04-16-2001	SW9060

SIGNATURE: _____

NAME (PRINTED): Fredrick E. Gebhardt

MONITORING WELL
SEMI-ANNUAL SAMPLING REPORT

SAMPLE COLLECTED BY Fredrick E. Gebhardt

LABORATORY NAME Severn Trent Services WELL NUMBER CAFB-C

WELL DEPTH 362.00 feet WELL CASING VOLUME 41.5 gallons

DATE SAMPLED 03-21-2001 LABORATORY SAMPLE I.D.# D1C220263

TIME SAMPLED 1020 DATE RECEIVED BY LAB 03-22-2001

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3969.72	03-21-2001
Flow Rate	00059	gal/min	1.6	03-21-2001
Pump Period	72004	min.	25.0	03-21-2001
Volume Evacuated	73675	gal	40.0	03-21-2001
Well Sampling Method	84077	---	PSPMP	N/A

Sampler Material: TEFLON Well Sampling Method: BENNETT PUMP

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	7.54	N/A	03-21-2001	field electrometer
Specific Conductivity	00095	umhos/cm	598	N/A	03-21-2001	field electrometer
T.O.X.	70354	ug/L	ND	30.0	04-10-2001	SW9020B
T.O.C.	00680	mg/L	ND	1.0	04-16-2001	SW9060

SIGNATURE: _____

NAME (PRINTED): Fredrick. Gebhardt

MONITORING WELL
SEMI-ANNUAL SAMPLING REPORT

SAMPLE COLLECTED BY Fredrick E. Gebhardt

LABORATORY NAME Severn Trent Services WELL NUMBER CAFB-D

WELL DEPTH 354.87 feet WELL CASING VOLUME 39.81 gallons

DATE SAMPLED 03-21-2001 LABORATORY SAMPLE I.D.# D1C220263

TIME SAMPLED 0930 DATE RECEIVED BY LAB 03-22-2001

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3972.28	03-21-2001
Flow Rate	00059	gal/min	1.0	03-21-2001
Pump Period	72004	min.	40.0	03-21-2001
Volume Evacuated	73675	gal	40.0	03-21-2001
Well Sampling Method	84077	---	PSPMP	N/A

Sampler Material: TEFLON Well Sampling Method: BENNETT PUMP

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	7.07	N/A	03-21-2001	field electrometer
Specific Conductivity	00095	umhos/cm	589	N/A	03-21-2001	field electrometer
T.O.X.	70354	ug/L	ND	30.0	04-10-2001	SW9020B
T.O.C.	00680	mg/L	ND	1.0	04-16-2001	SW9060

SIGNATURE: _____

NAME (PRINTED): Fredrick E. Gebhardt

MONITORING WELL
ANNUAL SAMPLING REPORT

SAMPLE COLLECTED BY Fredrick E. Gebhardt

LABORATORY NAME Severn Trent Services WELL NUMBER CAFB-E

WELL DEPTH 370.00 feet WELL CASING VOLUME 49.4 gallons

DATE SAMPLED 03-22-2001 LABORATORY SAMPLE I.D.# D1C230236

TIME SAMPLED 1015 DATE RECEIVED BY LAB 03-23-2001

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3987.17	03-22-2001
Flow Rate	00059	gal/min	1.0	03-22-2001
Pump Period	72004	min.	45.0	03-22-2001
Volume Evacuated	73675	gal	45.0	03-22-2001
Well Sampling Method	84077	---	PSPMP	N/A

Sampler Material: TEFLON Well Sampling Method: BENNETT PUMP

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	7.33	N/A	03-22-2001	field electrometer
Specific Conductivity	00095	umhos/cm	870	N/A	03-22-2001	field electrometer

SIGNATURE: _____

NAME (PRINTED): Fredrick E. Gebhardt

MONITORING WELL
ANNUAL SAMPLING REPORT

SAMPLE COLLECTED BY Fredrick E. Gebhardt

LABORATORY NAME Severn Trent Services WELL NUMBER CAFB-G

WELL DEPTH 372.09 feet WELL CASING VOLUME 51.1 gallons

DATE SAMPLED 03-22-2001 LABORATORY SAMPLE I.D.# D1C230236

TIME SAMPLED 1220 DATE RECEIVED BY LAB 03-23-2001

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3986.56	03-22-2001
Flow Rate	00059	gal/min	1.1	03-22-2001
Pump Period	72004	min.	35.0	03-22-2001
Volume Evacuated	73675	gal	40.0	03-22-2001
Well Sampling Method	84077	---	PSPMP	N/A

Sampler Material: TEFLON Well Sampling Method: BENNETT PUMP

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	7.61	N/A	03-22-2001	field electrometer
Specific Conductivity	00095	umhos/cm	983	N/A	03-22-2001	field electrometer

SIGNATURE: _____

NAME (PRINTED): Fredrick E. Gebhardt

MONITORING WELL
ANNUAL SAMPLING REPORT

SAMPLE COLLECTED BY Fredrick E. Gebhardt

LABORATORY NAME Severn Trent Services WELL NUMBER CAFB-H

WELL DEPTH 375.00 feet WELL CASING VOLUME 53.2 gallons

DATE SAMPLED 03-22-2001 LABORATORY SAMPLE I.D.# D1C230236

TIME SAMPLED 1125 DATE RECEIVED BY LAB 03-23-2001

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3983.03	03-22-2001
Flow Rate	00059	gal/min	1.1	03-22-2001
Pump Period	72004	min.	35.0	03-22-2001
Volume Evacuated	73675	gal	40.0	03-22-2001
Well Sampling Method	84077	---	PSPMP	N/A

Sampler Material: TEFLON Well Sampling Method: BENNETT PUMP

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	6.97	N/A	03-22-2001	field electrometer
Specific Conductivity	00095	umhos/cm	741	N/A	03-22-2001	field electrometer

SIGNATURE: _____

NAME (PRINTED): Fredrick E. Gebhardt

MONITORING WELL
SEMI-ANNUAL SAMPLING REPORT

SAMPLE COLLECTED BY Fredrick E. Gebhardt

LABORATORY NAME Severn Trent Services WELL NUMBER CAFB-Q

WELL DEPTH 296.69 feet WELL CASING VOLUME 5.96 gallons

DATE SAMPLED 03-22-2001 LABORATORY SAMPLE I.D.# D1C230236

TIME SAMPLED 0900 DATE RECEIVED BY LAB 03-23-2001

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3979.37	03-22-2001
Flow Rate	00059	gal/min	1.3	03-22-2001
Pump Period	72004	min.	31	03-22-2001
Volume Evacuated	73675	gal	40	03-22-2001
Well Sampling Method	84077	---	PSPMP	N/A

Sampler Material: TEFLON Well Sampling Method: BENNETT PUMP

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	7.29	N/A	03-22-2001	field electrometer
Specific Conductivity	00095	umhos/cm	754	N/A	03-22-2001	field electrometer
T.O.X.	70354	ug/L	ND	30.0	04-11-2001	SW9020B
T.O.C.	00680	mg/L	0.39 B	1.0	04-16-2001	SW9060

SIGNATURE: _____

NAME (PRINTED): Fredrick E. Gebhardt

MONITORING WELL
SEMI-ANNUAL SAMPLING REPORT

SAMPLE COLLECTED BY Fredrick E. Gebhardt

LABORATORY NAME Severn Trent Services WELL NUMBER CAFB-S

WELL DEPTH 362.77 feet WELL CASING VOLUME 43.5 gallons

DATE SAMPLED 03-20-2001 LABORATORY SAMPLE I.D.# D1C210269

TIME SAMPLED 1425 DATE RECEIVED BY LAB 03-21-2001

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3967.97	03-20-2001
Flow Rate	00059	gal/min	0.86	03-20-2001
Pump Period	72004	min.	35	03-20-2001
Volume Evacuated	73675	gal	30.0	03-20-2001
Well Sampling Method	84077	---	PSPMP	N/A

Sampler Material: TEFLON Well Sampling Method: BENNETT PUMP

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	7.30	N/A	03-20-2001	field electrometer
Specific Conductivity	00095	umhos/cm	775	N/A	03-20-2001	field electrometer
T.O.X.	70354	ug/L	ND	30.0	04-10-2001	SW9020B
T.O.C.	00680	mg/L	0.40 B	1.0	04-16-2001	SW9060

SIGNATURE: _____

NAME (PRINTED): Fredrick E. Gebhardt

MONITORING WELL
SEMI-ANNUAL SAMPLING REPORT

SAMPLE COLLECTED BY Fredrick E. Gebhardt

LABORATORY NAME Severn Trent Services WELL NUMBER CAFB-T

WELL DEPTH 365.00 feet WELL CASING VOLUME 45.6 gallons

DATE SAMPLED 03-21-2001 LABORATORY SAMPLE I.D.# D1C220263

TIME SAMPLED 1150 DATE RECEIVED BY LAB 03-22-2001

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3968.89	03-21-2001
Flow Rate	00059	gal/min	1.3	03-21-2001
Pump Period	72004	min.	30	03-21-2001
Volume Evacuated	73675	gal	40.0	03-21-2001
Well Sampling Method	84077	---	PSPMP	N/A

Sampler Material: TEFLON Well Sampling Method: BENNETT PUMP

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	7.12	N/A	03-21-2001	field electrometer
Specific Conductivity	00095	umhos/cm	863	N/A	03-21-2001	field electrometer
T.O.X.	70354	ug/L	ND	30.0	04-10-2001	SW9020B
T.O.C.	00680	mg/L	ND	1.0	04-16-2001	SW9060

SIGNATURE: _____

NAME (PRINTED): Fredrick E. Gebhardt

MONITORING WELL
SEMI-ANNUAL SAMPLING REPORT

SAMPLE COLLECTED BY Fredrick E. Gebhardt

LABORATORY NAME Severn Trent Services WELL NUMBER CAFB-U

WELL DEPTH 365.00 feet WELL CASING VOLUME 45.8 gallons

DATE SAMPLED 03-21-2001 LABORATORY SAMPLE I.D.# D1C220263

TIME SAMPLED 1455 DATE RECEIVED BY LAB 03-22-2001

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3970.82	03-21-2001
Flow Rate	00059	gal/min	1.1	03-21-2001
Pump Period	72004	min.	35.0	03-21-2001
Volume Evacuated	73675	gal	40.0	03-21-2001
Well Sampling Method	84077	---	PSPMP	N/A

Sampler Material: TEFLON Well Sampling Method: BENNETT PUMP

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	7.86	N/A	03-21-2001	field electrometer
Specific Conductivity	00095	umhos/cm	758	N/A	03-21-2001	field electrometer
T.O.X.	70354	ug/L	ND	30.0	04-10-2001	SW9020B
T.O.C.	00680	mg/L	ND	1.0	04-16-2001	SW9060

SIGNATURE: _____

NAME (PRINTED): Fredrick E. Gebhardt

APPENDIX I

Analytical Results from Sevrn Trent Services Laboratory
for Ground-Water Samples Collected March 20, 2001

SEVERN TRENT SERVICES

STL Denver
4955 Yarrow Street
Arvada, CO 80002-4517

Tel: 303 736 0100
Fax: 303 431 7171
www.stl-inc.com

ANALYTICAL REPORT

Cannon AFB
Lot #: D1C210269

Richard Daddow

U.S. Geological Survey

STL DENVER

Karen Kuoppala
Project Manager

April 17, 2001

Table Of Contents

Standard Deliverables with Supporting Documentation

Report Contents	Number of Pages
Standard Deliverables *(The **Cover Letter** and the **Report Cover** page are considered integral parts of this Standard Deliverable package. This report is incomplete unless all pages indicated in this Table of Contents are included.)*	93

- **Table of Contents**
- **Case Narrative**
- **Executive Summary – Detection Highlights**
- **Methods Summary**
- **Method/Analyst Summary**
- **Lot Sample Summary**
- **Analytical Results**
- **QC Data Association Summary**
- **Chain-of-Custody**

Supporting Documentation *(Note: A one-page "Description of Supporting Documentation" is provided at the beginning of this section.).*	**Check below when supporting documentation is present.**
• **Volatile GC/MS**	✓
• **Semivolatile GC/MS**	✓
• **Volatile GC**	
• **Semivolatile GC**	
• **LC/MS or HPLC**	✓
• **Metals**	✓
• **General Chemistry**	✓
• **Subcontracted Data**	✓

Case Narrative
Lot D1C210269

With exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory quality control samples analyzed in conjunction with the samples in this project were within established control limits. The test results shown in this report meet all requirements of NELAC, and any exceptions are noted below. This report shall not be reproduced, except in full, without the written permission of the laboratory

This report contains the results for the two samples received under chain of custody on March 21, 2001. The dioxins/furans analyses were performed at STL Sacramento.

GC/MS Semi-Volatile Organics, SW846 8270C

The LCS (LCSD) demonstrated recoveries above QC limits for 4-nitrophenol. The compound was not detected in the associated sample, therefore further corrective action was not taken.

The method required MS/MSD could not be performed due to insufficient sample volume. A duplicate LCS (LCSD) was analyzed and reported to provide evidence of batch precision.

GC Semi-Volatile Organics, SW846 8081A

The method required MS/MSD could not be performed due to insufficient sample volume. A duplicate LCS (LCSD) was analyzed and reported to provide evidence of batch precision.

The continuing calibration verification (CCV) demonstrated percent differences greater than method specified limits for 4,4'-DDD, endrin aldehyde, and kepone. The average percent difference of all compounds in the CCV was within method specified control limits.

GC Semi-Volatile Organics, SW846 8082

The method required MS/MSD could not be performed due to insufficient sample volume. A duplicate LCS (LCSD) was analyzed and reported to provide evidence of batch precision.

GC Semi-Volatile Organics, SW846 8151A

The method required MS/MSD could not be performed due to insufficient sample volume. A duplicate LCS (LCSD) was analyzed and reported to provide evidence of batch precision.

General Chemistry

The LCS demonstrated a recovery greater than QC limits for total sulfide. Total sulfide was not detected in the associated sample, therefore no further corrective action was taken.

EXECUTIVE SUMMARY - Detection Highlights

D1C210269

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
CAFB-S 03/20/01 14:25 001				
Arsenic	4.7 B	5.0	ug/L	SW846 6020
Chromium	2.1	1.0	ug/L	SW846 6020
Selenium	6.5	5.0	ug/L	SW846 6020
Molybdenum	3.8 B	20.0	ug/L	SW846 6010B
Aluminum	51.0 B	100	ug/L	SW846 6010B
Barium	35.6	10.0	ug/L	SW846 6010B
Calcium	43300	200	ug/L	SW846 6010B
Iron	45.5 B	100	ug/L	SW846 6010B
Potassium	6490	3000	ug/L	SW846 6010B
Magnesium	41500	200	ug/L	SW846 6010B
Manganese	2.7 B	10.0	ug/L	SW846 6010B
Sodium	49800	5000	ug/L	SW846 6010B
Vanadium	29.3	10.0	ug/L	SW846 6010B
Zinc	26.9	20.0	ug/L	SW846 6010B
Total Organic Carbon	0.40 B	1.0	mg/L	SW846 9060

METHODS SUMMARY

D1C210269

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Chlorinated Herbicides by GC	SW846 8151A	SW846 8151A
Cyanide, Total	SW846 9012A	SW846 9012A
Dioxins/Furans, HRGC/LRMS (8280A)	SW846 8280A	SW846 8280A
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3010A
ICP-MS (6020)	SW846 6020	SW846 3010
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A	SW846 7470A
Organochlorine Pesticides	SW846 8081A	SW846 3510C
Perchlorate	EPA 314.0	EPA 314.0
Polynuclear Aromatic Hydrocarbons by HPLC	SW846 8310	SW846 3510
PCBs by SW-846 8082	SW846 8082	SW846 3510C
Semivolatile Organic Compounds by GC/MS	SW846 8270C	SW846 3520C
Sulfides, Total 9030B/9034	SW846 9030B/903	SW846 9030B/903
Total Organic Carbon	SW846 9060	SW846 9060
Total Organic Halogens	SW846 9020B	SW846 9020B
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3010A
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B/826

References:

EPA "EASTERN ENVIRONMENTAL RADIATION FACILITY RADIOCHEMISTRY PROCEDURES MANUAL" US EPA EPA 520/5-84-006 AUGUST 1984

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

METHOD / ANALYST SUMMARY

D1C210269

ANALYTICAL METHOD	ANALYST	ANALYST ID
EPA 314.0	Dave Elkin	000901
SW846 6010B	Lynn-Anne Trudell	006645
SW846 6010B	Steve Mustain	006720
SW846 6020	Royce Bruce	008595
SW846 7470A	Thomas Lill	006929
SW846 8081A	Dennis Jonsrud	009226
SW846 8082	Karla Garcia	000205
SW846 8151A	Sonya Dacar	011595
SW846 8260B	Steve Szocik	002410
SW846 8270C	Rocky Hebel	003920
SW846 8280A	Kevin Sanchez	005719
SW846 8310	Sonya Dacar	011595
SW846 9012A	Ewa Kudla	001167
SW846 9020B	Duane Allee	001470
SW846 9030B/9034	Roger Winn	000597
SW846 9060	Sara Agner	008534

References:

EPA "EASTERN ENVIRONMENTAL RADIATION FACILITY RADIOCHEMISTRY PROCEDURES MANUAL" US EPA EPA 520/5-84-006 AUGUST 1984

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

D1C210269

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
DXQC1	001	CAFB-S	03/20/01	14:25
DXQDE	002	CAFB-S-1B	03/20/01	14:25

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

GC/MS Volatiles

Lot-Sample #...: D1C210269-001 **Work Order #...:** DXQC11AA **Matrix.....:** WG
Date Sampled...: 03/20/01 14:25 **Date Received..:** 03/21/01
Prep Date.....: 04/02/01 **Analysis Date..:** 04/02/01
Prep Batch #...: 1093348 **Analysis Time..:** 12:15
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

GC/MS Volatiles

Lot-Sample #...: D1C210269-001 **Work Order #...:** DXQC11AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L
Acrolein	ND	20	ug/L
Ethyl methacrylate	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	84	(80 - 120)
1,2-Dichloroethane-d4	90	(76 - 122)
4-Bromofluorobenzene	100	(79 - 119)
Toluene-d8	104	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-S

GC/MS Volatiles

Lot-Sample #: D1C210269-001 **Work Order #:** DXQC11AA **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Cyclotrisiloxane, hexamethyl-	541-05-9	2.52 J T2 M	10.01	ug/L
Unknown		4.5 J M	12.782	ug/L
Unknown		3.8 J M	15.029	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S-1B

GC/MS Volatiles

Lot-Sample #...: D1C210269-002 **Work Order #...:** DXQDE1AA **Matrix.....:** WQ
Date Sampled...: 03/20/01 14:25 **Date Received..:** 03/21/01
Prep Date.....: 04/02/01 **Analysis Date..:** 04/02/01
Prep Batch #...: 1093348 **Analysis Time..:** 13:31
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S-1B

GC/MS Volatiles

Lot-Sample #...: D1C210269-002 **Work Order #...:** DXQDE1AA **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L
Acrolein	ND	20	ug/L
Ethyl methacrylate	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	88	(80 - 120)
1,2-Dichloroethane-d4	93	(76 - 122)
4-Bromofluorobenzene	99	(79 - 119)
Toluene-d8	104	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-S-1B

GC/MS Volatiles

Lot-Sample #: D1C210269-002 **Work Order #:** DXQDE1AA **Matrix:** WQ

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Cyclotrisiloxane, hexamethyl-	541-05-9	2.72 J T2 M	10.01	ug/L
Unknown		5.3 J M	12.782	ug/L
Unknown		4.1 J M	15.03	ug/L
Unknown		3.4 J M	16.914	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

GC/MS Semivolatiles

Lot-Sample #...: D1C210269-001 **Work Order #...:** DXQC11AC **Matrix.....:** WG
Date Sampled...: 03/20/01 14:25 **Date Received..:** 03/21/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085169 **Analysis Time..:** 18:22
Dilution Factor: 1

Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Di-n-butyl phthalate	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Phenol	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
bis(2-Chloroethyl)-ether	ND	10	ug/L
bis(2-Chloroethoxy) methane	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
bis(2-Ethylhexyl) phthalate	ND	10	ug/L
2,2'-oxybis(1-Chloropropane)	ND	10	ug/L
4-Methylphenol	ND	10	ug/L
N-Nitrosodi-n-propyl-amine	ND	10	ug/L
Hexachloroethane	ND	10	ug/L
Nitrobenzene	ND	10	ug/L
Isophorone	ND	10	ug/L
2-Nitrophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
1,2,4-Trichloro-benzene	ND	10	ug/L
Naphthalene	ND	10	ug/L
4-Chloroaniline	ND	10	ug/L
Hexachlorobutadiene	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
Hexachlorocyclopenta-diene	ND	50	ug/L
2,4,5-Trichloro-phenol	ND	10	ug/L
2,4,6-Trichloro-phenol	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
Dimethyl phthalate	ND	10	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

GC/MS Semivolatiles

Lot-Sample #...: D1C210269-001 Work Order #...: DXQC11AC Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
2,4-Dinitrophenol	ND	50	ug/L
4-Nitrophenol	ND	50	ug/L
Dibenzofuran	ND	10	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
Diethyl phthalate	ND	10	ug/L
4-Chlorophenyl phenyl ether	ND	10	ug/L
Fluorene	ND	10	ug/L
4-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
4-Bromophenyl phenyl ether	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Anthracene	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Pyrene	ND	10	ug/L
Butyl benzyl phthalate	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	50	ug/L
Benzo(a)anthracene	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-octyl phthalate	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Benzo(ghi)perylene	ND	10	ug/L
4-Chloro-3-methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
Acetophenone	ND	10	ug/L
2-Acetylaminofluorene	ND	100	ug/L
4-Aminobiphenyl	ND	50	ug/L
Aniline	ND	10	ug/L
Aramite	ND	20	ug/L
Benzyl alcohol	ND	10	ug/L
2-sec-Butyl-4,6-dinitro-phenol	ND	20	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

GC/MS Semivolatiles

Lot-Sample #...: D1C210269-001 Work Order #...: DXQC11AC Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,6-Dichlorophenol	ND	10	ug/L
4-Dimethylaminoazobenzene	ND	20	ug/L
7,12-Dimethylbenz(a)-anthracene	ND	20	ug/L
3,3'-Dimethylbenzidine	ND	20	ug/L
alpha,alpha-Dimethylphenethylamine	ND	50	ug/L
1,3-Dinitrobenzene	ND	10	ug/L
Diphenylamine	ND	10	ug/L
Ethyl methanesulfonate	ND	10	ug/L
Hexachloropropene	ND	100	ug/L
Isosafrole	ND	20	ug/L
Methapyrilene	ND	50	ug/L
3-Methylcholanthrene	ND	20	ug/L
Methyl methanesulfonate	ND	10	ug/L
3-Methylphenol	ND	10	ug/L
1,4-Naphthoquinone	ND	50	ug/L
1-Naphthylamine	ND	10	ug/L
2-Naphthylamine	ND	10	ug/L
N-Nitrosodi-n-butylamine	ND	10	ug/L
N-Nitrosodiethylamine	ND	10	ug/L
N-Nitrosodimethylamine	ND	10	ug/L
N-Nitrosomethylethylamine	ND	10	ug/L
N-Nitrosomorpholine	ND	10	ug/L
N-Nitrosopiperidine	ND	10	ug/L
N-Nitrosopyrrolidine	ND	10	ug/L
5-Nitro-o-toluidine	ND	20	ug/L
Pentachlorobenzene	ND	10	ug/L
Pentachloroethane	ND	50	ug/L
Pentachloronitrobenzene	ND	50	ug/L
Phenacetin	ND	20	ug/L
2-Picoline	ND	20	ug/L
Pronamide	ND	20	ug/L
Pyridine	ND	20	ug/L
Safrole	ND	20	ug/L
1,2,4,5-Tetrachloro-benzene	ND	10	ug/L
2,3,4,6-Tetrachlorophenol	ND	50	ug/L
2-Toluidine	ND	10	ug/L
1,3,5-Trinitrobenzene	ND	50	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

GC/MS Semivolatiles

Lot-Sample #...: D1C210269-001 Work Order #...: DXQC11AC Matrix.....: WG

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	84	(37 - 90)
Phenol-d5	85	(41 - 91)
Nitrobenzene-d5	84	(43 - 94)
2-Fluorobiphenyl	74	(33 - 90)
2,4,6-Tribromophenol	92	(42 - 103)
Terphenyl-d14	83	(29 - 112)

US GEOLOGICAL SURVEY

CAFB-S

GC/MS Semivolatiles

Lot-Sample #: D1C210269-001 **Work Order #:** DXQC11AC **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		59 J	M	1.8665	ug/L
Unknown		8.9 J	M	2.3526	ug/L
Unknown		4.6 J	M	2.8654	ug/L
Unknown		7.5 J	M	2.9883	ug/L
Unknown		13 J	M	3.2447	ug/L
Unknown		4.8 J	M	4.0834	ug/L
Unknown		19 J	M	12.962	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

GC Semivolatiles

Lot-Sample #...: D1C210269-001 **Work Order #...:** DXQC11AD **Matrix.....:** WG
Date Sampled...: 03/20/01 14:25 **Date Received..:** 03/21/01
Prep Date.....: 03/22/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1081190 **Analysis Time..:** 06:01
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diallate	ND	1.0	ug/L
Isodrin	ND	0.10	ug/L
Kepone	ND	1.0	ug/L
Aldrin	ND	0.050	ug/L
alpha-BHC	ND	0.050	ug/L
beta-BHC	ND	0.050	ug/L
delta-BHC	ND	0.050	ug/L
gamma-BHC (Lindane)	ND	0.050	ug/L
alpha-Chlordane	ND	0.050	ug/L
gamma-Chlordane	ND	0.050	ug/L
4,4'-DDD	ND	0.050	ug/L
4,4'-DDE	ND	0.050	ug/L
4,4'-DDT	ND	0.050	ug/L
Dieldrin	ND	0.050	ug/L
Endosulfan I	ND	0.050	ug/L
Endosulfan II	ND	0.050	ug/L
Endosulfan sulfate	ND	0.050	ug/L
Endrin	ND	0.050	ug/L
Endrin aldehyde	ND	0.050	ug/L
Heptachlor	ND	0.050	ug/L
Heptachlor epoxide	ND	0.050	ug/L
Methoxychlor	ND	0.10	ug/L
Toxaphene	ND	2.0	ug/L
Endrin ketone	ND	0.050	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	98	(15 - 162)
Tetrachloro-m-xylene	94	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

GC Semivolatiles

Lot-Sample #...: D1C210269-001 **Work Order #...:** DXQC11AE **Matrix.....:** WG
Date Sampled...: 03/20/01 14:25 **Date Received..:** 03/21/01
Prep Date.....: 03/22/01 **Analysis Date..:** 03/26/01
Prep Batch #...: 1081203 **Analysis Time..:** 18:01
Dilution Factor: 1
Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	1.0	ug/L
Aroclor 1221	ND	1.0	ug/L
Aroclor 1232	ND	1.0	ug/L
Aroclor 1242	ND	1.0	ug/L
Aroclor 1248	ND	1.0	ug/L
Aroclor 1254	ND	1.0	ug/L
Aroclor 1260	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	86	(52 - 129)
Tetrachloro-m-xylene	90	(54 - 113)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

GC Semivolatiles

Lot-Sample #...: D1C210269-001 **Work Order #...:** DXQC11AF **Matrix.....:** WG
Date Sampled...: 03/20/01 14:25 **Date Received..:** 03/21/01
Prep Date.....: 03/22/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1081452 **Analysis Time..:** 16:25
Dilution Factor: 1

Method.....: SW846 8151A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-D	ND	4.0	ug/L
2,4,5-T	ND	1.0	ug/L
2,4,5-TP (Silvex)	ND	1.0	ug/L
Dinoseb	ND	0.60	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	36	(20 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

HPLC

Lot-Sample #...: D1C210269-001 **Work Order #...:** DXQC11AG **Matrix.....:** WG
Date Sampled...: 03/20/01 14:25 **Date Received..:** 03/21/01
Prep Date.....: 03/27/01 **Analysis Date..:** 03/31/01
Prep Batch #...: 1086277 **Analysis Time..:** 01:46
Dilution Factor: 1

Method.....: SW846 8310

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	1.0	ug/L
Acenaphthylene	ND	1.0	ug/L
Anthracene	ND	0.10	ug/L
Benzo(a)anthracene	ND	0.10	ug/L
Benzo(a)pyrene	ND	0.10	ug/L
Benzo(b)fluoranthene	ND	0.10	ug/L
Benzo(ghi)perylene	ND	0.20	ug/L
Benzo(k)fluoranthene	ND	0.10	ug/L
Chrysene	ND	0.20	ug/L
Dibenzo(a,h)anthracene	ND	0.20	ug/L
Fluoranthene	ND	0.20	ug/L
Fluorene	ND	0.20	ug/L
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L
1-Methylnaphthalene	ND	1.0	ug/L
2-Methylnaphthalene	ND	1.0	ug/L
Naphthalene	ND	1.0	ug/L
Phenanthrene	ND	0.20	ug/L
Pyrene	ND	0.20	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	84	(54 - 126)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

Trace Level Organic Compounds

Lot-Sample #...: D1C210269-001 **Work Order #...:** DXQC11AM **Matrix.....:** WG
Date Sampled...: 03/20/01 14:25 **Date Received..:** 03/21/01
Prep Date.....: 03/27/01 **Analysis Date..:** 03/29/01
Prep Batch #...: 1086405 **Analysis Time..:** 22:02
Dilution Factor: 1

Method.....: SW846 8280A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,3,7,8-TCDD	ND	0.75	ng/L
Total TCDD	ND	0.75	ng/L
Total PeCDD	ND	6.6	ng/L
Total HxCDD	ND	1.4	ng/L
Total TCDF	ND	1.2	ng/L
Total PeCDF	ND	1.7	ng/L
Total HxCDF	ND	0.83	ng/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	112	(25 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

TOTAL Metals

Lot-Sample #...: D1C210269-001 **Matrix.....:** WG
Date Sampled...: 03/20/01 14:25 **Date Received..:** 03/21/01

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1081213						
Mercury	ND	0.20	ug/L	SW846 7470A	03/22-03/23/01	DXQC11A8
		Dilution Factor: 1		Analysis Time..: 12:25		
Prep Batch #...: 1088262						
Aluminum	**51.0 B**	**100**	**ug/L**	**SW846 6010B**	**04/09-04/10/01**	**DXQC11AN**
		Dilution Factor: 1		Analysis Time..: 17:29		
Barium	**35.6**	**10.0**	**ug/L**	**SW846 6010B**	**04/09-04/11/01**	**DXQC11AP**
		Dilution Factor: 1		Analysis Time..: 15:18		
Beryllium	ND	2.0	ug/L	SW846 6010B	04/09-04/11/01	DXQC11AQ
		Dilution Factor: 1		Analysis Time..: 15:18		
Calcium	**43300**	**200**	**ug/L**	**SW846 6010B**	**04/09-04/10/01**	**DXQC11CD**
		Dilution Factor: 1		Analysis Time..: 17:29		
Cobalt	ND	10.0	ug/L	SW846 6010B	04/09-04/11/01	DXQC11A9
		Dilution Factor: 1		Analysis Time..: 15:18		
Copper	ND	20.0	ug/L	SW846 6010B	04/09-04/11/01	DXQC11AR
		Dilution Factor: 1		Analysis Time..: 15:18		
Iron	**45.5 B**	**100**	**ug/L**	**SW846 6010B**	**04/09-04/10/01**	**DXQC11AT**
		Dilution Factor: 1		Analysis Time..: 17:29		
Potassium	**6490**	**3000**	**ug/L**	**SW846 6010B**	**04/09-04/10/01**	**DXQC11CF**
		Dilution Factor: 1		Analysis Time..: 17:29		
Magnesium	**41500**	**200**	**ug/L**	**SW846 6010B**	**04/09-04/10/01**	**DXQC11CE**
		Dilution Factor: 1		Analysis Time..: 17:29		
Manganese	**2.7 B**	**10.0**	**ug/L**	**SW846 6010B**	**04/09-04/11/01**	**DXQC11AU**
		Dilution Factor: 1		Analysis Time..: 15:18		
Sodium	**49800**	**5000**	**ug/L**	**SW846 6010B**	**04/09-04/10/01**	**DXQC11CG**
		Dilution Factor: 1		Analysis Time..: 17:29		
Nickel	ND	40.0	ug/L	SW846 6010B	04/09-04/11/01	DXQC11AV
		Dilution Factor: 1		Analysis Time..: 15:18		
Tin	ND	100	ug/L	SW846 6010B	04/09-04/11/01	DXQC11CA
		Dilution Factor: 1		Analysis Time..: 15:18		

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

TOTAL Metals

Lot-Sample #...: D1C210269-001 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	**29.3**	**10.0**	**ug/L**	**SW846 6010B**	**04/09-04/11/01**	**DXQC11AW**
		Dilution Factor: 1		Analysis Time..: 15:18		
Zinc	**26.9**	**20.0**	**ug/L**	**SW846 6010B**	**04/09-04/11/01**	**DXQC11AX**
		Dilution Factor: 1		Analysis Time..: 15:18		
Molybdenum	**3.8 B**	**20.0**	**ug/L**	**SW846 6010B**	**04/09-04/11/01**	**DXQC11CC**
		Dilution Factor: 1		Analysis Time..: 15:18		
Prep Batch #...: 1089265						
Silver	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXQC11A5
		Dilution Factor: 1		Analysis Time..: 18:02		
Arsenic	**4.7 B**	**5.0**	**ug/L**	**SW846 6020**	**04/05-04/11/01**	**DXQC11A1**
		Dilution Factor: 1		Analysis Time..: 18:02		
Cadmium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXQC11A2
		Dilution Factor: 1		Analysis Time..: 18:02		
Chromium	**2.1**	**1.0**	**ug/L**	**SW846 6020**	**04/05-04/11/01**	**DXQC11A7**
		Dilution Factor: 1		Analysis Time..: 18:02		
Lead	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXQC11A3
		Dilution Factor: 1		Analysis Time..: 18:02		
Antimony	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXQC11A0
		Dilution Factor: 1		Analysis Time..: 18:02		
Selenium	**6.5**	**5.0**	**ug/L**	**SW846 6020**	**04/05-04/11/01**	**DXQC11A4**
		Dilution Factor: 1		Analysis Time..: 18:02		
Thallium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXQC11A6
		Dilution Factor: 1		Analysis Time..: 18:02		

NOTE(S):

B Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

General Chemistry

Lot-Sample #...: D1C210269-001 **Work Order #...:** DXQC1 **Matrix.....:** WG
Date Sampled...: 03/20/01 14:25 **Date Received..:** 03/21/01

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	ND	0.010	mg/L	SW846 9012A	03/29-04/02/01	1092472
		Dilution Factor: 1		Analysis Time..: 13:00		
Perchlorate	ND	20.0	ug/L	EPA 314.0	03/26/01	1086178
		Dilution Factor: 1		Analysis Time..: 11:44		
Total Organic Carbon	**0.40 B**	**1.0**	**mg/L**	**SW846 9060**	**04/16/01**	**1106481**
		Dilution Factor: 1		Analysis Time..: 08:00		
Total Organic Halogens	ND V	60.0	ug/L	SW846 9020B	04/10/01	1102313
		Dilution Factor: 2		Analysis Time..: 12:00		
Total Sulfide	ND	4.0	mg/L	SW846 9030B/9034	03/22/01	1081298
		Dilution Factor: 1		Analysis Time..: 12:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

V Elevated reporting limit. The reporting limit is elevated due to limited sample volume.

APPENDIX II

Analytical Results from Sevrn Trent Services Laboratory
for Ground-Water Samples Collected March 21, 2001

SEVERN TRENT SERVICES

STL Denver
4955 Yarrow Street
Arvada, CO 80002-4517

Tel: 303 736 0100
Fax: 303 431 7171
www.stl-inc.com

ANALYTICAL REPORT

Cannon AFB
Lot #: D1C220263

Richard Daddow

U.S. Geological Survey

STL DENVER

Karen Kuoppala
Project Manager

April 20, 2001

Table Of Contents

Standard Deliverables with Supporting Documentation

Report Contents	Number of Pages
Standard Deliverables *(The **Cover Letter** and the **Report Cover** page are considered integral parts of this Standard Deliverable package. This report is incomplete unless all pages indicated in this Table of Contents are included.)*	202

- **Table of Contents**
- **Case Narrative**
- **Executive Summary – Detection Highlights**
- **Methods Summary**
- **Method/Analyst Summary**
- **Lot Sample Summary**
- **Analytical Results**
- **QC Data Association Summary**
- **Chain-of-Custody**

Supporting Documentation

(Note: A one-page "Description of Supporting Documentation" is provided at the beginning of this section.).

	Check below when supporting documentation is present.
• Volatile GC/MS	✓
• Semivolatile GC/MS	✓
• Volatile GC	✓
• Semivolatile GC	✓
• LC/MS or HPLC	✓
• Metals	✓
• General Chemistry	✓
• Subcontracted Data	

Case Narrative
Lot D1C220263

With exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory quality control samples analyzed in conjunction with the samples in this project were within established control limits. The test results shown in this report meet all requirements of NELAC, and any exceptions are noted below. This report shall not be reproduced, except in full, without the written permission of the laboratory

This report contains the results for the eight samples received under chain of custody on March 22, 2001. The dioxins/furans analyses were performed at STL Sacramento.

GC/MS Semi-Volatile Organics, SW846 8270C

The LCS (LCSD) associated with samples D1C220263-003, 005, and 007 demonstrated recoveries above QC limits for 4-nitrophenol. The compound was not detected in the associated sample therefore further corrective action was not taken.

The method required MS/MSD associated with samples D1C220263-003, 005, and 007 could not be performed due to insufficient sample volume. A duplicate LCS (LCSD) was analyzed and reported to provide evidence of batch precision.

GC Semi-Volatile Organics, SW846 8081A

The continuing calibration verification (CCV) demonstrated percent differences greater than method specified limits for endrin aldehyde, and kepone. The average percent difference of all compounds in the CCV was within method specified control limits.

Metals

The MS/MSD performed on sample D1C220263-006 demonstrated recoveries outside QC limits for antimony and silver.

General Chemistry

The MS/MSD performed on sample D1C220263-006 demonstrated recoveries outside QC limits for total sulfide.

EXECUTIVE SUMMARY - Detection Highlights

D1C220263

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
CAFB-TT 03/21/01 11:50 001				
Arsenic	4.8 B	5.0	ug/L	SW846 6020
Chromium	3.8	1.0	ug/L	SW846 6020
Selenium	8.3	5.0	ug/L	SW846 6020
Molybdenum	4.2 B	20.0	ug/L	SW846 6010B
Aluminum	70.7 B	100	ug/L	SW846 6010B
Barium	35.2	10.0	ug/L	SW846 6010B
Calcium	46500	200	ug/L	SW846 6010B
Iron	148	100	ug/L	SW846 6010B
Potassium	6020	3000	ug/L	SW846 6010B
Magnesium	43100	200	ug/L	SW846 6010B
Manganese	3.1 B	10.0	ug/L	SW846 6010B
Sodium	52600	5000	ug/L	SW846 6010B
Vanadium	27.6	10.0	ug/L	SW846 6010B
Zinc	13.8 B	20.0	ug/L	SW846 6010B
Total Sulfide	0.58 B	4.0	mg/L	SW846 9030B/9034
CAFB-U 03/21/01 14:55 002				
Arsenic	4.2 B	5.0	ug/L	SW846 6020
Chromium	2.7	1.0	ug/L	SW846 6020
Selenium	7.1	5.0	ug/L	SW846 6020
Molybdenum	3.9 B	20.0	ug/L	SW846 6010B
Aluminum	103	100	ug/L	SW846 6010B
Barium	36.8	10.0	ug/L	SW846 6010B
Calcium	47500	200	ug/L	SW846 6010B
Iron	79.3 B	100	ug/L	SW846 6010B
Potassium	6310	3000	ug/L	SW846 6010B
Magnesium	36800	200	ug/L	SW846 6010B
Manganese	3.1 B	10.0	ug/L	SW846 6010B
Sodium	53500	5000	ug/L	SW846 6010B
Vanadium	25.6	10.0	ug/L	SW846 6010B
Zinc	14.1 B	20.0	ug/L	SW846 6010B
Dichlorodifluoromethane	0.41 J	2.0	ug/L	SW846 8260B
Trichlorofluoromethane	0.57 J	2.0	ug/L	SW846 8260B
Total Sulfide	0.64 B	4.0	mg/L	SW846 9030B/9034
CAFB-C 03/21/01 10:20 003				
Arsenic	6.2	5.0	ug/L	SW846 6020
Chromium	2.0	1.0	ug/L	SW846 6020
Selenium	1.6 B	5.0	ug/L	SW846 6020
Molybdenum	5.6 B	20.0	ug/L	SW846 6010B
Aluminum	26.6 B	100	ug/L	SW846 6010B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

D1C220263

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
CAFB-C 03/21/01 10:20 003				
Barium	34.5	10.0	ug/L	SW846 6010B
Calcium	31400	200	ug/L	SW846 6010B
Iron	19.2 B	100	ug/L	SW846 6010B
Potassium	5170	3000	ug/L	SW846 6010B
Magnesium	30700	200	ug/L	SW846 6010B
Sodium	47600	5000	ug/L	SW846 6010B
Vanadium	40.6	10.0	ug/L	SW846 6010B
Trichloroethene	1.8	1.0	ug/L	SW846 8260B
Total Sulfide	0.56 B	4.0	mg/L	SW846 9030B/9034
CAFB-B 03/21/01 13:45 005				
Arsenic	5.4	5.0	ug/L	SW846 6020
Chromium	3.3	1.0	ug/L	SW846 6020
Lead	1.0	1.0	ug/L	SW846 6020
Selenium	6.7	5.0	ug/L	SW846 6020
Molybdenum	4.7 B	20.0	ug/L	SW846 6010B
Aluminum	87.2 B	100	ug/L	SW846 6010B
Barium	37.9	10.0	ug/L	SW846 6010B
Calcium	43200	200	ug/L	SW846 6010B
Copper	3.5 B	20.0	ug/L	SW846 6010B
Iron	430	100	ug/L	SW846 6010B
Potassium	6410	3000	ug/L	SW846 6010B
Magnesium	40800	200	ug/L	SW846 6010B
Manganese	23.5	10.0	ug/L	SW846 6010B
Sodium	58000	5000	ug/L	SW846 6010B
Vanadium	29.2	10.0	ug/L	SW846 6010B
Zinc	8.4 B	20.0	ug/L	SW846 6010B
CAFB-T 03/21/01 11:50 006				
Arsenic	4.9 B	5.0	ug/L	SW846 6020
Chromium	3.5	1.0	ug/L	SW846 6020
Selenium	8.4	5.0	ug/L	SW846 6020
Molybdenum	4.6 B	20.0	ug/L	SW846 6010B
Aluminum	83.2 B	100	ug/L	SW846 6010B
Barium	35.4	10.0	ug/L	SW846 6010B
Calcium	47800	200	ug/L	SW846 6010B
Iron	158	100	ug/L	SW846 6010B
Potassium	6180	3000	ug/L	SW846 6010B
Magnesium	44200	200	ug/L	SW846 6010B
Manganese	3.2 B	10.0	ug/L	SW846 6010B
Sodium	54400	5000	ug/L	SW846 6010B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

D1C220263

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
CAFB-T 03/21/01 11:50 006				
Vanadium	28.4	10.0	ug/L	SW846 6010B
Zinc	17.9 B	20.0	ug/L	SW846 6010B
Total Sulfide	0.61 B	4.0	mg/L	SW846 9030B/9034
Perchlorate	19.9 B	20.0	ug/L	EPA 314.0
CAFB-D 03/21/01 11:50 007				
Arsenic	4.9 B	5.0	ug/L	SW846 6020
Chromium	1.6	1.0	ug/L	SW846 6020
Antimony	0.39 B	1.0	ug/L	SW846 6020
Thallium	0.040 B	1.0	ug/L	SW846 6020
Molybdenum	4.0 B	20.0	ug/L	SW846 6010B
Barium	80.0	10.0	ug/L	SW846 6010B
Calcium	31900	200	ug/L	SW846 6010B
Iron	35.1 B	100	ug/L	SW846 6010B
Potassium	5290	3000	ug/L	SW846 6010B
Magnesium	31600	200	ug/L	SW846 6010B
Sodium	46500	5000	ug/L	SW846 6010B
Vanadium	38.8	10.0	ug/L	SW846 6010B
Zinc	3.6 B	20.0	ug/L	SW846 6010B
Trichloroethene	1.1	1.0	ug/L	SW846 8260B

METHODS SUMMARY

D1C220263

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Chlorinated Herbicides by GC	SW846 8151A	SW846 8151A
Cyanide, Total	SW846 9012A	SW846 9012A
Dioxins/Furans, HRGC/LRMS (8280A)	SW846 8280A	SW846 8280A
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3010A
ICP-MS (6020)	SW846 6020	SW846 3010
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A	SW846 7470A
Organochlorine Pesticides	SW846 8081A	SW846 3510C
Perchlorate	EPA 314.0	EPA 314.0
Polynuclear Aromatic Hydrocarbons by HPLC	SW846 8310	SW846 3510
PCBs by SW-846 8082	SW846 8082	SW846 3510C
Semivolatile Organic Compounds by GC/MS	SW846 8270C	SW846 3520C
Sulfides, Total 9030B/9034	SW846 9030B/903	SW846 9030B/903
Total Organic Carbon	SW846 9060	SW846 9060
Total Organic Halogens	SW846 9020B	SW846 9020B
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3010A
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B/826

References:

EPA "EASTERN ENVIRONMENTAL RADIATION FACILITY RADIOCHEMISTRY PROCEDURES MANUAL" US EPA EPA 520/5-84-006 AUGUST 1984

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

METHOD / ANALYST SUMMARY

D1C220263

ANALYTICAL METHOD	ANALYST	ANALYST ID
EPA 314.0	Dave Elkin	000901
SW846 6010B	Lynn-Anne Trudell	006645
SW846 6010B	Steve Mustain	006720
SW846 6020	Royce Bruce	008595
SW846 7470A	Thomas Lill	006929
SW846 8081A	Dennis Jonsrud	009226
SW846 8082	Karla Garcia	000205
SW846 8151A	Sonya Dacar	011595
SW846 8260B	Steve Szocik	002410
SW846 8270C	Rocky Hebel	003920
SW846 8270C	Xiayasang Leewaphath	006600
SW846 8280A	Kevin Sanchez	005719
SW846 8310	Sonya Dacar	011595
SW846 9012A	Ewa Kudla	001167
SW846 9020B	Duane Allee	001470
SW846 9030B/9034	Roger Winn	000597
SW846 9060	Sara Agner	008534

References:

EPA "EASTERN ENVIRONMENTAL RADIATION FACILITY RADIOCHEMISTRY PROCEDURES MANUAL" US EPA EPA 520/5-84-006 AUGUST 1984

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

D1C220263

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
DXTG4	001	CAFB-TT	03/21/01	11:50
DXTH5	002	CAFB-U	03/21/01	14:55
DXTJD	003	CAFB-C	03/21/01	10:20
DXTJF	004	CAFB-C-TB	03/21/01	
DXTJG	005	CAFB-B	03/21/01	13:45
DXTJP	006	CAFB-T	03/21/01	11:50
DXTJW	007	CAFB-D	03/21/01	11:50
DXTJ0	008	CAFB-D-TB	03/21/01	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-TT

GC/MS Volatiles

Lot-Sample #...: D1C220263-001 **Work Order #...:** DXTG41AA **Matrix.....:** WG
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 04/03/01 **Analysis Date..:** 04/03/01
Prep Batch #...: 1094154 **Analysis Time..:** 11:53
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-TT

GC/MS Volatiles

Lot-Sample #...: D1C220263-001 Work Order #...: DXTG41AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L
Acrolein	ND	20	ug/L
Ethyl methacrylate	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(80 - 120)
1,2-Dichloroethane-d4	96	(72 - 127)
4-Bromofluorobenzene	107	(79 - 119)
Toluene-d8	109	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-TT

GC/MS Volatiles

Lot-Sample #: D1C220263-001 **Work Order #:** DXTG41AA **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		1.8 J	M	12.819	ug/L
Unknown		2.2 J	M	13.363	ug/L
Unknown		2.3 J	M	15.048	ug/L
Unknown		1.7 J	M	16.461	ug/L
Unknown		4.6 J	M	16.951	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

GC/MS Volatiles

Lot-Sample #...: D1C220263-002 **Work Order #...:** DXTH51AM **Matrix.....:** WG
Date Sampled...: 03/21/01 14:55 **Date Received..:** 03/22/01
Prep Date.....: 04/03/01 **Analysis Date..:** 04/03/01
Prep Batch #...: 1094154 **Analysis Time..:** 12:18
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	**0.41 J**	**2.0**	**ug/L**
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Trichlorofluoromethane	**0.57 J**	**2.0**	**ug/L**
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

GC/MS Volatiles

Lot-Sample #...: D1C220263-002 **Work Order #...:** DXTH51AM **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L
Acrolein	ND	20	ug/L
Ethyl methacrylate	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(80 - 120)
1,2-Dichloroethane-d4	97	(72 - 127)
4-Bromofluorobenzene	104	(79 - 119)
Toluene-d8	107	(79 - 119)

NOTE(S):

J Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

CAFB-U

GC/MS Volatiles

Lot-Sample #: D1C220263-002 **Work Order #:** DXTH51AM **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		3.7 J	M	10.461	ug/L
Cyclotetrasiloxane, octamethyl	556-67-2	2.02 J T2	M	12.835	ug/L
Unknown		2.1 J	M	15.063	ug/L
Unknown		6.5 J	M	16.984	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

GC/MS Volatiles

Lot-Sample #...: D1C220263-003 **Work Order #...:** DXTJD1AM **Matrix.....:** WG
Date Sampled...: 03/21/01 10:20 **Date Received..:** 03/22/01
Prep Date.....: 04/03/01 **Analysis Date..:** 04/03/01
Prep Batch #...: 1094154 **Analysis Time..:** 12:44
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

GC/MS Volatiles

Lot-Sample #...: D1C220263-003 **Work Order #...:** DXTJD1AM **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**1.8**	**1.0**	**ug/L**
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L
Acrolein	ND	20	ug/L
Ethyl methacrylate	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(80 - 120)
1,2-Dichloroethane-d4	93	(72 - 127)
4-Bromofluorobenzene	98	(79 - 119)
Toluene-d8	101	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-C

GC/MS Volatiles

Lot-Sample #: D1C220263-003 **Work Order #:** DXTJD1AM **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Cyclotrisiloxane, hexamethyl-	541-05-9	1.72 J T2 M	10.025	ug/L
Unknown		3.2 J M	12.797	ug/L
Unknown		1.7 J M	13.323	ug/L
Unknown		2.3 J M	15.026	ug/L
Unknown		5.5 J M	16.929	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C-TB

GC/MS Volatiles

Lot-Sample #...: D1C220263-004 **Work Order #...:** DXTJF1AA **Matrix.....:** WQ
Date Sampled...: 03/21/01 **Date Received..:** 03/22/01
Prep Date.....: 04/03/01 **Analysis Date..:** 04/03/01
Prep Batch #...: 1094154 **Analysis Time..:** 13:10
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C-TB

GC/MS Volatiles

Lot-Sample #...: D1C220263-004 **Work Order #...:** DXTJF1AA **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L
Acrolein	ND	20	ug/L
Ethyl methacrylate	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(80 - 120)
1,2-Dichloroethane-d4	93	(72 - 127)
4-Bromofluorobenzene	105	(79 - 119)
Toluene-d8	104	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-C-TB

GC/MS Volatiles

Lot-Sample #: D1C220263-004 **Work Order #:** DXTJF1AA **Matrix:** WQ

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Cyclotrisiloxane, hexamethyl-	541-05-9	1.42 J T2 M	10.044	ug/L
Unknown		2.2 J M	12.816	ug/L
Unknown		1.3 J M	13.324	ug/L
Unknown		2.5 J M	15.027	ug/L
Unknown		5.5 J M	16.93	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

GC/MS Volatiles

Lot-Sample #...: D1C220263-005 **Work Order #...:** DXTJG1AX **Matrix.....:** WG
Date Sampled...: 03/21/01 13:45 **Date Received..:** 03/22/01
Prep Date.....: 04/03/01 **Analysis Date..:** 04/03/01
Prep Batch #...: 1094154 **Analysis Time..:** 13:35
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

GC/MS Volatiles

Lot-Sample #...: D1C220263-005 **Work Order #...:** DXTJG1AX **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L
Acrolein	ND	20	ug/L
Ethyl methacrylate	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	86	(80 - 120)
1,2-Dichloroethane-d4	92	(72 - 127)
4-Bromofluorobenzene	96	(79 - 119)
Toluene-d8	100	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-B

GC/MS Volatiles

Lot-Sample #: D1C220263-005 **Work Order #:** DXTJG1AX **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		2.1 J	M	12.815	ug/L
Unknown		2.8 J	M	15.026	ug/L
Unknown		6.0 J	M	16.947	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

GC/MS Volatiles

Lot-Sample #...: D1C220263-006 **Work Order #...:** DXTJP1AM **Matrix.....:** WG
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 04/03/01 **Analysis Date..:** 04/03/01
Prep Batch #...: 1094154 **Analysis Time..:** 14:01
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

GC/MS Volatiles

Lot-Sample #...: D1C220263-006 **Work Order #...:** DXTJP1AM **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L
Acrolein	ND	20	ug/L
Ethyl methacrylate	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(80 - 120)
1,2-Dichloroethane-d4	91	(72 - 127)
4-Bromofluorobenzene	106	(79 - 119)
Toluene-d8	101	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-T

GC/MS Volatiles

Lot-Sample #: D1C220263-006 **Work Order #:** DXTJP1AM **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Cyclotrisiloxane, hexamethyl-	541-05-9	1.52 J T2 M	10.061	ug/L
Unknown		2.1 J M	12.834	ug/L
Unknown		1.7 J M	15.062	ug/L
Unknown		4.5 J M	16.965	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

GC/MS Volatiles

Lot-Sample #...: D1C220263-007 **Work Order #...:** DXTJW1AX **Matrix.....:** WG
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 04/03/01 **Analysis Date..:** 04/03/01
Prep Batch #...: 1094154 **Analysis Time..:** 15:17
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

GC/MS Volatiles

Lot-Sample #...: D1C220263-007 **Work Order #...:** DXTJW1AX **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**1.1**	**1.0**	**ug/L**
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L
Acrolein	ND	20	ug/L
Ethyl methacrylate	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(80 - 120)
1,2-Dichloroethane-d4	98	(72 - 127)
4-Bromofluorobenzene	105	(79 - 119)
Toluene-d8	100	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-D

GC/MS Volatiles

Lot-Sample #: D1C220263-007 **Work Order #:** DXTJW1AX **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Cyclotrisiloxane, hexamethyl-	541-05-9	1.72 J T2 M	10.082	ug/L
Unknown		2.6 J M	12.872	ug/L
Unknown		1.4 J M	13.398	ug/L
Unknown		2.4 J M	15.101	ug/L
Unknown		4.1 J M	17.004	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D-TB

GC/MS Volatiles

Lot-Sample #...: D1C220263-008 **Work Order #...:** DXTJ01AA **Matrix.....:** WQ
Date Sampled...: 03/21/01 **Date Received..:** 03/22/01
Prep Date.....: 04/03/01 **Analysis Date..:** 04/03/01
Prep Batch #...: 1094154 **Analysis Time..:** 15:42
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D-TB

GC/MS Volatiles

Lot-Sample #...: D1C220263-008 **Work Order #...:** DXTJ01AA **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L
Acrolein	ND	20	ug/L
Ethyl methacrylate	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(80 - 120)
1,2-Dichloroethane-d4	95	(72 - 127)
4-Bromofluorobenzene	104	(79 - 119)
Toluene-d8	98	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-D-TB

GC/MS Volatiles

Lot-Sample #: D1C220263-008 **Work Order #:** DXTJ01AA **Matrix:** WQ

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Cyclotrisiloxane, hexamethyl-	541-05-9	1.82 J T2 M	10.082	ug/L
Unknown		3.0 J M	12.873	ug/L
Unknown		1.6 J M	15.12	ug/L
Unknown		7.1 J M	17.004	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-TT

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-001 **Work Order #...:** DXTG41AC **Matrix.....:** WG
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 03/23/01 **Analysis Date..:** 03/27/01
Prep Batch #...: 1082235 **Analysis Time..:** 03:36
Dilution Factor: 1

Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Di-n-butyl phthalate	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Phenol	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
bis(2-Chloroethyl)-ether	ND	10	ug/L
bis(2-Chloroethoxy) methane	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
bis(2-Ethylhexyl) phthalate	ND	10	ug/L
2,2'-oxybis(1-Chloropropane)	ND	10	ug/L
4-Methylphenol	ND	10	ug/L
N-Nitrosodi-n-propyl-amine	ND	10	ug/L
Hexachloroethane	ND	10	ug/L
Nitrobenzene	ND	10	ug/L
Isophorone	ND	10	ug/L
2-Nitrophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
1,2,4-Trichloro-benzene	ND	10	ug/L
Naphthalene	ND	10	ug/L
4-Chloroaniline	ND	10	ug/L
Hexachlorobutadiene	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
Hexachlorocyclopenta-diene	ND	50	ug/L
2,4,5-Trichloro-phenol	ND	10	ug/L
2,4,6-Trichloro-phenol	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
Dimethyl phthalate	ND	10	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-TT

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-001 Work Order #...: DXTG41AC Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
2,4-Dinitrophenol	ND	50	ug/L
4-Nitrophenol	ND	50	ug/L
Dibenzofuran	ND	10	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
Diethyl phthalate	ND	10	ug/L
4-Chlorophenyl phenyl ether	ND	10	ug/L
Fluorene	ND	10	ug/L
4-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
4-Bromophenyl phenyl ether	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Anthracene	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Pyrene	ND	10	ug/L
Butyl benzyl phthalate	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	50	ug/L
Benzo(a)anthracene	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-octyl phthalate	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Benzo(ghi)perylene	ND	10	ug/L
4-Chloro-3-methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
Acetophenone	ND	10	ug/L
2-Acetylaminofluorene	ND	100	ug/L
4-Aminobiphenyl	ND	50	ug/L
Aniline	ND	10	ug/L
Aramite	ND	20	ug/L
Benzyl alcohol	ND	10	ug/L
2-sec-Butyl-4,6-dinitro-phenol	ND	20	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-TT

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-001 **Work Order #...:** DXTG41AC **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,6-Dichlorophenol	ND	10	ug/L
4-Dimethylaminoazobenzene	ND	20	ug/L
7,12-Dimethylbenz(a)-anthracene	ND	20	ug/L
3,3'-Dimethylbenzidine	ND	20	ug/L
alpha,alpha-Dimethylphenethylamine	ND	50	ug/L
1,3-Dinitrobenzene	ND	10	ug/L
Diphenylamine	ND	10	ug/L
Ethyl methanesulfonate	ND	10	ug/L
Hexachloropropene	ND	100	ug/L
Isosafrole	ND	20	ug/L
Methapyrilene	ND	50	ug/L
3-Methylcholanthrene	ND	20	ug/L
Methyl methanesulfonate	ND	10	ug/L
3-Methylphenol	ND	10	ug/L
1,4-Naphthoquinone	ND	50	ug/L
1-Naphthylamine	ND	10	ug/L
2-Naphthylamine	ND	10	ug/L
N-Nitrosodi-n-butylamine	ND	10	ug/L
N-Nitrosodiethylamine	ND	10	ug/L
N-Nitrosodimethylamine	ND	10	ug/L
N-Nitrosomethylethylamine	ND	10	ug/L
N-Nitrosomorpholine	ND	10	ug/L
N-Nitrosopiperidine	ND	10	ug/L
N-Nitrosopyrrolidine	ND	10	ug/L
5-Nitro-o-toluidine	ND	20	ug/L
Pentachlorobenzene	ND	10	ug/L
Pentachloroethane	ND	50	ug/L
Pentachloronitrobenzene	ND	50	ug/L
Phenacetin	ND	20	ug/L
2-Picoline	ND	20	ug/L
Pronamide	ND	20	ug/L
Pyridine	ND	20	ug/L
Safrole	ND	20	ug/L
1,2,4,5-Tetrachloro-benzene	ND	10	ug/L
2,3,4,6-Tetrachlorophenol	ND	50	ug/L
2-Toluidine	ND	10	ug/L
1,3,5-Trinitrobenzene	ND	50	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-TT

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-001 Work Order #...: DXTG41AC Matrix.....: WG

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	71	(37 - 90)
Phenol-d5	70	(41 - 91)
Nitrobenzene-d5	68	(43 - 94)
2-Fluorobiphenyl	69	(33 - 90)
2,4,6-Tribromophenol	75	(42 - 103)
Terphenyl-d14	67	(29 - 112)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-002 Work Order #...: DXTH51AN Matrix.....: WG
Date Sampled...: 03/21/01 14:55 Date Received..: 03/22/01
Prep Date.....: 03/23/01 Analysis Date..: 03/27/01
Prep Batch #...: 1082235 Analysis Time..: 04:04
Dilution Factor: 1

Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Di-n-butyl phthalate	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Phenol	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
bis(2-Chloroethyl)-ether	ND	10	ug/L
bis(2-Chloroethoxy) methane	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
bis(2-Ethylhexyl) phthalate	ND	10	ug/L
2,2'-oxybis(1-Chloropropane)	ND	10	ug/L
4-Methylphenol	ND	10	ug/L
N-Nitrosodi-n-propyl-amine	ND	10	ug/L
Hexachloroethane	ND	10	ug/L
Nitrobenzene	ND	10	ug/L
Isophorone	ND	10	ug/L
2-Nitrophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
1,2,4-Trichloro-benzene	ND	10	ug/L
Naphthalene	ND	10	ug/L
4-Chloroaniline	ND	10	ug/L
Hexachlorobutadiene	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
Hexachlorocyclopenta-diene	ND	50	ug/L
2,4,5-Trichloro-phenol	ND	10	ug/L
2,4,6-Trichloro-phenol	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
Dimethyl phthalate	ND	10	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-002 Work Order #...: DXTH51AN Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
2,4-Dinitrophenol	ND	50	ug/L
4-Nitrophenol	ND	50	ug/L
Dibenzofuran	ND	10	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
Diethyl phthalate	ND	10	ug/L
4-Chlorophenyl phenyl ether	ND	10	ug/L
Fluorene	ND	10	ug/L
4-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
4-Bromophenyl phenyl ether	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Anthracene	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Pyrene	ND	10	ug/L
Butyl benzyl phthalate	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	50	ug/L
Benzo(a)anthracene	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-octyl phthalate	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Benzo(ghi)perylene	ND	10	ug/L
4-Chloro-3-methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
Acetophenone	ND	10	ug/L
2-Acetylaminofluorene	ND	100	ug/L
4-Aminobiphenyl	ND	50	ug/L
Aniline	ND	10	ug/L
Aramite	ND	20	ug/L
Benzyl alcohol	ND	10	ug/L
2-sec-Butyl-4,6-dinitro-phenol	ND	20	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-002 Work Order #...: DXTH51AN Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,6-Dichlorophenol	ND	10	ug/L
4-Dimethylaminoazobenzene	ND	20	ug/L
7,12-Dimethylbenz(a)-anthracene	ND	20	ug/L
3,3'-Dimethylbenzidine	ND	20	ug/L
alpha,alpha-Dimethylphenethylamine	ND	50	ug/L
1,3-Dinitrobenzene	ND	10	ug/L
Diphenylamine	ND	10	ug/L
Ethyl methanesulfonate	ND	10	ug/L
Hexachloropropene	ND	100	ug/L
Isosafrole	ND	20	ug/L
Methapyrilene	ND	50	ug/L
3-Methylcholanthrene	ND	20	ug/L
Methyl methanesulfonate	ND	10	ug/L
3-Methylphenol	ND	10	ug/L
1,4-Naphthoquinone	ND	50	ug/L
1-Naphthylamine	ND	10	ug/L
2-Naphthylamine	ND	10	ug/L
N-Nitrosodi-n-butylamine	ND	10	ug/L
N-Nitrosodiethylamine	ND	10	ug/L
N-Nitrosodimethylamine	ND	10	ug/L
N-Nitrosomethylethylamine	ND	10	ug/L
N-Nitrosomorpholine	ND	10	ug/L
N-Nitrosopiperidine	ND	10	ug/L
N-Nitrosopyrrolidine	ND	10	ug/L
5-Nitro-o-toluidine	ND	20	ug/L
Pentachlorobenzene	ND	10	ug/L
Pentachloroethane	ND	50	ug/L
Pentachloronitrobenzene	ND	50	ug/L
Phenacetin	ND	20	ug/L
2-Picoline	ND	20	ug/L
Pronamide	ND	20	ug/L
Pyridine	ND	20	ug/L
Safrole	ND	20	ug/L
1,2,4,5-Tetrachloro-benzene	ND	10	ug/L
2,3,4,6-Tetrachlorophenol	ND	50	ug/L
2-Toluidine	ND	10	ug/L
1,3,5-Trinitrobenzene	ND	50	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-002 **Work Order #...:** DXTH51AN **Matrix.....:** WG

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	51	(37 - 90)
Phenol-d5	49	(41 - 91)
Nitrobenzene-d5	48	(43 - 94)
2-Fluorobiphenyl	51	(33 - 90)
2,4,6-Tribromophenol	61	(42 - 103)
Terphenyl-d14	57	(29 - 112)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-003 Work Order #...: DXTJD1AN Matrix.....: WG
Date Sampled...: 03/21/01 10:20 Date Received..: 03/22/01
Prep Date.....: 03/26/01 Analysis Date..: 03/28/01
Prep Batch #...: 1085169 Analysis Time..: 18:45
Dilution Factor: 1

Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Di-n-butyl phthalate	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Phenol	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
bis(2-Chloroethyl)-ether	ND	10	ug/L
bis(2-Chloroethoxy) methane	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
bis(2-Ethylhexyl) phthalate	ND	10	ug/L
2,2'-oxybis(1-Chloropropane)	ND	10	ug/L
4-Methylphenol	ND	10	ug/L
N-Nitrosodi-n-propyl-amine	ND	10	ug/L
Hexachloroethane	ND	10	ug/L
Nitrobenzene	ND	10	ug/L
Isophorone	ND	10	ug/L
2-Nitrophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
1,2,4-Trichloro-benzene	ND	10	ug/L
Naphthalene	ND	10	ug/L
4-Chloroaniline	ND	10	ug/L
Hexachlorobutadiene	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
Hexachlorocyclopenta-diene	ND	50	ug/L
2,4,5-Trichloro-phenol	ND	10	ug/L
2,4,6-Trichloro-phenol	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
Dimethyl phthalate	ND	10	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-003 Work Order #...: DXTJD1AN Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
2,4-Dinitrophenol	ND	50	ug/L
4-Nitrophenol	ND	50	ug/L
Dibenzofuran	ND	10	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
Diethyl phthalate	ND	10	ug/L
4-Chlorophenyl phenyl ether	ND	10	ug/L
Fluorene	ND	10	ug/L
4-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
4-Bromophenyl phenyl ether	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Anthracene	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Pyrene	ND	10	ug/L
Butyl benzyl phthalate	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	50	ug/L
Benzo(a)anthracene	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-octyl phthalate	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Benzo(ghi)perylene	ND	10	ug/L
4-Chloro-3-methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
Acetophenone	ND	10	ug/L
2-Acetylaminofluorene	ND	100	ug/L
4-Aminobiphenyl	ND	50	ug/L
Aniline	ND	10	ug/L
Aramite	ND	20	ug/L
Benzyl alcohol	ND	10	ug/L
2-sec-Butyl-4,6-dinitro-phenol	ND	20	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-003 Work Order #...: DXTJD1AN Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,6-Dichlorophenol	ND	10	ug/L
4-Dimethylaminoazobenzene	ND	20	ug/L
7,12-Dimethylbenz(a)-anthracene	ND	20	ug/L
3,3'-Dimethylbenzidine	ND	20	ug/L
alpha,alpha-Dimethylphenethylamine	ND	50	ug/L
1,3-Dinitrobenzene	ND	10	ug/L
Diphenylamine	ND	10	ug/L
Ethyl methanesulfonate	ND	10	ug/L
Hexachloropropene	ND	100	ug/L
Isosafrole	ND	20	ug/L
Methapyrilene	ND	50	ug/L
3-Methylcholanthrene	ND	20	ug/L
Methyl methanesulfonate	ND	10	ug/L
3-Methylphenol	ND	10	ug/L
1,4-Naphthoquinone	ND	50	ug/L
1-Naphthylamine	ND	10	ug/L
2-Naphthylamine	ND	10	ug/L
N-Nitrosodi-n-butylamine	ND	10	ug/L
N-Nitrosodiethylamine	ND	10	ug/L
N-Nitrosodimethylamine	ND	10	ug/L
N-Nitrosomethylethylamine	ND	10	ug/L
N-Nitrosomorpholine	ND	10	ug/L
N-Nitrosopiperidine	ND	10	ug/L
N-Nitrosopyrrolidine	ND	10	ug/L
5-Nitro-o-toluidine	ND	20	ug/L
Pentachlorobenzene	ND	10	ug/L
Pentachloroethane	ND	50	ug/L
Pentachloronitrobenzene	ND	50	ug/L
Phenacetin	ND	20	ug/L
2-Picoline	ND	20	ug/L
Pronamide	ND	20	ug/L
Pyridine	ND	20	ug/L
Safrole	ND	20	ug/L
1,2,4,5-Tetrachloro-benzene	ND	10	ug/L
2,3,4,6-Tetrachlorophenol	ND	50	ug/L
2-Toluidine	ND	10	ug/L
1,3,5-Trinitrobenzene	ND	50	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-003 **Work Order #...:** DXTJD1AN **Matrix.....:** WG

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	84	(37 - 90)
Phenol-d5	87	(41 - 91)
Nitrobenzene-d5	87	(43 - 94)
2-Fluorobiphenyl	78	(33 - 90)
2,4,6-Tribromophenol	95	(42 - 103)
Terphenyl-d14	86	(29 - 112)

US GEOLOGICAL SURVEY

CAFB-C

GC/MS Semivolatiles

Lot-Sample #: D1C220263-003 **Work Order #:** DXTJD1AN **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		4.5 J	M	2.8645	ug/L
Unknown		13 J	M	3.2491	ug/L
Unknown		60 J	M	1.8655	ug/L
Unknown		13 J	M	2.3516	ug/L
Unknown		14 J	M	12.95	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-005 **Work Order #...:** DXTJG1A0 **Matrix.....:** WG
Date Sampled...: 03/21/01 13:45 **Date Received..:** 03/22/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085169 **Analysis Time..:** 19:08
Dilution Factor: 1

Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Di-n-butyl phthalate	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Phenol	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
bis(2-Chloroethyl)-ether	ND	10	ug/L
bis(2-Chloroethoxy) methane	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
bis(2-Ethylhexyl) phthalate	ND	10	ug/L
2,2'-oxybis(1-Chloropropane)	ND	10	ug/L
4-Methylphenol	ND	10	ug/L
N-Nitrosodi-n-propyl-amine	ND	10	ug/L
Hexachloroethane	ND	10	ug/L
Nitrobenzene	ND	10	ug/L
Isophorone	ND	10	ug/L
2-Nitrophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
1,2,4-Trichloro-benzene	ND	10	ug/L
Naphthalene	ND	10	ug/L
4-Chloroaniline	ND	10	ug/L
Hexachlorobutadiene	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
Hexachlorocyclopenta-diene	ND	50	ug/L
2,4,5-Trichloro-phenol	ND	10	ug/L
2,4,6-Trichloro-phenol	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
Dimethyl phthalate	ND	10	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-005 **Work Order #...:** DXTJG1A0 **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
2,4-Dinitrophenol	ND	50	ug/L
4-Nitrophenol	ND	50	ug/L
Dibenzofuran	ND	10	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
Diethyl phthalate	ND	10	ug/L
4-Chlorophenyl phenyl ether	ND	10	ug/L
Fluorene	ND	10	ug/L
4-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
4-Bromophenyl phenyl ether	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Anthracene	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Pyrene	ND	10	ug/L
Butyl benzyl phthalate	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	50	ug/L
Benzo(a)anthracene	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-octyl phthalate	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Benzo(ghi)perylene	ND	10	ug/L
4-Chloro-3-methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
Acetophenone	ND	10	ug/L
2-Acetylaminofluorene	ND	100	ug/L
4-Aminobiphenyl	ND	50	ug/L
Aniline	ND	10	ug/L
Aramite	ND	20	ug/L
Benzyl alcohol	ND	10	ug/L
2-sec-Butyl-4,6-dinitro-phenol	ND	20	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-005 Work Order #...: DXTJG1A0 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,6-Dichlorophenol	ND	10	ug/L
4-Dimethylaminoazobenzene	ND	20	ug/L
7,12-Dimethylbenz(a)-anthracene	ND	20	ug/L
3,3'-Dimethylbenzidine	ND	20	ug/L
alpha,alpha-Dimethylphenethylamine	ND	50	ug/L
1,3-Dinitrobenzene	ND	10	ug/L
Diphenylamine	ND	10	ug/L
Ethyl methanesulfonate	ND	10	ug/L
Hexachloropropene	ND	100	ug/L
Isosafrole	ND	20	ug/L
Methapyrilene	ND	50	ug/L
3-Methylcholanthrene	ND	20	ug/L
Methyl methanesulfonate	ND	10	ug/L
3-Methylphenol	ND	10	ug/L
1,4-Naphthoquinone	ND	50	ug/L
1-Naphthylamine	ND	10	ug/L
2-Naphthylamine	ND	10	ug/L
N-Nitrosodi-n-butylamine	ND	10	ug/L
N-Nitrosodiethylamine	ND	10	ug/L
N-Nitrosodimethylamine	ND	10	ug/L
N-Nitrosomethylethylamine	ND	10	ug/L
N-Nitrosomorpholine	ND	10	ug/L
N-Nitrosopiperidine	ND	10	ug/L
N-Nitrosopyrrolidine	ND	10	ug/L
5-Nitro-o-toluidine	ND	20	ug/L
Pentachlorobenzene	ND	10	ug/L
Pentachloroethane	ND	50	ug/L
Pentachloronitrobenzene	ND	50	ug/L
Phenacetin	ND	20	ug/L
2-Picoline	ND	20	ug/L
Pronamide	ND	20	ug/L
Pyridine	ND	20	ug/L
Safrole	ND	20	ug/L
1,2,4,5-Tetrachloro-benzene	ND	10	ug/L
2,3,4,6-Tetrachlorophenol	ND	50	ug/L
2-Toluidine	ND	10	ug/L
1,3,5-Trinitrobenzene	ND	50	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-005 Work Order #...: DXTJG1A0 Matrix.....: WG

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	83	(37 - 90)
Phenol-d5	84	(41 - 91)
Nitrobenzene-d5	86	(43 - 94)
2-Fluorobiphenyl	78	(33 - 90)
2,4,6-Tribromophenol	95	(42 - 103)
Terphenyl-d14	78	(29 - 112)

US GEOLOGICAL SURVEY

CAFB-B

GC/MS Semivolatiles

Lot-Sample #: D1C220263-005 **Work Order #:** DXTJG1A0 **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		17 J	M	1.6255	ug/L
Unknown		12 J	M	1.7164	ug/L
Unknown		7.7 J	M	2.3521	ug/L
Unknown		5.7 J	M	2.8275	ug/L
Unknown		4.4 J	M	2.8649	ug/L
Unknown		4.5 J	M	2.9878	ug/L
Unknown		15 J	M	3.2442	ug/L
Unknown		7.4 J	M	12.94	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-006 Work Order #...: DXTJP1AN Matrix.....: WG
Date Sampled...: 03/21/01 11:50 Date Received..: 03/22/01
Prep Date.....: 03/23/01 Analysis Date..: 03/27/01
Prep Batch #...: 1082235 Analysis Time..: 04:33
Dilution Factor: 1

Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Di-n-butyl phthalate	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Phenol	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
bis(2-Chloroethyl)-ether	ND	10	ug/L
bis(2-Chloroethoxy) methane	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
bis(2-Ethylhexyl) phthalate	ND	10	ug/L
2,2'-oxybis(1-Chloropropane)	ND	10	ug/L
4-Methylphenol	ND	10	ug/L
N-Nitrosodi-n-propyl-amine	ND	10	ug/L
Hexachloroethane	ND	10	ug/L
Nitrobenzene	ND	10	ug/L
Isophorone	ND	10	ug/L
2-Nitrophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
1,2,4-Trichloro-benzene	ND	10	ug/L
Naphthalene	ND	10	ug/L
4-Chloroaniline	ND	10	ug/L
Hexachlorobutadiene	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
Hexachlorocyclopenta-diene	ND	50	ug/L
2,4,5-Trichloro-phenol	ND	10	ug/L
2,4,6-Trichloro-phenol	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
Dimethyl phthalate	ND	10	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-006 Work Order #...: DXTJP1AN Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
2,4-Dinitrophenol	ND	50	ug/L
4-Nitrophenol	ND	50	ug/L
Dibenzofuran	ND	10	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
Diethyl phthalate	ND	10	ug/L
4-Chlorophenyl phenyl ether	ND	10	ug/L
Fluorene	ND	10	ug/L
4-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
4-Bromophenyl phenyl ether	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Anthracene	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Pyrene	ND	10	ug/L
Butyl benzyl phthalate	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	50	ug/L
Benzo(a)anthracene	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-octyl phthalate	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Benzo(ghi)perylene	ND	10	ug/L
4-Chloro-3-methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
Acetophenone	ND	10	ug/L
2-Acetylaminofluorene	ND	100	ug/L
4-Aminobiphenyl	ND	50	ug/L
Aniline	ND	10	ug/L
Aramite	ND	20	ug/L
Benzyl alcohol	ND	10	ug/L
2-sec-Butyl-4,6-dinitro-phenol	ND	20	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-006 Work Order #...: DXTJP1AN Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,6-Dichlorophenol	ND	10	ug/L
4-Dimethylaminoazobenzene	ND	20	ug/L
7,12-Dimethylbenz(a)-anthracene	ND	20	ug/L
3,3'-Dimethylbenzidine	ND	20	ug/L
alpha,alpha-Dimethylphenethylamine	ND	50	ug/L
1,3-Dinitrobenzene	ND	10	ug/L
Diphenylamine	ND	10	ug/L
Ethyl methanesulfonate	ND	10	ug/L
Hexachloropropene	ND	100	ug/L
Isosafrole	ND	20	ug/L
Methapyrilene	ND	50	ug/L
3-Methylcholanthrene	ND	20	ug/L
Methyl methanesulfonate	ND	10	ug/L
3-Methylphenol	ND	10	ug/L
1,4-Naphthoquinone	ND	50	ug/L
1-Naphthylamine	ND	10	ug/L
2-Naphthylamine	ND	10	ug/L
N-Nitrosodi-n-butylamine	ND	10	ug/L
N-Nitrosodiethylamine	ND	10	ug/L
N-Nitrosodimethylamine	ND	10	ug/L
N-Nitrosomethylethylamine	ND	10	ug/L
N-Nitrosomorpholine	ND	10	ug/L
N-Nitrosopiperidine	ND	10	ug/L
N-Nitrosopyrrolidine	ND	10	ug/L
5-Nitro-o-toluidine	ND	20	ug/L
Pentachlorobenzene	ND	10	ug/L
Pentachloroethane	ND	50	ug/L
Pentachloronitrobenzene	ND	50	ug/L
Phenacetin	ND	20	ug/L
2-Picoline	ND	20	ug/L
Pronamide	ND	20	ug/L
Pyridine	ND	20	ug/L
Safrole	ND	20	ug/L
1,2,4,5-Tetrachloro-benzene	ND	10	ug/L
2,3,4,6-Tetrachlorophenol	ND	50	ug/L
2-Toluidine	ND	10	ug/L
1,3,5-Trinitrobenzene	ND	50	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-006 **Work Order #...:** DXTJP1AN **Matrix.....:** WG

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	75	(37 - 90)
Phenol-d5	74	(41 - 91)
Nitrobenzene-d5	72	(43 - 94)
2-Fluorobiphenyl	75	(33 - 90)
2,4,6-Tribromophenol	77	(42 - 103)
Terphenyl-d14	65	(29 - 112)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-007 Work Order #...: DXTJW1A0 Matrix.....: WG
Date Sampled...: 03/21/01 11:50 Date Received..: 03/22/01
Prep Date.....: 03/26/01 Analysis Date..: 03/28/01
Prep Batch #...: 1085169 Analysis Time..: 19:31
Dilution Factor: 1

Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Di-n-butyl phthalate	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Phenol	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
bis(2-Chloroethyl)-ether	ND	10	ug/L
bis(2-Chloroethoxy) methane	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
bis(2-Ethylhexyl) phthalate	ND	10	ug/L
2,2'-oxybis(1-Chloropropane)	ND	10	ug/L
4-Methylphenol	ND	10	ug/L
N-Nitrosodi-n-propyl-amine	ND	10	ug/L
Hexachloroethane	ND	10	ug/L
Nitrobenzene	ND	10	ug/L
Isophorone	ND	10	ug/L
2-Nitrophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
1,2,4-Trichloro-benzene	ND	10	ug/L
Naphthalene	ND	10	ug/L
4-Chloroaniline	ND	10	ug/L
Hexachlorobutadiene	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
Hexachlorocyclopenta-diene	ND	50	ug/L
2,4,5-Trichloro-phenol	ND	10	ug/L
2,4,6-Trichloro-phenol	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
Dimethyl phthalate	ND	10	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-007 Work Order #...: DXTJW1A0 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
2,4-Dinitrophenol	ND	50	ug/L
4-Nitrophenol	ND	50	ug/L
Dibenzofuran	ND	10	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
Diethyl phthalate	ND	10	ug/L
4-Chlorophenyl phenyl ether	ND	10	ug/L
Fluorene	ND	10	ug/L
4-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
4-Bromophenyl phenyl ether	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Anthracene	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Pyrene	ND	10	ug/L
Butyl benzyl phthalate	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	50	ug/L
Benzo(a)anthracene	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-octyl phthalate	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Benzo(ghi)perylene	ND	10	ug/L
4-Chloro-3-methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
Acetophenone	ND	10	ug/L
2-Acetylaminofluorene	ND	100	ug/L
4-Aminobiphenyl	ND	50	ug/L
Aniline	ND	10	ug/L
Amite	ND	20	ug/L
Benzyl alcohol	ND	10	ug/L
2-sec-Butyl-4,6-dinitro-phenol	ND	20	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-007 **Work Order #...:** DXTJW1A0 **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,6-Dichlorophenol	ND	10	ug/L
4-Dimethylaminoazobenzene	ND	20	ug/L
7,12-Dimethylbenz(a)-anthracene	ND	20	ug/L
3,3'-Dimethylbenzidine	ND	20	ug/L
alpha,alpha-Dimethylphenethylamine	ND	50	ug/L
1,3-Dinitrobenzene	ND	10	ug/L
Diphenylamine	ND	10	ug/L
Ethyl methanesulfonate	ND	10	ug/L
Hexachloropropene	ND	100	ug/L
Isosafrole	ND	20	ug/L
Methapyrilene	ND	50	ug/L
3-Methylcholanthrene	ND	20	ug/L
Methyl methanesulfonate	ND	10	ug/L
3-Methylphenol	ND	10	ug/L
1,4-Naphthoquinone	ND	50	ug/L
1-Naphthylamine	ND	10	ug/L
2-Naphthylamine	ND	10	ug/L
N-Nitrosodi-n-butylamine	ND	10	ug/L
N-Nitrosodiethylamine	ND	10	ug/L
N-Nitrosodimethylamine	ND	10	ug/L
N-Nitrosomethylethylamine	ND	10	ug/L
N-Nitrosomorpholine	ND	10	ug/L
N-Nitrosopiperidine	ND	10	ug/L
N-Nitrosopyrrolidine	ND	10	ug/L
5-Nitro-o-toluidine	ND	20	ug/L
Pentachlorobenzene	ND	10	ug/L
Pentachloroethane	ND	50	ug/L
Pentachloronitrobenzene	ND	50	ug/L
Phenacetin	ND	20	ug/L
2-Picoline	ND	20	ug/L
Pronamide	ND	20	ug/L
Pyridine	ND	20	ug/L
Safrole	ND	20	ug/L
1,2,4,5-Tetrachloro-benzene	ND	10	ug/L
2,3,4,6-Tetrachlorophenol	ND	50	ug/L
2-Toluidine	ND	10	ug/L
1,3,5-Trinitrobenzene	ND	50	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

GC/MS Semivolatiles

Lot-Sample #...: D1C220263-007 Work Order #...: DXTJW1A0 Matrix.....: WG

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	85	(37 - 90)
Phenol-d5	88	(41 - 91)
Nitrobenzene-d5	86	(43 - 94)
2-Fluorobiphenyl	73	(33 - 90)
2,4,6-Tribromophenol	86	(42 - 103)
Terphenyl-d14	81	(29 - 112)

US GEOLOGICAL SURVEY

CAFB-D

GC/MS Semivolatiles

Lot-Sample #: D1C220263-007 **Work Order #:** DXTJW1A0 **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		65 J	M	1.8664	ug/L
Unknown		10 J	M	2.3525	ug/L
Unknown		11 J	M	3.25	ug/L
Unknown		8.8 J	M	4.0834	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-TT

GC Semivolatiles

Lot-Sample #...: D1C220263-001 Work Order #...: DXTG41AD Matrix.....: WG
Date Sampled...: 03/21/01 11:50 Date Received..: 03/22/01
Prep Date.....: 03/26/01 Analysis Date..: 03/28/01
Prep Batch #...: 1085198 Analysis Time..: 10:57
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diallate	ND	1.0	ug/L
Isodrin	ND	0.10	ug/L
Kepone	ND	1.0	ug/L
Aldrin	ND	0.050	ug/L
alpha-BHC	ND	0.050	ug/L
beta-BHC	ND	0.050	ug/L
delta-BHC	ND	0.050	ug/L
gamma-BHC (Lindane)	ND	0.050	ug/L
alpha-Chlordane	ND	0.050	ug/L
gamma-Chlordane	ND	0.050	ug/L
4,4'-DDD	ND	0.050	ug/L
4,4'-DDE	ND	0.050	ug/L
4,4'-DDT	ND	0.050	ug/L
Dieldrin	ND	0.050	ug/L
Endosulfan I	ND	0.050	ug/L
Endosulfan II	ND	0.050	ug/L
Endosulfan sulfate	ND	0.050	ug/L
Endrin	ND	0.050	ug/L
Endrin aldehyde	ND	0.050	ug/L
Heptachlor	ND	0.050	ug/L
Heptachlor epoxide	ND	0.050	ug/L
Methoxychlor	ND	0.10	ug/L
Toxaphene	ND	2.0	ug/L
Endrin ketone	ND	0.050	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	102	(15 - 162)
Tetrachloro-m-xylene	94	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

GC Semivolatiles

Lot-Sample #...: D1C220263-002 Work Order #...: DXTH51AP Matrix.....: WG
Date Sampled...: 03/21/01 14:55 Date Received..: 03/22/01
Prep Date.....: 03/26/01 Analysis Date..: 03/28/01
Prep Batch #...: 1085198 Analysis Time..: 11:26
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diallate	ND	1.0	ug/L
Isodrin	ND	0.10	ug/L
Kepone	ND	1.0	ug/L
Aldrin	ND	0.050	ug/L
alpha-BHC	ND	0.050	ug/L
beta-BHC	ND	0.050	ug/L
delta-BHC	ND	0.050	ug/L
gamma-BHC (Lindane)	ND	0.050	ug/L
alpha-Chlordane	ND	0.050	ug/L
gamma-Chlordane	ND	0.050	ug/L
4,4'-DDD	ND	0.050	ug/L
4,4'-DDE	ND	0.050	ug/L
4,4'-DDT	ND	0.050	ug/L
Dieldrin	ND	0.050	ug/L
Endosulfan I	ND	0.050	ug/L
Endosulfan II	ND	0.050	ug/L
Endosulfan sulfate	ND	0.050	ug/L
Endrin	ND	0.050	ug/L
Endrin aldehyde	ND	0.050	ug/L
Heptachlor	ND	0.050	ug/L
Heptachlor epoxide	ND	0.050	ug/L
Methoxychlor	ND	0.10	ug/L
Toxaphene	ND	2.0	ug/L
Endrin ketone	ND	0.050	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	103	(15 - 162)
Tetrachloro-m-xylene	95	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

GC Semivolatiles

Lot-Sample #...: D1C220263-003 Work Order #...: DXTJD1AP Matrix.....: WG
Date Sampled...: 03/21/01 10:20 Date Received..: 03/22/01
Prep Date.....: 03/26/01 Analysis Date..: 03/28/01
Prep Batch #...: 1085198 Analysis Time..: 11:56
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diallate	ND	1.0	ug/L
Isodrin	ND	0.10	ug/L
Kepone	ND	1.0	ug/L
Aldrin	ND	0.050	ug/L
alpha-BHC	ND	0.050	ug/L
beta-BHC	ND	0.050	ug/L
delta-BHC	ND	0.050	ug/L
gamma-BHC (Lindane)	ND	0.050	ug/L
alpha-Chlordane	ND	0.050	ug/L
gamma-Chlordane	ND	0.050	ug/L
4,4'-DDD	ND	0.050	ug/L
4,4'-DDE	ND	0.050	ug/L
4,4'-DDT	ND	0.050	ug/L
Dieldrin	ND	0.050	ug/L
Endosulfan I	ND	0.050	ug/L
Endosulfan II	ND	0.050	ug/L
Endosulfan sulfate	ND	0.050	ug/L
Endrin	ND	0.050	ug/L
Endrin aldehyde	ND	0.050	ug/L
Heptachlor	ND	0.050	ug/L
Heptachlor epoxide	ND	0.050	ug/L
Methoxychlor	ND	0.10	ug/L
Toxaphene	ND	2.0	ug/L
Endrin ketone	ND	0.050	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	106	(15 - 162)
Tetrachloro-m-xylene	96	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

GC Semivolatiles

Lot-Sample #...: D1C220263-005 **Work Order #...:** DXTJG1A1 **Matrix.....:** WG
Date Sampled...: 03/21/01 13:45 **Date Received..:** 03/22/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085198 **Analysis Time..:** 12:25
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diallate	ND	1.0	ug/L
Isodrin	ND	0.10	ug/L
Kepone	ND	1.0	ug/L
Aldrin	ND	0.050	ug/L
alpha-BHC	ND	0.050	ug/L
beta-BHC	ND	0.050	ug/L
delta-BHC	ND	0.050	ug/L
gamma-BHC (Lindane)	ND	0.050	ug/L
alpha-Chlordane	ND	0.050	ug/L
gamma-Chlordane	ND	0.050	ug/L
4,4'-DDD	ND	0.050	ug/L
4,4'-DDE	ND	0.050	ug/L
4,4'-DDT	ND	0.050	ug/L
Dieldrin	ND	0.050	ug/L
Endosulfan I	ND	0.050	ug/L
Endosulfan II	ND	0.050	ug/L
Endosulfan sulfate	ND	0.050	ug/L
Endrin	ND	0.050	ug/L
Endrin aldehyde	ND	0.050	ug/L
Heptachlor	ND	0.050	ug/L
Heptachlor epoxide	ND	0.050	ug/L
Methoxychlor	ND	0.10	ug/L
Toxaphene	ND	2.0	ug/L
Endrin ketone	ND	0.050	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	110	(15 - 162)
Tetrachloro-m-xylene	101	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

GC Semivolatiles

Lot-Sample #...: D1C220263-006 Work Order #...: DXTJP1AP Matrix.....: WG
Date Sampled...: 03/21/01 11:50 Date Received..: 03/22/01
Prep Date.....: 03/26/01 Analysis Date..: 03/28/01
Prep Batch #...: 1085198 Analysis Time..: 12:55
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diallate	ND	1.0	ug/L
Isodrin	ND	0.10	ug/L
Kepone	ND	1.0	ug/L
Aldrin	ND	0.050	ug/L
alpha-BHC	ND	0.050	ug/L
beta-BHC	ND	0.050	ug/L
delta-BHC	ND	0.050	ug/L
gamma-BHC (Lindane)	ND	0.050	ug/L
alpha-Chlordane	ND	0.050	ug/L
gamma-Chlordane	ND	0.050	ug/L
4,4'-DDD	ND	0.050	ug/L
4,4'-DDE	ND	0.050	ug/L
4,4'-DDT	ND	0.050	ug/L
Dieldrin	ND	0.050	ug/L
Endosulfan I	ND	0.050	ug/L
Endosulfan II	ND	0.050	ug/L
Endosulfan sulfate	ND	0.050	ug/L
Endrin	ND	0.050	ug/L
Endrin aldehyde	ND	0.050	ug/L
Heptachlor	ND	0.050	ug/L
Heptachlor epoxide	ND	0.050	ug/L
Methoxychlor	ND	0.10	ug/L
Toxaphene	ND	2.0	ug/L
Endrin ketone	ND	0.050	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	102	(15 - 162)
Tetrachloro-m-xylene	94	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

GC Semivolatiles

Lot-Sample #...: D1C220263-007 **Work Order #...:** DXTJW1A1 **Matrix.....:** WG
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085198 **Analysis Time..:** 16:23
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diallate	ND	1.0	ug/L
Isodrin	ND	0.10	ug/L
Kepone	ND	1.0	ug/L
Aldrin	ND	0.050	ug/L
alpha-BHC	ND	0.050	ug/L
beta-BHC	ND	0.050	ug/L
delta-BHC	ND	0.050	ug/L
gamma-BHC (Lindane)	ND	0.050	ug/L
alpha-Chlordane	ND	0.050	ug/L
gamma-Chlordane	ND	0.050	ug/L
4,4'-DDD	ND	0.050	ug/L
4,4'-DDE	ND	0.050	ug/L
4,4'-DDT	ND	0.050	ug/L
Dieldrin	ND	0.050	ug/L
Endosulfan I	ND	0.050	ug/L
Endosulfan II	ND	0.050	ug/L
Endosulfan sulfate	ND	0.050	ug/L
Endrin	ND	0.050	ug/L
Endrin aldehyde	ND	0.050	ug/L
Heptachlor	ND	0.050	ug/L
Heptachlor epoxide	ND	0.050	ug/L
Methoxychlor	ND	0.10	ug/L
Toxaphene	ND	2.0	ug/L
Endrin ketone	ND	0.050	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	107	(15 - 162)
Tetrachloro-m-xylene	94	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-TT

GC Semivolatiles

Lot-Sample #...: D1C220263-001 Work Order #...: DXTG41AE Matrix.....: WG
Date Sampled...: 03/21/01 11:50 Date Received..: 03/22/01
Prep Date.....: 03/26/01 Analysis Date..: 03/27/01
Prep Batch #...: 1085201 Analysis Time..: 22:50
Dilution Factor: 1

Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	1.0	ug/L
Aroclor 1221	ND	1.0	ug/L
Aroclor 1232	ND	1.0	ug/L
Aroclor 1242	ND	1.0	ug/L
Aroclor 1248	ND	1.0	ug/L
Aroclor 1254	ND	1.0	ug/L
Aroclor 1260	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	97	(52 - 129)
Tetrachloro-m-xylene	89	(54 - 113)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

GC Semivolatiles

Lot-Sample #...: D1C220263-002 **Work Order #...:** DXTH51AQ **Matrix.....:** WG
Date Sampled...: 03/21/01 14:55 **Date Received..:** 03/22/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/27/01
Prep Batch #...: 1085201 **Analysis Time..:** 23:24
Dilution Factor: 1

Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	1.0	ug/L
Aroclor 1221	ND	1.0	ug/L
Aroclor 1232	ND	1.0	ug/L
Aroclor 1242	ND	1.0	ug/L
Aroclor 1248	ND	1.0	ug/L
Aroclor 1254	ND	1.0	ug/L
Aroclor 1260	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	99	(52 - 129)
Tetrachloro-m-xylene	90	(54 - 113)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

GC Semivolatiles

Lot-Sample #...: D1C220263-003 **Work Order #...:** DXTJD1AQ **Matrix.....:** WG
Date Sampled...: 03/21/01 10:20 **Date Received..:** 03/22/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/27/01
Prep Batch #...: 1085201 **Analysis Time..:** 23:58
Dilution Factor: 1

Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	1.0	ug/L
Aroclor 1221	ND	1.0	ug/L
Aroclor 1232	ND	1.0	ug/L
Aroclor 1242	ND	1.0	ug/L
Aroclor 1248	ND	1.0	ug/L
Aroclor 1254	ND	1.0	ug/L
Aroclor 1260	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	103	(52 - 129)
Tetrachloro-m-xylene	94	(54 - 113)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

GC Semivolatiles

Lot-Sample #...: D1C220263-005 **Work Order #...:** DXTJG1A2 **Matrix.....:** WG
Date Sampled...: 03/21/01 13:45 **Date Received..:** 03/22/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085201 **Analysis Time..:** 00:31
Dilution Factor: 1

Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	1.0	ug/L
Aroclor 1221	ND	1.0	ug/L
Aroclor 1232	ND	1.0	ug/L
Aroclor 1242	ND	1.0	ug/L
Aroclor 1248	ND	1.0	ug/L
Aroclor 1254	ND	1.0	ug/L
Aroclor 1260	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	104	(52 - 129)
Tetrachloro-m-xylene	96	(54 - 113)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

GC Semivolatiles

Lot-Sample #...: D1C220263-006 Work Order #...: DXTJP1AQ Matrix.....: WG
Date Sampled...: 03/21/01 11:50 Date Received..: 03/22/01
Prep Date.....: 03/26/01 Analysis Date..: 03/28/01
Prep Batch #...: 1085201 Analysis Time..: 01:05
Dilution Factor: 1

Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	1.0	ug/L
Aroclor 1221	ND	1.0	ug/L
Aroclor 1232	ND	1.0	ug/L
Aroclor 1242	ND	1.0	ug/L
Aroclor 1248	ND	1.0	ug/L
Aroclor 1254	ND	1.0	ug/L
Aroclor 1260	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	100	(52 - 129)
Tetrachloro-m-xylene	93	(54 - 113)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

GC Semivolatiles

Lot-Sample #...: D1C220263-007 **Work Order #...:** DXTJW1A2 **Matrix.....:** WG
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085201 **Analysis Time..:** 03:20
Dilution Factor: 1

Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	1.0	ug/L
Aroclor 1221	ND	1.0	ug/L
Aroclor 1232	ND	1.0	ug/L
Aroclor 1242	ND	1.0	ug/L
Aroclor 1248	ND	1.0	ug/L
Aroclor 1254	ND	1.0	ug/L
Aroclor 1260	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	102	(52 - 129)
Tetrachloro-m-xylene	88	(54 - 113)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-TT

GC Semivolatiles

Lot-Sample #...: D1C220263-001 Work Order #...: DXTG41AF Matrix.....: WG
Date Sampled...: 03/21/01 11:50 Date Received..: 03/22/01
Prep Date.....: 03/26/01 Analysis Date..: 03/29/01
Prep Batch #...: 1085329 Analysis Time..: 02:21
Dilution Factor: 1

Method.....: SW846 8151A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-D	ND	4.0	ug/L
2,4,5-T	ND	1.0	ug/L
2,4,5-TP (Silvex)	ND	1.0	ug/L
Dinoseb	ND	0.60	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	97	(20 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

GC Semivolatiles

Lot-Sample #...: D1C220263-002 Work Order #...: DXTH51AR Matrix.....: WG
Date Sampled...: 03/21/01 14:55 Date Received..: 03/22/01
Prep Date.....: 03/26/01 Analysis Date..: 03/29/01
Prep Batch #...: 1085329 Analysis Time..: 03:31
Dilution Factor: 1

Method.....: SW846 8151A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-D	ND	4.0	ug/L
2,4,5-T	ND	1.0	ug/L
2,4,5-TP (Silvex)	ND	1.0	ug/L
Dinoseb	ND	0.60	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	99	(20 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

GC Semivolatiles

Lot-Sample #...: D1C220263-003 Work Order #...: DXTJD1AR Matrix.....: WG
Date Sampled...: 03/21/01 10:20 Date Received..: 03/22/01
Prep Date.....: 03/26/01 Analysis Date..: 03/29/01
Prep Batch #...: 1085329 Analysis Time..: 04:06
Dilution Factor: 1

Method.....: SW846 8151A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-D	ND	4.0	ug/L
2,4,5-T	ND	1.0	ug/L
2,4,5-TP (Silvex)	ND	1.0	ug/L
Dinoseb	ND	0.60	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	86	(20 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

GC Semivolatiles

Lot-Sample #...: D1C220263-005 Work Order #...: DXTJG1A3 Matrix.....: WG
Date Sampled...: 03/21/01 13:45 Date Received..: 03/22/01
Prep Date.....: 03/26/01 Analysis Date..: 03/29/01
Prep Batch #...: 1085329 Analysis Time..: 04:41
Dilution Factor: 1

Method.....: SW846 8151A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-D	ND	4.0	ug/L
2,4,5-T	ND	1.0	ug/L
2,4,5-TP (Silvex)	ND	1.0	ug/L
Dinoseb	ND	0.60	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	92	(20 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

GC Semivolatiles

Lot-Sample #...: D1C220263-006 Work Order #...: DXTJP1AR Matrix.....: WG
Date Sampled...: 03/21/01 11:50 Date Received..: 03/22/01
Prep Date.....: 03/26/01 Analysis Date..: 03/29/01
Prep Batch #...: 1085329 Analysis Time..: 05:16
Dilution Factor: 1

Method.....: SW846 8151A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-D	ND	4.0	ug/L
2,4,5-T	ND	1.0	ug/L
2,4,5-TP (Silvex)	ND	1.0	ug/L
Dinoseb	ND	0.60	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	100	(20 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

GC Semivolatiles

Lot-Sample #...:	D1C220263-007	**Work Order #...:**	DXTJW1A3	**Matrix.....:**	WG
Date Sampled...:	03/21/01 11:50	**Date Received..:**	03/22/01		
Prep Date.....:	03/26/01	**Analysis Date..:**	03/29/01		
Prep Batch #...:	1085329	**Analysis Time..:**	07:01		
Dilution Factor:	1				
		Method.....:	SW846 8151A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-D	ND	4.0	ug/L
2,4,5-T	ND	1.0	ug/L
2,4,5-TP (Silvex)	ND	1.0	ug/L
Dinoseb	ND	0.60	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	94	(20 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-TT

HPLC

Lot-Sample #...: D1C220263-001 **Work Order #...:** DXTG41AG **Matrix.....:** WG
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 03/27/01 **Analysis Date..:** 04/02/01
Prep Batch #...: 1086277 **Analysis Time..:** 13:41
Dilution Factor: 1

Method.....: SW846 8310

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	1.0	ug/L
Acenaphthylene	ND	1.0	ug/L
Anthracene	ND	0.10	ug/L
Benzo(a)anthracene	ND	0.10	ug/L
Benzo(a)pyrene	ND	0.10	ug/L
Benzo(b)fluoranthene	ND	0.10	ug/L
Benzo(ghi)perylene	ND	0.20	ug/L
Benzo(k)fluoranthene	ND	0.10	ug/L
Chrysene	ND	0.20	ug/L
Dibenzo(a,h)anthracene	ND	0.20	ug/L
Fluoranthene	ND	0.20	ug/L
Fluorene	ND	0.20	ug/L
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L
1-Methylnaphthalene	ND	1.0	ug/L
2-Methylnaphthalene	ND	1.0	ug/L
Naphthalene	ND	1.0	ug/L
Phenanthrene	ND	0.20	ug/L
Pyrene	ND	0.20	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	83	(54 - 126)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

HPLC

Lot-Sample #...: D1C220263-002 Work Order #...: DXTH51AT Matrix.....: WG
Date Sampled...: 03/21/01 14:55 Date Received..: 03/22/01
Prep Date.....: 03/27/01 Analysis Date..: 04/02/01
Prep Batch #...: 1086277 Analysis Time..: 14:10
Dilution Factor: 1

Method.....: SW846 8310

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	1.0	ug/L
Acenaphthylene	ND	1.0	ug/L
Anthracene	ND	0.10	ug/L
Benzo(a)anthracene	ND	0.10	ug/L
Benzo(a)pyrene	ND	0.10	ug/L
Benzo(b)fluoranthene	ND	0.10	ug/L
Benzo(ghi)perylene	ND	0.20	ug/L
Benzo(k)fluoranthene	ND	0.10	ug/L
Chrysene	ND	0.20	ug/L
Dibenzo(a,h)anthracene	ND	0.20	ug/L
Fluoranthene	ND	0.20	ug/L
Fluorene	ND	0.20	ug/L
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L
1-Methylnaphthalene	ND	1.0	ug/L
2-Methylnaphthalene	ND	1.0	ug/L
Naphthalene	ND	1.0	ug/L
Phenanthrene	ND	0.20	ug/L
Pyrene	ND	0.20	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	83	(54 - 126)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

HPLC

Lot-Sample #...: D1C220263-003 Work Order #...: DXTJD1AT Matrix.....: WG
Date Sampled...: 03/21/01 10:20 Date Received..: 03/22/01
Prep Date.....: 03/27/01 Analysis Date..: 04/02/01
Prep Batch #...: 1086277 Analysis Time..: 14:39
Dilution Factor: 1
Method.....: SW846 8310

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	1.0	ug/L
Acenaphthylene	ND	1.0	ug/L
Anthracene	ND	0.10	ug/L
Benzo(a)anthracene	ND	0.10	ug/L
Benzo(a)pyrene	ND	0.10	ug/L
Benzo(b)fluoranthene	ND	0.10	ug/L
Benzo(ghi)perylene	ND	0.20	ug/L
Benzo(k)fluoranthene	ND	0.10	ug/L
Chrysene	ND	0.20	ug/L
Dibenzo(a,h)anthracene	ND	0.20	ug/L
Fluoranthene	ND	0.20	ug/L
Fluorene	ND	0.20	ug/L
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L
1-Methylnaphthalene	ND	1.0	ug/L
2-Methylnaphthalene	ND	1.0	ug/L
Naphthalene	ND	1.0	ug/L
Phenanthrene	ND	0.20	ug/L
Pyrene	ND	0.20	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	80	(54 - 126)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

HPLC

Lot-Sample #...: D1C220263-005 **Work Order #...:** DXTJG1A4 **Matrix.....:** WG
Date Sampled...: 03/21/01 13:45 **Date Received..:** 03/22/01
Prep Date.....: 03/27/01 **Analysis Date..:** 04/02/01
Prep Batch #...: 1086277 **Analysis Time..:** 15:08
Dilution Factor: 1

Method.....: SW846 8310

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	1.0	ug/L
Acenaphthylene	ND	1.0	ug/L
Anthracene	ND	0.10	ug/L
Benzo(a)anthracene	ND	0.10	ug/L
Benzo(a)pyrene	ND	0.10	ug/L
Benzo(b)fluoranthene	ND	0.10	ug/L
Benzo(ghi)perylene	ND	0.20	ug/L
Benzo(k)fluoranthene	ND	0.10	ug/L
Chrysene	ND	0.20	ug/L
Dibenzo(a,h)anthracene	ND	0.20	ug/L
Fluoranthene	ND	0.20	ug/L
Fluorene	ND	0.20	ug/L
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L
1-Methylnaphthalene	ND	1.0	ug/L
2-Methylnaphthalene	ND	1.0	ug/L
Naphthalene	ND	1.0	ug/L
Phenanthrene	ND	0.20	ug/L
Pyrene	ND	0.20	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	85	(54 - 126)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

HPLC

Lot-Sample #...: D1C220263-006 Work Order #...: DXTJP1AT Matrix.....: WG
Date Sampled...: 03/21/01 11:50 Date Received..: 03/22/01
Prep Date.....: 03/27/01 Analysis Date..: 04/02/01
Prep Batch #...: 1086277 Analysis Time..: 15:38
Dilution Factor: 1

Method.....: SW846 8310

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	1.0	ug/L
Acenaphthylene	ND	1.0	ug/L
Anthracene	ND	0.10	ug/L
Benzo(a)anthracene	ND	0.10	ug/L
Benzo(a)pyrene	ND	0.10	ug/L
Benzo(b)fluoranthene	ND	0.10	ug/L
Benzo(ghi)perylene	ND	0.20	ug/L
Benzo(k)fluoranthene	ND	0.10	ug/L
Chrysene	ND	0.20	ug/L
Dibenzo(a,h)anthracene	ND	0.20	ug/L
Fluoranthene	ND	0.20	ug/L
Fluorene	ND	0.20	ug/L
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L
1-Methylnaphthalene	ND	1.0	ug/L
2-Methylnaphthalene	ND	1.0	ug/L
Naphthalene	ND	1.0	ug/L
Phenanthrene	ND	0.20	ug/L
Pyrene	ND	0.20	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	90	(54 - 126)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

HPLC

Lot-Sample #...: D1C220263-007 Work Order #...: DXTJW1A4 Matrix.....: WG
Date Sampled...: 03/21/01 11:50 Date Received..: 03/22/01
Prep Date.....: 03/27/01 Analysis Date..: 04/02/01
Prep Batch #...: 1086277 Analysis Time..: 17:05
Dilution Factor: 1

Method.....: SW846 8310

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	1.0	ug/L
Acenaphthylene	ND	1.0	ug/L
Anthracene	ND	0.10	ug/L
Benzo(a)anthracene	ND	0.10	ug/L
Benzo(a)pyrene	ND	0.10	ug/L
Benzo(b)fluoranthene	ND	0.10	ug/L
Benzo(ghi)perylene	ND	0.20	ug/L
Benzo(k)fluoranthene	ND	0.10	ug/L
Chrysene	ND	0.20	ug/L
Dibenzo(a,h)anthracene	ND	0.20	ug/L
Fluoranthene	ND	0.20	ug/L
Fluorene	ND	0.20	ug/L
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L
1-Methylnaphthalene	ND	1.0	ug/L
2-Methylnaphthalene	ND	1.0	ug/L
Naphthalene	ND	1.0	ug/L
Phenanthrene	ND	0.20	ug/L
Pyrene	ND	0.20	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	83	(54 - 126)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-TT

Trace Level Organic Compounds

Lot-Sample #...: D1C220263-001 Work Order #...: DXTG41AM Matrix.....: WG
Date Sampled...: 03/21/01 11:50 Date Received..: 03/22/01
Prep Date.....: 03/27/01 Analysis Date..: 03/29/01
Prep Batch #...: 1086405 Analysis Time..: 04:58
Dilution Factor: 1
Method.....: SW846 8280A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,3,7,8-TCDD	ND	2.7	ng/L
Total TCDD	ND	2.7	ng/L
Total PeCDD	ND	4.2	ng/L
Total HxCDD	ND	8.1	ng/L
Total TCDF	ND	2.1	ng/L
Total PeCDF	ND	6.8	ng/L
Total HxCDF	ND	7.9	ng/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	99	(25 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

Trace Level Organic Compounds

Lot-Sample #...: D1C220263-002 Work Order #...: DXTH51A0 Matrix.....: WG
Date Sampled...: 03/21/01 14:55 Date Received..: 03/22/01
Prep Date.....: 03/27/01 Analysis Date..: 03/29/01
Prep Batch #...: 1086405 Analysis Time..: 05:45
Dilution Factor: 1
Method.....: SW846 8280A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,3,7,8-TCDD	ND	1.1	ng/L
Total TCDD	ND	1.1	ng/L
Total PeCDD	ND	3.1	ng/L
Total HxCDD	ND	0.97	ng/L
Total TCDF	ND	1.3	ng/L
Total PeCDF	ND	2.3	ng/L
Total HxCDF	ND	0.54	ng/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	95	(25 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

Trace Level Organic Compounds

Lot-Sample #...: D1C220263-003 Work Order #...: DXTJD1A0 Matrix.....: WG
Date Sampled...: 03/21/01 10:20 Date Received..: 03/22/01
Prep Date.....: 03/27/01 Analysis Date..: 03/29/01
Prep Batch #...: 1086405 Analysis Time..: 19:40
Dilution Factor: 1
Method.....: SW846 8280A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,3,7,8-TCDD	ND	0.41	ng/L
Total TCDD	ND	0.41	ng/L
Total PeCDD	ND	8.6	ng/L
Total HxCDD	ND	0.68	ng/L
Total TCDF	ND	1.3	ng/L
Total PeCDF	ND	1.9	ng/L
Total HxCDF	ND	0.42	ng/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	106	(25 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

Trace Level Organic Compounds

Lot-Sample #...: D1C220263-005 **Work Order #...:** DXTJG1AA **Matrix.....:** WG
Date Sampled...: 03/21/01 13:45 **Date Received..:** 03/22/01
Prep Date.....: 03/27/01 **Analysis Date..:** 03/29/01
Prep Batch #...: 1086405 **Analysis Time..:** 20:28
Dilution Factor: 1

Method.....: SW846 8280A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,3,7,8-TCDD	ND	0.90	ng/L
Total TCDD	ND	0.90	ng/L
Total PeCDD	ND	11	ng/L
Total HxCDD	ND	0.93	ng/L
Total TCDF	ND	1.3	ng/L
Total PeCDF	ND	2.0	ng/L
Total HxCDF	ND	0.61	ng/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	103	(25 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

Trace Level Organic Compounds

Lot-Sample #...: D1C220263-006 **Work Order #...:** DXTJP1A0 **Matrix.....:** WG
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 03/27/01 **Analysis Date..:** 03/29/01
Prep Batch #...: 1086405 **Analysis Time..:** 08:08
Dilution Factor: 1

Method.....: SW846 8280A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,3,7,8-TCDD	ND	0.75	ng/L
Total TCDD	ND	0.75	ng/L
Total PeCDD	ND	4.0	ng/L
Total HxCDD	ND	0.90	ng/L
Total TCDF	ND	1.5	ng/L
Total PeCDF	ND	2.8	ng/L
Total HxCDF	ND	0.68	ng/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	95	(25 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

Trace Level Organic Compounds

Lot-Sample #...: D1C220263-007 Work Order #...: DXTJW1AA Matrix.....: WG
Date Sampled...: 03/21/01 11:50 Date Received..: 03/22/01
Prep Date.....: 03/27/01 Analysis Date..: 03/29/01
Prep Batch #...: 1086405 Analysis Time..: 10:30
Dilution Factor: 1
Method.....: SW846 8280A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,3,7,8-TCDD	ND	1.7	ng/L
Total TCDD	ND	1.7	ng/L
Total PeCDD	ND	2.9	ng/L
Total HxCDD	ND	1.3	ng/L
Total TCDF	ND	1.4	ng/L
Total PeCDF	ND	2.6	ng/L
Total HxCDF	ND	0.82	ng/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	99	(25 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-TT

TOTAL Metals

Lot-Sample #...: D1C220263-001 Matrix.....: WG
Date Sampled...: 03/21/01 11:50 Date Received..: 03/22/01

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1082356						
Mercury	ND	0.20	ug/L	SW846 7470A	03/26-03/27/01	DXTG41A9
		Dilution Factor: 1		Analysis Time..: 11:50		
Prep Batch #...: 1085289						
Aluminum	**70.7 B**	**100**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTG41AP**
		Dilution Factor: 1		Analysis Time..: 16:41		
Barium	**35.2**	**10.0**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTG41AQ**
		Dilution Factor: 1		Analysis Time..: 13:17		
Beryllium	ND	2.0	ug/L	SW846 6010B	03/27-03/28/01	DXTG41AR
		Dilution Factor: 1		Analysis Time..: 13:17		
Calcium	**46500**	**200**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTG41CE**
		Dilution Factor: 1		Analysis Time..: 16:41		
Cobalt	ND	10.0	ug/L	SW846 6010B	03/27-03/28/01	DXTG41CA
		Dilution Factor: 1		Analysis Time..: 13:17		
Copper	ND	20.0	ug/L	SW846 6010B	03/27-03/28/01	DXTG41AT
		Dilution Factor: 1		Analysis Time..: 13:17		
Iron	**148**	**100**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTG41AU**
		Dilution Factor: 1		Analysis Time..: 16:41		
Potassium	**6020**	**3000**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTG41CG**
		Dilution Factor: 1		Analysis Time..: 16:41		
Magnesium	**43100**	**200**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTG41CF**
		Dilution Factor: 1		Analysis Time..: 16:41		
Manganese	**3.1 B**	**10.0**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTG41AV**
		Dilution Factor: 1		Analysis Time..: 13:17		
Sodium	**52600**	**5000**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTG41CH**
		Dilution Factor: 1		Analysis Time..: 16:41		
Nickel	ND	40.0	ug/L	SW846 6010B	03/27-03/28/01	DXTG41AW
		Dilution Factor: 1		Analysis Time..: 13:17		
Tin	ND	100	ug/L	SW846 6010B	03/27-03/28/01	DXTG41CC
		Dilution Factor: 1		Analysis Time..: 13:17		

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-TT

TOTAL Metals

Lot-Sample #...: D1C220263-001 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	27.6	10.0	ug/L	SW846 6010B	03/27-03/28/01	DXTG41AX
		Dilution Factor: 1		Analysis Time..: 13:17		
Zinc	13.8 B	20.0	ug/L	SW846 6010B	03/27-03/28/01	DXTG41A0
		Dilution Factor: 1		Analysis Time..: 13:17		
Molybdenum	4.2 B	20.0	ug/L	SW846 6010B	03/27-03/28/01	DXTG41CD
		Dilution Factor: 1		Analysis Time..: 13:17		
Prep Batch #...: 1089265						
Silver	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTG41A6
		Dilution Factor: 1		Analysis Time..: 18:07		
Arsenic	4.8 B	5.0	ug/L	SW846 6020	04/05-04/11/01	DXTG41A2
		Dilution Factor: 1		Analysis Time..: 18:07		
Cadmium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTG41A3
		Dilution Factor: 1		Analysis Time..: 18:07		
Chromium	3.8	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTG41A8
		Dilution Factor: 1		Analysis Time..: 18:07		
Lead	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTG41A4
		Dilution Factor: 1		Analysis Time..: 18:07		
Antimony	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTG41A1
		Dilution Factor: 1		Analysis Time..: 18:07		
Selenium	8.3	5.0	ug/L	SW846 6020	04/05-04/11/01	DXTG41A5
		Dilution Factor: 1		Analysis Time..: 18:07		
Thallium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTG41A7
		Dilution Factor: 1		Analysis Time..: 18:07		

NOTE(S):

B Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

TOTAL Metals

Lot-Sample #...: D1C220263-002 Matrix.....: WG
Date Sampled...: 03/21/01 14:55 Date Received..: 03/22/01

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1082356						
Mercury	ND	0.20	ug/L	SW846 7470A	03/26-03/27/01	DXTH51AL
		Dilution Factor: 1		Analysis Time..: 11:52		
Prep Batch #...: 1085289						
Aluminum	103	100	ug/L	SW846 6010B	03/27-03/28/01	DXTH51A2
		Dilution Factor: 1		Analysis Time..: 16:45		
Barium	36.8	10.0	ug/L	SW846 6010B	03/27-03/28/01	DXTH51A3
		Dilution Factor: 1		Analysis Time..: 13:22		
Beryllium	ND	2.0	ug/L	SW846 6010B	03/27-03/28/01	DXTH51A4
		Dilution Factor: 1		Analysis Time..: 13:22		
Calcium	47500	200	ug/L	SW846 6010B	03/27-03/28/01	DXTH51CE
		Dilution Factor: 1		Analysis Time..: 16:45		
Cobalt	ND	10.0	ug/L	SW846 6010B	03/27-03/28/01	DXTH51CA
		Dilution Factor: 1		Analysis Time..: 13:22		
Copper	ND	20.0	ug/L	SW846 6010B	03/27-03/28/01	DXTH51A5
		Dilution Factor: 1		Analysis Time..: 13:22		
Iron	79.3 B	100	ug/L	SW846 6010B	03/27-03/28/01	DXTH51A6
		Dilution Factor: 1		Analysis Time..: 16:45		
Potassium	6310	3000	ug/L	SW846 6010B	03/27-03/28/01	DXTH51CG
		Dilution Factor: 1		Analysis Time..: 16:45		
Magnesium	36800	200	ug/L	SW846 6010B	03/27-03/28/01	DXTH51CF
		Dilution Factor: 1		Analysis Time..: 16:45		
Manganese	3.1 B	10.0	ug/L	SW846 6010B	03/27-03/28/01	DXTH51A7
		Dilution Factor: 1		Analysis Time..: 13:22		
Sodium	53500	5000	ug/L	SW846 6010B	03/27-03/28/01	DXTH51CH
		Dilution Factor: 1		Analysis Time..: 16:45		
Nickel	ND	40.0	ug/L	SW846 6010B	03/27-03/28/01	DXTH51A8
		Dilution Factor: 1		Analysis Time..: 13:22		
Tin	ND	100	ug/L	SW846 6010B	03/27-03/28/01	DXTH51CC
		Dilution Factor: 1		Analysis Time..: 13:22		

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

TOTAL Metals

Lot-Sample #...: D1C220263-002 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	25.6	10.0	ug/L	SW846 6010B	03/27-03/28/01	DXTH51A9
		Dilution Factor: 1		Analysis Time..: 13:22		
Zinc	14.1 B	20.0	ug/L	SW846 6010B	03/27-03/28/01	DXTH51AA
		Dilution Factor: 1		Analysis Time..: 13:22		
Molybdenum	3.9 B	20.0	ug/L	SW846 6010B	03/27-03/28/01	DXTH51CD
		Dilution Factor: 1		Analysis Time..: 13:22		
Prep Batch #...: 1089265						
Silver	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTH51AH
		Dilution Factor: 1		Analysis Time..: 18:11		
Arsenic	4.2 B	5.0	ug/L	SW846 6020	04/05-04/11/01	DXTH51AD
		Dilution Factor: 1		Analysis Time..: 18:11		
Cadmium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTH51AE
		Dilution Factor: 1		Analysis Time..: 18:11		
Chromium	2.7	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTH51AK
		Dilution Factor: 1		Analysis Time..: 18:11		
Lead	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTH51AF
		Dilution Factor: 1		Analysis Time..: 18:11		
Antimony	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTH51AC
		Dilution Factor: 1		Analysis Time..: 18:11		
Selenium	7.1	5.0	ug/L	SW846 6020	04/05-04/11/01	DXTH51AG
		Dilution Factor: 1		Analysis Time..: 18:11		
Thallium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTH51AJ
		Dilution Factor: 1		Analysis Time..: 18:11		

NOTE(S):

B Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

TOTAL Metals

Lot-Sample #...: D1C220263-003 Matrix.....: WG
Date Sampled...: 03/21/01 10:20 Date Received..: 03/22/01

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1082356						
Mercury	ND	0.20	ug/L	SW846 7470A	03/26-03/27/01	DXTJD1AL
		Dilution Factor: 1		Analysis Time..: 11:54		
Prep Batch #...: 1085289						
Aluminum	**26.6 B**	**100**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJD1A2**
		Dilution Factor: 1		Analysis Time..: 16:49		
Barium	**34.5**	**10.0**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJD1A3**
		Dilution Factor: 1		Analysis Time..: 13:27		
Beryllium	ND	2.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJD1A4
		Dilution Factor: 1		Analysis Time..: 13:27		
Calcium	**31400**	**200**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJD1CE**
		Dilution Factor: 1		Analysis Time..: 16:49		
Cobalt	ND	10.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJD1CA
		Dilution Factor: 1		Analysis Time..: 13:27		
Copper	ND	20.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJD1A5
		Dilution Factor: 1		Analysis Time..: 13:27		
Iron	**19.2 B**	**100**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJD1A6**
		Dilution Factor: 1		Analysis Time..: 16:49		
Potassium	**5170**	**3000**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJD1CG**
		Dilution Factor: 1		Analysis Time..: 16:49		
Magnesium	**30700**	**200**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJD1CF**
		Dilution Factor: 1		Analysis Time..: 16:49		
Manganese	ND	10.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJD1A7
		Dilution Factor: 1		Analysis Time..: 13:27		
Sodium	**47600**	**5000**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJD1CH**
		Dilution Factor: 1		Analysis Time..: 16:49		
Nickel	ND	40.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJD1A8
		Dilution Factor: 1		Analysis Time..: 13:27		
Tin	ND	100	ug/L	SW846 6010B	03/27-03/28/01	DXTJD1CC
		Dilution Factor: 1		Analysis Time..: 13:27		

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

TOTAL Metals

Lot-Sample #...: D1C220263-003 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	**40.6**	**10.0**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJD1A9**
		Dilution Factor: 1		Analysis Time..: 13:27		
Zinc	ND	20.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJD1AA
		Dilution Factor: 1		Analysis Time..: 13:27		
Molybdenum	**5.6 B**	**20.0**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJD1CD**
		Dilution Factor: 1		Analysis Time..: 13:27		
Prep Batch #...: 1089265						
Silver	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTJD1AH
		Dilution Factor: 1		Analysis Time..: 18:16		
Arsenic	**6.2**	**5.0**	**ug/L**	**SW846 6020**	**04/05-04/11/01**	**DXTJD1AD**
		Dilution Factor: 1		Analysis Time..: 18:16		
Cadmium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTJD1AE
		Dilution Factor: 1		Analysis Time..: 18:16		
Chromium	**2.0**	**1.0**	**ug/L**	**SW846 6020**	**04/05-04/11/01**	**DXTJD1AK**
		Dilution Factor: 1		Analysis Time..: 18:16		
Lead	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTJD1AF
		Dilution Factor: 1		Analysis Time..: 18:16		
Antimony	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTJD1AC
		Dilution Factor: 1		Analysis Time..: 18:16		
Selenium	**1.6 B**	**5.0**	**ug/L**	**SW846 6020**	**04/05-04/11/01**	**DXTJD1AG**
		Dilution Factor: 1		Analysis Time..: 18:16		
Thallium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTJD1AJ
		Dilution Factor: 1		Analysis Time..: 18:16		

NOTE(S):

B Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

TOTAL Metals

Lot-Sample #...: D1C220263-005 Matrix.....: WG
Date Sampled...: 03/21/01 13:45 Date Received..: 03/22/01

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1082356						
Mercury	ND	0.20	ug/L	SW846 7470A	03/26-03/27/01	DXTJG1AW
		Dilution Factor: 1		Analysis Time..: 11:55		
Prep Batch #...: 1085289						
Aluminum	**87.2 B**	**100**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJG1AC**
		Dilution Factor: 1		Analysis Time..: 16:53		
Barium	**37.9**	**10.0**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJG1AD**
		Dilution Factor: 1		Analysis Time..: 13:32		
Beryllium	ND	2.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJG1AE
		Dilution Factor: 1		Analysis Time..: 13:32		
Calcium	**43200**	**200**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJG1CD**
		Dilution Factor: 1		Analysis Time..: 16:53		
Cobalt	ND	10.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJG1A9
		Dilution Factor: 1		Analysis Time..: 13:32		
Copper	**3.5 B**	**20.0**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJG1AF**
		Dilution Factor: 1		Analysis Time..: 13:32		
Iron	**430**	**100**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJG1AG**
		Dilution Factor: 1		Analysis Time..: 16:53		
Potassium	**6410**	**3000**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJG1CF**
		Dilution Factor: 1		Analysis Time..: 16:53		
Magnesium	**40800**	**200**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJG1CE**
		Dilution Factor: 1		Analysis Time..: 16:53		
Manganese	**23.5**	**10.0**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJG1AH**
		Dilution Factor: 1		Analysis Time..: 13:32		
Sodium	**58000**	**5000**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJG1CG**
		Dilution Factor: 1		Analysis Time..: 16:53		
Nickel	ND	40.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJG1AJ
		Dilution Factor: 1		Analysis Time..: 13:32		
Tin	ND	100	ug/L	SW846 6010B	03/27-03/28/01	DXTJG1CA
		Dilution Factor: 1		Analysis Time..: 13:32		

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

TOTAL Metals

Lot-Sample #...: D1C220263-005 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	29.2	10.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJG1AK
		Dilution Factor: 1		Analysis Time..: 13:32		
Zinc	8.4 B	20.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJG1AL
		Dilution Factor: 1		Analysis Time..: 13:32		
Molybdenum	4.7 B	20.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJG1CC
		Dilution Factor: 1		Analysis Time..: 13:32		
Prep Batch #...: 1089265						
Silver	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTJG1AT
		Dilution Factor: 1		Analysis Time..: 18:20		
Arsenic	5.4	5.0	ug/L	SW846 6020	04/05-04/11/01	DXTJG1AN
		Dilution Factor: 1		Analysis Time..: 18:20		
Cadmium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTJG1AP
		Dilution Factor: 1		Analysis Time..: 18:20		
Chromium	3.3	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTJG1AV
		Dilution Factor: 1		Analysis Time..: 18:20		
Lead	1.0	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTJG1AQ
		Dilution Factor: 1		Analysis Time..: 18:20		
Antimony	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTJG1AM
		Dilution Factor: 1		Analysis Time..: 18:20		
Selenium	6.7	5.0	ug/L	SW846 6020	04/05-04/11/01	DXTJG1AR
		Dilution Factor: 1		Analysis Time..: 18:20		
Thallium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTJG1AU
		Dilution Factor: 1		Analysis Time..: 18:20		

NOTE(S):

B Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

TOTAL Metals

Lot-Sample #...: D1C220263-006 Matrix.....: WG
Date Sampled...: 03/21/01 11:50 Date Received..: 03/22/01

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1082356						
Mercury	ND	0.20	ug/L	SW846 7470A	03/26-03/27/01	DXTJP1AL
		Dilution Factor: 1		Analysis Time..: 11:57		
Prep Batch #...: 1085289						
Aluminum	**83.2 B**	**100**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJP1A2**
		Dilution Factor: 1		Analysis Time..: 17:04		
Barium	**35.4**	**10.0**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJP1A3**
		Dilution Factor: 1		Analysis Time..: 13:37		
Beryllium	ND	2.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJP1A4
		Dilution Factor: 1		Analysis Time..: 13:37		
Calcium	**47800**	**200**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJP1CE**
		Dilution Factor: 1		Analysis Time..: 17:04		
Cobalt	ND	10.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJP1CA
		Dilution Factor: 1		Analysis Time..: 13:37		
Copper	ND	20.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJP1A5
		Dilution Factor: 1		Analysis Time..: 13:37		
Iron	**158**	**100**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJP1A6**
		Dilution Factor: 1		Analysis Time..: 17:04		
Potassium	**6180**	**3000**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJP1CG**
		Dilution Factor: 1		Analysis Time..: 17:04		
Magnesium	**44200**	**200**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJP1CF**
		Dilution Factor: 1		Analysis Time..: 17:04		
Manganese	**3.2 B**	**10.0**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJP1A7**
		Dilution Factor: 1		Analysis Time..: 13:37		
Sodium	**54400**	**5000**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJP1CH**
		Dilution Factor: 1		Analysis Time..: 17:04		
Nickel	ND	40.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJP1A8
		Dilution Factor: 1		Analysis Time..: 13:37		
Tin	ND	100	ug/L	SW846 6010B	03/27-03/28/01	DXTJP1CC
		Dilution Factor: 1		Analysis Time..: 13:37		

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

TOTAL Metals

Lot-Sample #...: D1C220263-006 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	28.4	10.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJP1A9
		Dilution Factor: 1		Analysis Time..: 13:37		
Zinc	17.9 B	20.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJP1AA
		Dilution Factor: 1		Analysis Time..: 13:37		
Molybdenum	4.6 B	20.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJP1CD
		Dilution Factor: 1		Analysis Time..: 13:37		
Prep Batch #...: 1089265						
Silver	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTJP1AH
		Dilution Factor: 1		Analysis Time..: 18:35		
Arsenic	4.9 B	5.0	ug/L	SW846 6020	04/05-04/11/01	DXTJP1AD
		Dilution Factor: 1		Analysis Time..: 18:35		
Cadmium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTJP1AE
		Dilution Factor: 1		Analysis Time..: 18:35		
Chromium	3.5	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTJP1AK
		Dilution Factor: 1		Analysis Time..: 18:35		
Lead	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTJP1AF
		Dilution Factor: 1		Analysis Time..: 18:35		
Antimony	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTJP1AC
		Dilution Factor: 1		Analysis Time..: 18:35		
Selenium	8.4	5.0	ug/L	SW846 6020	04/05-04/11/01	DXTJP1AG
		Dilution Factor: 1		Analysis Time..: 18:35		
Thallium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTJP1AJ
		Dilution Factor: 1		Analysis Time..: 18:35		

NOTE(S):

B Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

TOTAL Metals

Lot-Sample #...: D1C220263-007 **Matrix.....:** WG
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1082356						
Mercury	ND	0.20	ug/L	SW846 7470A	03/26-03/27/01	DXTJW1AW
		Dilution Factor: 1		Analysis Time..: 12:04		
Prep Batch #...: 1085289						
Aluminum	ND	100	ug/L	SW846 6010B	03/27-03/28/01	DXTJW1AC
		Dilution Factor: 1		Analysis Time..: 17:20		
Barium	**80.0**	**10.0**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJW1AD**
		Dilution Factor: 1		Analysis Time..: 13:57		
Beryllium	ND	2.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJW1AE
		Dilution Factor: 1		Analysis Time..: 13:57		
Calcium	**31900**	**200**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJW1CD**
		Dilution Factor: 1		Analysis Time..: 17:20		
Cobalt	ND	10.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJW1A9
		Dilution Factor: 1		Analysis Time..: 13:57		
Copper	ND	20.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJW1AF
		Dilution Factor: 1		Analysis Time..: 13:57		
Iron	**35.1 B**	**100**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJW1AG**
		Dilution Factor: 1		Analysis Time..: 17:20		
Potassium	**5290**	**3000**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJW1CF**
		Dilution Factor: 1		Analysis Time..: 17:20		
Magnesium	**31600**	**200**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJW1CE**
		Dilution Factor: 1		Analysis Time..: 17:20		
Manganese	ND	10.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJW1AH
		Dilution Factor: 1		Analysis Time..: 13:57		
Sodium	**46500**	**5000**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJW1CG**
		Dilution Factor: 1		Analysis Time..: 17:20		
Nickel	ND	40.0	ug/L	SW846 6010B	03/27-03/28/01	DXTJW1AJ
		Dilution Factor: 1		Analysis Time..: 13:57		
Tin	ND	100	ug/L	SW846 6010B	03/27-03/28/01	DXTJW1CA
		Dilution Factor: 1		Analysis Time..: 13:57		

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

TOTAL Metals

Lot-Sample #...: D1C220263-007 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	**38.8**	**10.0**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJW1AK**
		Dilution Factor: 1		Analysis Time..: 13:57		
Zinc	**3.6 B**	**20.0**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJW1AL**
		Dilution Factor: 1		Analysis Time..: 13:57		
Molybdenum	**4.0 B**	**20.0**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DXTJW1CC**
		Dilution Factor: 1		Analysis Time..: 13:57		
Prep Batch #...: 1089265						
Silver	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTJW1AT
		Dilution Factor: 1		Analysis Time..: 19:08		
Arsenic	**4.9 B**	**5.0**	**ug/L**	**SW846 6020**	**04/05-04/11/01**	**DXTJW1AN**
		Dilution Factor: 1		Analysis Time..: 19:08		
Cadmium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTJW1AP
		Dilution Factor: 1		Analysis Time..: 19:08		
Chromium	**1.6**	**1.0**	**ug/L**	**SW846 6020**	**04/05-04/11/01**	**DXTJW1AV**
		Dilution Factor: 1		Analysis Time..: 19:08		
Lead	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXTJW1AQ
		Dilution Factor: 1		Analysis Time..: 19:08		
Antimony	**0.39 B**	**1.0**	**ug/L**	**SW846 6020**	**04/05-04/11/01**	**DXTJW1AM**
		Dilution Factor: 1		Analysis Time..: 19:08		
Selenium	ND	5.0	ug/L	SW846 6020	04/05-04/11/01	DXTJW1AR
		Dilution Factor: 1		Analysis Time..: 19:08		
Thallium	**0.040 B**	**1.0**	**ug/L**	**SW846 6020**	**04/05-04/11/01**	**DXTJW1AU**
		Dilution Factor: 1		Analysis Time..: 19:08		

NOTE(S):

B Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-TT

General Chemistry

Lot-Sample #...: D1C220263-001 **Work Order #...:** DXTG4 **Matrix.....:** WG
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	ND	0.010	mg/L	SW846 9012A	04/03/01	1093368
		Dilution Factor: 1		Analysis Time..: 13:00		
Perchlorate	ND	20.0	ug/L	EPA 314.0	03/26/01	1086178
		Dilution Factor: 1		Analysis Time..: 10:30		
Total Organic Carbon	ND	1.0	mg/L	SW846 9060	04/16/01	1107405
		Dilution Factor: 1		Analysis Time..: 12:00		
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	04/10/01	1102313
		Dilution Factor: 1		Analysis Time..: 12:00		
Total Sulfide	**0.58 B**	**4.0**	**mg/L**	**SW846 9030B/9034**	**03/26/01**	**1085382**
		Dilution Factor: 1		Analysis Time..: 12:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

General Chemistry

Lot-Sample #...: D1C220263-002 **Work Order #...:** DXTH5 **Matrix.....:** WG
Date Sampled...: 03/21/01 14:55 **Date Received..:** 03/22/01

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	ND	0.010	mg/L	SW846 9012A	04/03/01	1093368
		Dilution Factor: 1		Analysis Time..: 13:00		
Perchlorate	ND	20.0	ug/L	EPA 314.0	03/26/01	1086178
		Dilution Factor: 1		Analysis Time..: 10:45		
Total Organic Carbon	ND	1.0	mg/L	SW846 9060	04/16/01	1107405
		Dilution Factor: 1		Analysis Time..: 12:00		
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	04/10/01	1102313
		Dilution Factor: 1		Analysis Time..: 12:00		
Total Sulfide	**0.64 B**	**4.0**	**mg/L**	**SW846 9030B/9034**	**03/26/01**	**1085382**
		Dilution Factor: 1		Analysis Time..: 12:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

General Chemistry

Lot-Sample #...: D1C220263-003 Work Order #...: DXTJD Matrix.....: WG
Date Sampled...: 03/21/01 10:20 Date Received..: 03/22/01

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	ND	0.010	mg/L	SW846 9012A	04/03/01	1093368
		Dilution Factor: 1		Analysis Time..: 13:00		
Total Organic Carbon	ND	1.0	mg/L	SW846 9060	04/16/01	1107405
		Dilution Factor: 1		Analysis Time..: 12:00		
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	04/10/01	1102313
		Dilution Factor: 1		Analysis Time..: 12:00		
Total Sulfide	**0.56 B**	**4.0**	**mg/L**	**SW846 9030B/9034**	**03/26/01**	**1085382**
		Dilution Factor: 1		Analysis Time..: 12:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

General Chemistry

Lot-Sample #...: D1C220263-005 Work Order #...: DXTJG Matrix.....: WG
Date Sampled...: 03/21/01 13:45 Date Received..: 03/22/01

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	ND	0.010	mg/L	SW846 9012A	04/03/01	1093368
		Dilution Factor: 1		Analysis Time..: 13:00		
Total Organic Carbon	ND	1.0	mg/L	SW846 9060	04/16/01	1107405
		Dilution Factor: 1		Analysis Time..: 12:00		
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	04/10/01	1102313
		Dilution Factor: 1		Analysis Time..: 12:00		
Total Sulfide	ND	4.0	mg/L	SW846 9030B/9034	03/26/01	1085382
		Dilution Factor: 1		Analysis Time..: 12:00		

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

General Chemistry

Lot-Sample #...: D1C220263-006 Work Order #...: DXTJP Matrix.....: WG
Date Sampled...: 03/21/01 11:50 Date Received..: 03/22/01

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	ND	0.010	mg/L	SW846 9012A	04/03/01	1093368
		Dilution Factor: 1		Analysis Time..: 13:00		
Perchlorate	**19.9 B**	**20.0**	**ug/L**	**EPA 314.0**	**03/26/01**	**1086178**
		Dilution Factor: 1		Analysis Time..: 11:00		
Total Organic Carbon	ND	1.0	mg/L	SW846 9060	04/16/01	1107405
		Dilution Factor: 1		Analysis Time..: 12:00		
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	04/10/01	1102313
		Dilution Factor: 1		Analysis Time..: 12:00		
Total Sulfide	**0.61 B**	**4.0**	**mg/L**	**SW846 9030B/9034**	**03/26/01**	**1085382**
		Dilution Factor: 1		Analysis Time..: 12:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

General Chemistry

Lot-Sample #...: D1C220263-007 **Work Order #...:** DXTJW **Matrix.....:** WG
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	ND	0.010	mg/L	SW846 9012A	04/03/01	1093368
		Dilution Factor: 1		Analysis Time..: 13:00		
Total Organic Carbon	ND	1.0	mg/L	SW846 9060	04/16/01	1107405
		Dilution Factor: 1		Analysis Time..: 12:00		
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	04/10/01	1102313
		Dilution Factor: 1		Analysis Time..: 12:00		
Total Sulfide	ND	4.0	mg/L	SW846 9030B/9034	03/26/01	1085382
		Dilution Factor: 1		Analysis Time..: 12:00		

APPENDIX III

Analytical Results from Sevrn Trent Services Laboratory
for Ground-Water Samples Collected March 22, 2001

SEVERN TRENT SERVICES

STL Denver
4955 Yarrow Street
Arvada, CO 80002-4517

Tel: 303 736 0100
Fax: 303 431 7171
www.stl-inc.com

ANALYTICAL REPORT

Cannon AFB
Lot #: D1C230236

Richard Daddow

U.S. Geological Survey

STL DENVER

Karen Kuoppala
Project Manager

April 20, 2001

Table Of Contents

Standard Deliverables with Supporting Documentation

Report Contents	Number of Pages
Standard Deliverables *(The **Cover Letter** and the **Report Cover** page are considered integral parts of this Standard Deliverable package. This report is incomplete unless all pages indicated in this Table of Contents are included.)*	127

- Table of Contents
- Case Narrative
- Executive Summary – Detection Highlights
- Methods Summary
- Method/Analyst Summary
- Lot Sample Summary
- Analytical Results
- QC Data Association Summary
- Chain-of-Custody

Supporting Documentation *(Note: A one-page "Description of Supporting Documentation" is provided at the beginning of this section.).*	Check below when supporting documentation is present.
• Volatile GC/MS	✓
• Semivolatile GC/MS	✓
• Volatile GC	
• Semivolatile GC	✓
• LC/MS or HPLC	✓
• Metals	✓
• General Chemistry	✓
• Subcontracted Data	✓

Case Narrative
Lot D1C230236

With exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory quality control samples analyzed in conjunction with the samples in this project were within established control limits. The test results shown in this report meet all requirements of NELAC, and any exceptions are noted below. This report shall not be reproduced, except in full, without the written permission of the laboratory

This report contains the results for the six samples received under chain of custody on March 23, 2001. The dioxins/furans analyses were performed at STL Sacramento.

GC/MS Semi-Volatile Organics, SW846 8270C

The LCS/LCSD demonstrated recoveries above QC limits for 4-nitrophenol. The compound was not detected in the associated sample therefore further corrective action was not taken.

The method required MS/MSD could not be performed due to insufficient sample volume. A duplicate LCS (LCSD) was analyzed and reported to provide evidence of batch precision.

GC Semi-Volatile Organics, SW846 8081A

The continuing calibration verification (CCV) demonstrated percent differences greater than method specified limits for endrin aldehyde and kepone. The average percent difference of all compounds in the CCV was within control as specified in the method, so now corrective action was taken.

GC Semi-Volatile Organics, SW846 8151A

The method required MS/MSD could not be performed due to insufficient sample volume. A duplicate LCS (LCSD) was analyzed and reported to provide evidence of batch precision.

Metals

Due to a software limitation, the sample amount for sodium reported on the Matrix Spike Sample Data Report is incorrect. The correct sample amount for sodium is 1,580,000 ug/L.

EXECUTIVE SUMMARY - Detection Highlights

D1C230236

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
CAFB-6 03/22/01 12:20 001				
Arsenic	3.0 B	5.0	ug/L	SW846 6020
Chromium	3.4	1.0	ug/L	SW846 6020
Lead	0.65 B	1.0	ug/L	SW846 6020
Selenium	6.2	5.0	ug/L	SW846 6020
Molybdenum	2.9 B	20.0	ug/L	SW846 6010B
Aluminum	82.6 B	100	ug/L	SW846 6010B
Barium	30.3	10.0	ug/L	SW846 6010B
Calcium	59000	200	ug/L	SW846 6010B
Copper	3.2 B	20.0	ug/L	SW846 6010B
Iron	86.7 B	100	ug/L	SW846 6010B
Potassium	7610	3000	ug/L	SW846 6010B
Magnesium	56900	200	ug/L	SW846 6010B
Manganese	0.92 B	10.0	ug/L	SW846 6010B
Sodium	57200	5000	ug/L	SW846 6010B
Vanadium	17.1	10.0	ug/L	SW846 6010B
Zinc	15.9 B	20.0	ug/L	SW846 6010B
Total Dissolved Solids	627	10.0	mg/L	MCAWW 160.1
Nitrate	5.6	0.10	mg/L	MCAWW 353.2
Sulfate	169 Q	25.0	mg/L	MCAWW 300.0A
CAFB-E 03/22/01 10:15 002				
Selenium	5.2	5.0	ug/L	SW846 6020
Lead	5.4	1.0	ug/L	SW846 6020
Silver	0.060 B	1.0	ug/L	SW846 6020
Arsenic	3.1 B	5.0	ug/L	SW846 6020
Chromium	12.0	1.0	ug/L	SW846 6020
Potassium	6700	3000	ug/L	SW846 6010B
Magnesium	43500	200	ug/L	SW846 6010B
Manganese	2.0 B	10.0	ug/L	SW846 6010B
Sodium	60300	5000	ug/L	SW846 6010B
Vanadium	18.0	10.0	ug/L	SW846 6010B
Zinc	7.0 B	20.0	ug/L	SW846 6010B
Aluminum	107	100	ug/L	SW846 6010B
Barium	51.8	10.0	ug/L	SW846 6010B
Calcium	47300	200	ug/L	SW846 6010B
Iron	84.0 B	100	ug/L	SW846 6010B
Total Dissolved Solids	503	10.0	mg/L	MCAWW 160.1
Nitrate	1.4	0.10	mg/L	MCAWW 353.2
Sulfate	81.1 Q	10.0	mg/L	MCAWW 300.0A

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

D1C230236

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
CAFB-H 03/22/01 11:25 003				
Arsenic	3.4 B	5.0	ug/L	SW846 6020
Chromium	3.5	1.0	ug/L	SW846 6020
Lead	0.38 B	1.0	ug/L	SW846 6020
Selenium	6.7	5.0	ug/L	SW846 6020
Molybdenum	2.6 B	20.0	ug/L	SW846 6010B
Aluminum	111	100	ug/L	SW846 6010B
Barium	30.3	10.0	ug/L	SW846 6010B
Calcium	43500	200	ug/L	SW846 6010B
Iron	54.3 B	100	ug/L	SW846 6010B
Potassium	6630	3000	ug/L	SW846 6010B
Magnesium	40400	200	ug/L	SW846 6010B
Manganese	1.1 B	10.0	ug/L	SW846 6010B
Sodium	57900	5000	ug/L	SW846 6010B
Nickel	6.4 B	40.0	ug/L	SW846 6010B
Vanadium	19.4	10.0	ug/L	SW846 6010B
Zinc	53.3	20.0	ug/L	SW846 6010B
Total Dissolved Solids	468	10.0	mg/L	MCAWW 160.1
Nitrate	1.3	0.10	mg/L	MCAWW 353.2
Sulfate	126 Q	25.0	mg/L	MCAWW 300.0A
CAFB-Q 03/22/01 09:00 005				
Arsenic	5.3	5.0	ug/L	SW846 6020
Chromium	40.5	1.0	ug/L	SW846 6020
Selenium	6.4	5.0	ug/L	SW846 6020
Molybdenum	3.8 B	20.0	ug/L	SW846 6010B
Aluminum	87.2 B	100	ug/L	SW846 6010B
Barium	26.6	10.0	ug/L	SW846 6010B
Calcium	43800	200	ug/L	SW846 6010B
Iron	479	100	ug/L	SW846 6010B
Potassium	5960	3000	ug/L	SW846 6010B
Sodium	51500	5000	ug/L	SW846 6010B
Nickel	90.5	40.0	ug/L	SW846 6010B
Magnesium	40800	200	ug/L	SW846 6010B
Manganese	13.9	10.0	ug/L	SW846 6010B
Vanadium	27.2	10.0	ug/L	SW846 6010B
Zinc	3.5 B	20.0	ug/L	SW846 6010B
Total Organic Carbon	0.39 B	1.0	mg/L	SW846 9060
Perchlorate	5.8 B	20.0	ug/L	EPA 314.0

METHODS SUMMARY

D1C230236

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Chlorinated Herbicides by GC	SW846 8151A	SW846 8151A
Cyanide, Total	SW846 9012A	SW846 9012A
Dioxins/Furans, HRGC/LRMS (8280A)	SW846 8280A	SW846 8280A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3010A
ICP-MS (6020)	SW846 6020	SW846 3010
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A	SW846 7470A
Nitrate	MCAWW 353.2	MCAWW 353.2
Nitrite	MCAWW 354.1	
Organochlorine Pesticides	SW846 8081A	SW846 3510C
Perchlorate	EPA 314.0	EPA 314.0
Polynuclear Aromatic Hydrocarbons by HPLC	SW846 8310	SW846 3510
PCBs by SW-846 8082	SW846 8082	SW846 3510C
Semivolatile Organic Compounds by GC/MS	SW846 8270C	SW846 3520C
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Sulfides, Total 9030B/9034	SW846 9030B/903	SW846 9030B/903
Total Organic Carbon	SW846 9060	SW846 9060
Total Organic Halogens	SW846 9020B	SW846 9020B
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3010A
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B/826

References:

EPA "EASTERN ENVIRONMENTAL RADIATION FACILITY RADIOCHEMISTRY PROCEDURES MANUAL" US EPA EPA 520/5-84-006 AUGUST 1984

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

METHOD / ANALYST SUMMARY

D1C230236

ANALYTICAL METHOD	ANALYST	ANALYST ID
EPA 314.0	Dave Elkin	000901
MCAWW 160.1	Heather Butler	008515
MCAWW 300.0A	Nathan Lovstad	000090
MCAWW 353.2	Sara Agner	008534
MCAWW 354.1	Thu Lephan	004145
SW846 6010B	Jeff Somers	008217
SW846 6010B	Lynn-Anne Trudell	006645
SW846 6020	Royce Bruce	008595
SW846 7470A	Thomas Lill	006929
SW846 8081A	Dennis Jonsrud	009226
SW846 8082	Karla Garcia	000205
SW846 8151A	Sonya Dacar	011595
SW846 8260B	Mike Armstrong	002544
SW846 8270C	Rocky Hebel	003920
SW846 8280A	Kevin Sanchez	005719
SW846 8310	Sonya Dacar	011595
SW846 9012A	Ewa Kudla	001167
SW846 9020B	Duane Allee	001470
SW846 9030B/9034	Roger Winn	000597
SW846 9060	Sara Agner	008534

References:

EPA "EASTERN ENVIRONMENTAL RADIATION FACILITY RADIOCHEMISTRY PROCEDURES MANUAL" US EPA EPA 520/5-84-006 AUGUST 1984

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

D1C230236

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
DXWCL	001	CAFB-6	03/22/01	12:20
DXWC5	002	CAFB-E	03/22/01	10:15
DXWC9	003	CAFB-H	03/22/01	11:25
DXWDE	004	CAFB-E-TB	03/22/01	10:15
DXWDG	005	CAFB-Q	03/22/01	09:00
DXWD6	006	CAFB-Q-TB	03/22/01	09:00

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-6

GC/MS Volatiles

Lot-Sample #...: D1C230236-001 **Work Order #...:** DXWCL1AA **Matrix.....:** WG
Date Sampled...: 03/22/01 12:20 **Date Received..:** 03/23/01
Prep Date.....: 04/04/01 **Analysis Date..:** 04/04/01
Prep Batch #...: 1095213 **Analysis Time..:** 16:31
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-6

GC/MS Volatiles

Lot-Sample #...: D1C230236-001 **Work Order #...:** DXWCL1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L
Acrolein	ND	20	ug/L
Ethyl methacrylate	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(80 - 120)
1,2-Dichloroethane-d4	102	(76 - 122)
4-Bromofluorobenzene	99	(79 - 119)
Toluene-d8	100	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-6

GC/MS Volatiles

Lot-Sample #: D1C230236-001 **Work Order #:** DXWCL1AA **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/L

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-E

GC/MS Volatiles

Lot-Sample #...: D1C230236-002 **Work Order #...:** DXWC51AM **Matrix.....:** WG
Date Sampled...: 03/22/01 10:15 **Date Received..:** 03/23/01
Prep Date.....: 04/04/01 **Analysis Date..:** 04/04/01
Prep Batch #...: 1095213 **Analysis Time..:** 16:57
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-E

GC/MS Volatiles

Lot-Sample #...: D1C230236-002 **Work Order #...:** DXWC51AM **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L
Acrolein	ND	20	ug/L
Ethyl methacrylate	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(80 - 120)
1,2-Dichloroethane-d4	102	(76 - 122)
4-Bromofluorobenzene	98	(79 - 119)
Toluene-d8	100	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-E

GC/MS Volatiles

Lot-Sample #: D1C230236-002 **Work Order #:** DXWC51AM **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Cyclotrisiloxane, hexamethyl-	541-05-9	1.12 J T2 M	10.428	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-H

GC/MS Volatiles

Lot-Sample #...: D1C230236-003 **Work Order #...:** DXWC91A0 **Matrix.....:** WG
Date Sampled...: 03/22/01 11:25 **Date Received..:** 03/23/01
Prep Date.....: 04/04/01 **Analysis Date..:** 04/04/01
Prep Batch #...: 1095213 **Analysis Time..:** 17:23
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-H

GC/MS Volatiles

Lot-Sample #...: D1C230236-003 **Work Order #...:** DXWC91A0 **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L
Acrolein	ND	20	ug/L
Ethyl methacrylate	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(80 - 120)
1,2-Dichloroethane-d4	100	(76 - 122)
4-Bromofluorobenzene	102	(79 - 119)
Toluene-d8	102	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-H

GC/MS Volatiles

Lot-Sample #: D1C230236-003 **Work Order #:** DXWC91A0 **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/L

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-E-TB

GC/MS Volatiles

Lot-Sample #...: D1C230236-004 **Work Order #...:** DXWDE1AA **Matrix.....:** WQ
Date Sampled...: 03/22/01 10:15 **Date Received..:** 03/23/01
Prep Date.....: 04/04/01 **Analysis Date..:** 04/04/01
Prep Batch #...: 1095213 **Analysis Time..:** 17:49
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-E-TB

GC/MS Volatiles

Lot-Sample #...: D1C230236-004 **Work Order #...:** DXWDE1AA **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L
Acrolein	ND	20	ug/L
Ethyl methacrylate	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(80 - 120)
1,2-Dichloroethane-d4	98	(76 - 122)
4-Bromofluorobenzene	100	(79 - 119)
Toluene-d8	101	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-E-TB

GC/MS Volatiles

Lot-Sample #: D1C230236-004 **Work Order #:** DXWDE1AA **Matrix:** WQ

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		1.1 J	M	10.431	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

GC/MS Volatiles

Lot-Sample #...: D1C230236-005 **Work Order #...:** DXWDG1AA **Matrix.....:** WG
Date Sampled...: 03/22/01 09:00 **Date Received..:** 03/23/01
Prep Date.....: 04/04/01 **Analysis Date..:** 04/04/01
Prep Batch #...: 1095213 **Analysis Time..:** 18:15
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

GC/MS Volatiles

Lot-Sample #...: D1C230236-005 **Work Order #...:** DXWDG1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L
Acrolein	ND	20	ug/L
Ethyl methacrylate	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(80 - 120)
1,2-Dichloroethane-d4	98	(76 - 122)
4-Bromofluorobenzene	99	(79 - 119)
Toluene-d8	98	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-Q

GC/MS Volatiles

Lot-Sample #: D1C230236-005 **Work Order #:** DXWDG1AA **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		1.2 J	M	13.427	ug/L
Nonadecane	629-92-5	2.82 J T2	M	14.164	ug/L
Hexane		3.2	Q	7.299	ug/L

NOTE(S):

Q: Result was quantitated against the response factor of a calibration standard.

M: Result was measured against nearest internal standard assuming a response factor of 1.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q-TB

GC/MS Volatiles

Lot-Sample #...: D1C230236-006 **Work Order #...:** DXWD61AA **Matrix.....:** WQ
Date Sampled...: 03/22/01 09:00 **Date Received..:** 03/23/01
Prep Date.....: 04/04/01 **Analysis Date..:** 04/04/01
Prep Batch #...: 1095213 **Analysis Time..:** 18:40
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q-TB

GC/MS Volatiles

Lot-Sample #...: D1C230236-006 **Work Order #...:** DXWD61AA **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L
Acrolein	ND	20	ug/L
Ethyl methacrylate	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(80 - 120)
1,2-Dichloroethane-d4	96	(76 - 122)
4-Bromofluorobenzene	100	(79 - 119)
Toluene-d8	105	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-Q-TB

GC/MS Volatiles

Lot-Sample #: D1C230236-006 **Work Order #:** DXWD61AA **Matrix:** WQ

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Cyclotrisiloxane, hexamethyl-	541-05-9	1.12 J T2 M	10.433	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

GC/MS Semivolatiles

Lot-Sample #...: D1C230236-005 **Work Order #...:** DXWDG1AC **Matrix.....:** WG
Date Sampled...: 03/22/01 09:00 **Date Received..:** 03/23/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085169 **Analysis Time..:** 19:54
Dilution Factor: 1

Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Di-n-butyl phthalate	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Phenol	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
bis(2-Chloroethyl)-ether	ND	10	ug/L
bis(2-Chloroethoxy) methane	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
bis(2-Ethylhexyl) phthalate	ND	10	ug/L
2,2'-oxybis(1-Chloropropane)	ND	10	ug/L
4-Methylphenol	ND	10	ug/L
N-Nitrosodi-n-propyl-amine	ND	10	ug/L
Hexachloroethane	ND	10	ug/L
Nitrobenzene	ND	10	ug/L
Isophorone	ND	10	ug/L
2-Nitrophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
1,2,4-Trichloro-benzene	ND	10	ug/L
Naphthalene	ND	10	ug/L
4-Chloroaniline	ND	10	ug/L
Hexachlorobutadiene	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
Hexachlorocyclopenta-diene	ND	50	ug/L
2,4,5-Trichloro-phenol	ND	10	ug/L
2,4,6-Trichloro-phenol	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
Dimethyl phthalate	ND	10	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

GC/MS Semivolatiles

Lot-Sample #...: D1C230236-005 Work Order #...: DXWDG1AC Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
2,4-Dinitrophenol	ND	50	ug/L
4-Nitrophenol	ND	50	ug/L
Dibenzofuran	ND	10	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
Diethyl phthalate	ND	10	ug/L
4-Chlorophenyl phenyl ether	ND	10	ug/L
Fluorene	ND	10	ug/L
4-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
4-Bromophenyl phenyl ether	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Anthracene	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Pyrene	ND	10	ug/L
Butyl benzyl phthalate	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	50	ug/L
Benzo(a)anthracene	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-octyl phthalate	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Benzo(ghi)perylene	ND	10	ug/L
4-Chloro-3-methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
Acetophenone	ND	10	ug/L
2-Acetylaminofluorene	ND	100	ug/L
4-Aminobiphenyl	ND	50	ug/L
Aniline	ND	10	ug/L
Aramite	ND	20	ug/L
Benzyl alcohol	ND	10	ug/L
2-sec-Butyl-4,6-dinitrophenol	ND	20	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

GC/MS Semivolatiles

Lot-Sample #...: D1C230236-005 **Work Order #...:** DXWDG1AC **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,6-Dichlorophenol	ND	10	ug/L
4-Dimethylaminoazobenzene	ND	20	ug/L
7,12-Dimethylbenz(a)-anthracene	ND	20	ug/L
3,3'-Dimethylbenzidine	ND	20	ug/L
alpha,alpha-Dimethylphenethylamine	ND	50	ug/L
1,3-Dinitrobenzene	ND	10	ug/L
Diphenylamine	ND	10	ug/L
Ethyl methanesulfonate	ND	10	ug/L
Hexachloropropene	ND	100	ug/L
Isosafrole	ND	20	ug/L
Methapyrilene	ND	50	ug/L
3-Methylcholanthrene	ND	20	ug/L
Methyl methanesulfonate	ND	10	ug/L
3-Methylphenol	ND	10	ug/L
1,4-Naphthoquinone	ND	50	ug/L
1-Naphthylamine	ND	10	ug/L
2-Naphthylamine	ND	10	ug/L
N-Nitrosodi-n-butylamine	ND	10	ug/L
N-Nitrosodiethylamine	ND	10	ug/L
N-Nitrosodimethylamine	ND	10	ug/L
N-Nitrosomethylethylamine	ND	10	ug/L
N-Nitrosomorpholine	ND	10	ug/L
N-Nitrosopiperidine	ND	10	ug/L
N-Nitrosopyrrolidine	ND	10	ug/L
5-Nitro-o-toluidine	ND	20	ug/L
Pentachlorobenzene	ND	10	ug/L
Pentachloroethane	ND	50	ug/L
Pentachloronitrobenzene	ND	50	ug/L
Phenacetin	ND	20	ug/L
2-Picoline	ND	20	ug/L
Pronamide	ND	20	ug/L
Pyridine	ND	20	ug/L
Safrole	ND	20	ug/L
1,2,4,5-Tetrachloro-benzene	ND	10	ug/L
2,3,4,6-Tetrachlorophenol	ND	50	ug/L
2-Toluidine	ND	10	ug/L
1,3,5-Trinitrobenzene	ND	50	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

GC/MS Semivolatiles

Lot-Sample #...: D1C230236-005 **Work Order #...:** DXWDG1AC **Matrix.....:** WG

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	75	(37 - 90)
Phenol-d5	78	(41 - 91)
Nitrobenzene-d5	77	(43 - 94)
2-Fluorobiphenyl	71	(33 - 90)
2,4,6-Tribromophenol	85	(42 - 103)
Terphenyl-d14	78	(29 - 112)

US GEOLOGICAL SURVEY

CAFB-Q

GC/MS Semivolatiles

Lot-Sample #: D1C230236-005 **Work Order #:** DXWDG1AC **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		68 J	M	1.867	ug/L
Unknown		7.3 J	M	2.3532	ug/L
Unknown		13 J	M	3.2453	ug/L
Unknown		4.6 J	M	4.084	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-6

GC Semivolatiles

Lot-Sample #...: D1C230236-001 **Work Order #...:** DXWCL1AC **Matrix.....:** WG
Date Sampled...: 03/22/01 12:20 **Date Received..:** 03/23/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085198 **Analysis Time..:** 18:51
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diallate	ND	1.0	ug/L
Isodrin	ND	0.10	ug/L
Kepone	ND	1.0	ug/L
Aldrin	ND	0.050	ug/L
alpha-BHC	ND	0.050	ug/L
beta-BHC	ND	0.050	ug/L
delta-BHC	ND	0.050	ug/L
gamma-BHC (Lindane)	ND	0.050	ug/L
alpha-Chlordane	ND	0.050	ug/L
gamma-Chlordane	ND	0.050	ug/L
4,4'-DDD	ND	0.050	ug/L
4,4'-DDE	ND	0.050	ug/L
4,4'-DDT	ND	0.050	ug/L
Dieldrin	ND	0.050	ug/L
Endosulfan I	ND	0.050	ug/L
Endosulfan II	ND	0.050	ug/L
Endosulfan sulfate	ND	0.050	ug/L
Endrin	ND	0.050	ug/L
Endrin aldehyde	ND	0.050	ug/L
Heptachlor	ND	0.050	ug/L
Heptachlor epoxide	ND	0.050	ug/L
Methoxychlor	ND	0.10	ug/L
Toxaphene	ND	2.0	ug/L
Endrin ketone	ND	0.050	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	104	(15 - 162)
Tetrachloro-m-xylene	87	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-E

GC Semivolatiles

Lot-Sample #...: D1C230236-002 **Work Order #...:** DXWC51AN **Matrix.....:** WG
Date Sampled...: 03/22/01 10:15 **Date Received..:** 03/23/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085198 **Analysis Time..:** 19:20
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diallate	ND	1.0	ug/L
Isodrin	ND	0.10	ug/L
Kepone	ND	1.0	ug/L
Aldrin	ND	0.050	ug/L
alpha-BHC	ND	0.050	ug/L
beta-BHC	ND	0.050	ug/L
delta-BHC	ND	0.050	ug/L
gamma-BHC (Lindane)	ND	0.050	ug/L
alpha-Chlordane	ND	0.050	ug/L
gamma-Chlordane	ND	0.050	ug/L
4,4'-DDD	ND	0.050	ug/L
4,4'-DDE	ND	0.050	ug/L
4,4'-DDT	ND	0.050	ug/L
Dieldrin	ND	0.050	ug/L
Endosulfan I	ND	0.050	ug/L
Endosulfan II	ND	0.050	ug/L
Endosulfan sulfate	ND	0.050	ug/L
Endrin	ND	0.050	ug/L
Endrin aldehyde	ND	0.050	ug/L
Heptachlor	ND	0.050	ug/L
Heptachlor epoxide	ND	0.050	ug/L
Methoxychlor	ND	0.10	ug/L
Toxaphene	ND	2.0	ug/L
Endrin ketone	ND	0.050	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	94	(15 - 162)
Tetrachloro-m-xylene	80	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-H

GC Semivolatiles

Lot-Sample #...: D1C230236-003 **Work Order #...:** DXWC91A1 **Matrix.....:** WG
Date Sampled...: 03/22/01 11:25 **Date Received..:** 03/23/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085198 **Analysis Time..:** 19:50
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diallate	ND	1.0	ug/L
Isodrin	ND	0.10	ug/L
Kepone	ND	1.0	ug/L
Aldrin	ND	0.050	ug/L
alpha-BHC	ND	0.050	ug/L
beta-BHC	ND	0.050	ug/L
delta-BHC	ND	0.050	ug/L
gamma-BHC (Lindane)	ND	0.050	ug/L
alpha-Chlordane	ND	0.050	ug/L
gamma-Chlordane	ND	0.050	ug/L
4,4'-DDD	ND	0.050	ug/L
4,4'-DDE	ND	0.050	ug/L
4,4'-DDT	ND	0.050	ug/L
Dieldrin	ND	0.050	ug/L
Endosulfan I	ND	0.050	ug/L
Endosulfan II	ND	0.050	ug/L
Endosulfan sulfate	ND	0.050	ug/L
Endrin	ND	0.050	ug/L
Endrin aldehyde	ND	0.050	ug/L
Heptachlor	ND	0.050	ug/L
Heptachlor epoxide	ND	0.050	ug/L
Methoxychlor	ND	0.10	ug/L
Toxaphene	ND	2.0	ug/L
Endrin ketone	ND	0.050	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	107	(15 - 162)
Tetrachloro-m-xylene	90	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

GC Semivolatiles

Lot-Sample #...: D1C230236-005 **Work Order #...:** DXWDG1AD **Matrix.....:** WG
Date Sampled...: 03/22/01 09:00 **Date Received..:** 03/23/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085198 **Analysis Time..:** 20:20
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diallate	ND	1.0	ug/L
Isodrin	ND	0.10	ug/L
Kepone	ND	1.0	ug/L
Aldrin	ND	0.050	ug/L
alpha-BHC	ND	0.050	ug/L
beta-BHC	ND	0.050	ug/L
delta-BHC	ND	0.050	ug/L
gamma-BHC (Lindane)	ND	0.050	ug/L
alpha-Chlordane	ND	0.050	ug/L
gamma-Chlordane	ND	0.050	ug/L
4,4'-DDD	ND	0.050	ug/L
4,4'-DDE	ND	0.050	ug/L
4,4'-DDT	ND	0.050	ug/L
Dieldrin	ND	0.050	ug/L
Endosulfan I	ND	0.050	ug/L
Endosulfan II	ND	0.050	ug/L
Endosulfan sulfate	ND	0.050	ug/L
Endrin	ND	0.050	ug/L
Endrin aldehyde	ND	0.050	ug/L
Heptachlor	ND	0.050	ug/L
Heptachlor epoxide	ND	0.050	ug/L
Methoxychlor	ND	0.10	ug/L
Toxaphene	ND	2.0	ug/L
Endrin ketone	ND	0.050	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	100	(15 - 162)
Tetrachloro-m-xylene	85	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-6

GC Semivolatiles

Lot-Sample #...: D1C230236-001 **Work Order #...:** DXWCL1AD **Matrix.....:** WG
Date Sampled...: 03/22/01 12:20 **Date Received..:** 03/23/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085201 **Analysis Time..:** 06:08
Dilution Factor: 1

Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	1.0	ug/L
Aroclor 1221	ND	1.0	ug/L
Aroclor 1232	ND	1.0	ug/L
Aroclor 1242	ND	1.0	ug/L
Aroclor 1248	ND	1.0	ug/L
Aroclor 1254	ND	1.0	ug/L
Aroclor 1260	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	98	(52 - 129)
Tetrachloro-m-xylene	80	(54 - 113)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-E

GC Semivolatiles

Lot-Sample #...: D1C230236-002 **Work Order #...:** DXWC51AP **Matrix.....:** WG
Date Sampled...: 03/22/01 10:15 **Date Received..:** 03/23/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085201 **Analysis Time..:** 06:42
Dilution Factor: 1
Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	1.0	ug/L
Aroclor 1221	ND	1.0	ug/L
Aroclor 1232	ND	1.0	ug/L
Aroclor 1242	ND	1.0	ug/L
Aroclor 1248	ND	1.0	ug/L
Aroclor 1254	ND	1.0	ug/L
Aroclor 1260	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	98	(52 - 129)
Tetrachloro-m-xylene	82	(54 - 113)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-H

GC Semivolatiles

Lot-Sample #...: D1C230236-003 **Work Order #...:** DXWC91A2 **Matrix.....:** WG
Date Sampled...: 03/22/01 11:25 **Date Received..:** 03/23/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085201 **Analysis Time..:** 07:15
Dilution Factor: 1

Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	1.0	ug/L
Aroclor 1221	ND	1.0	ug/L
Aroclor 1232	ND	1.0	ug/L
Aroclor 1242	ND	1.0	ug/L
Aroclor 1248	ND	1.0	ug/L
Aroclor 1254	ND	1.0	ug/L
Aroclor 1260	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	98	(52 - 129)
Tetrachloro-m-xylene	78	(54 - 113)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

GC Semivolatiles

Lot-Sample #...: D1C230236-005 Work Order #...: DXWDG1AE Matrix.....: WG
Date Sampled...: 03/22/01 09:00 Date Received..: 03/23/01
Prep Date.....: 03/26/01 Analysis Date..: 03/28/01
Prep Batch #...: 1085201 Analysis Time..: 07:49
Dilution Factor: 1

Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	1.0	ug/L
Aroclor 1221	ND	1.0	ug/L
Aroclor 1232	ND	1.0	ug/L
Aroclor 1242	ND	1.0	ug/L
Aroclor 1248	ND	1.0	ug/L
Aroclor 1254	ND	1.0	ug/L
Aroclor 1260	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	99	(52 - 129)
Tetrachloro-m-xylene	81	(54 - 113)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

GC Semivolatiles

Lot-Sample #...: D1C230236-005 **Work Order #...:** DXWDG1AF **Matrix.....:** WG
Date Sampled...: 03/22/01 09:00 **Date Received..:** 03/23/01
Prep Date.....: 03/28/01 **Analysis Date..:** 04/02/01
Prep Batch #...: 1087338 **Analysis Time..:** 16:20
Dilution Factor: 1

Method.....: SW846 8151A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-D	ND	4.0	ug/L
2,4,5-T	ND	1.0	ug/L
2,4,5-TP (Silvex)	ND	1.0	ug/L
Dinoseb	ND	0.60	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	94	(20 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

HPLC

Lot-Sample #...: D1C230236-005 **Work Order #...:** DXWDG1AG **Matrix.....:** WG
Date Sampled...: 03/22/01 09:00 **Date Received..:** 03/23/01
Prep Date.....: 03/27/01 **Analysis Date..:** 04/02/01
Prep Batch #...: 1086277 **Analysis Time..:** 17:34
Dilution Factor: 1

Method.....: SW846 8310

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	1.0	ug/L
Acenaphthylene	ND	1.0	ug/L
Anthracene	ND	0.10	ug/L
Benzo(a)anthracene	ND	0.10	ug/L
Benzo(a)pyrene	ND	0.10	ug/L
Benzo(b)fluoranthene	ND	0.10	ug/L
Benzo(ghi)perylene	ND	0.20	ug/L
Benzo(k)fluoranthene	ND	0.10	ug/L
Chrysene	ND	0.20	ug/L
Dibenzo(a,h)anthracene	ND	0.20	ug/L
Fluoranthene	ND	0.20	ug/L
Fluorene	ND	0.20	ug/L
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L
1-Methylnaphthalene	ND	1.0	ug/L
2-Methylnaphthalene	ND	1.0	ug/L
Naphthalene	ND	1.0	ug/L
Phenanthrene	ND	0.20	ug/L
Pyrene	ND	0.20	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	96	(54 - 126)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

Trace Level Organic Compounds

Lot-Sample #...: D1C230236-005 **Work Order #...:** DXWDG1AM **Matrix.....:** WG
Date Sampled...: 03/22/01 09:00 **Date Received..:** 03/23/01
Prep Date.....: 03/27/01 **Analysis Date..:** 03/29/01
Prep Batch #...: 1086405 **Analysis Time..:** 21:15
Dilution Factor: 1

Method.....: SW846 8280A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,3,7,8-TCDD	ND	0.82	ng/L
Total TCDD	ND	0.82	ng/L
Total PeCDD	ND	7.6	ng/L
Total HxCDD	ND	1.3	ng/L
Total TCDF	ND	1.1	ng/L
Total PeCDF	ND	2.5	ng/L
Total HxCDF	ND	1.1	ng/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	102	(25 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-6

TOTAL Metals

Lot-Sample #...: D1C230236-001 Matrix.....: WG
Date Sampled...: 03/22/01 12:20 Date Received..: 03/23/01

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1085190						
Mercury	ND	0.20	ug/L	SW846 7470A	03/26-03/27/01	DXWCL1A6
		Dilution Factor: 1		Analysis Time..: 14:42		
Prep Batch #...: 1087259						
Aluminum	**82.6 B**	**100**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWCL1AL**
		Dilution Factor: 1		Analysis Time..: 17:51		
Barium	**30.3**	**10.0**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWCL1AM**
		Dilution Factor: 1		Analysis Time..: 13:17		
Beryllium	ND	2.0	ug/L	SW846 6010B	03/29-03/30/01	DXWCL1AN
		Dilution Factor: 1		Analysis Time..: 13:17		
Calcium	**59000**	**200**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWCL1CA**
		Dilution Factor: 1		Analysis Time..: 17:51		
Cobalt	ND	10.0	ug/L	SW846 6010B	03/29-03/30/01	DXWCL1A7
		Dilution Factor: 1		Analysis Time..: 13:17		
Copper	**3.2 B**	**20.0**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWCL1AP**
		Dilution Factor: 1		Analysis Time..: 13:17		
Iron	**86.7 B**	**100**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWCL1AQ**
		Dilution Factor: 1		Analysis Time..: 17:51		
Potassium	**7610**	**3000**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWCL1CD**
		Dilution Factor: 1		Analysis Time..: 17:51		
Magnesium	**56900**	**200**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWCL1CC**
		Dilution Factor: 1		Analysis Time..: 17:51		
Manganese	**0.92 B**	**10.0**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWCL1AR**
		Dilution Factor: 1		Analysis Time..: 13:17		
Sodium	**57200**	**5000**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWCL1CE**
		Dilution Factor: 1		Analysis Time..: 17:51		
Nickel	ND	40.0	ug/L	SW846 6010B	03/29-03/30/01	DXWCL1AT
		Dilution Factor: 1		Analysis Time..: 13:17		
Tin	ND	100	ug/L	SW846 6010B	03/29-03/30/01	DXWCL1A8
		Dilution Factor: 1		Analysis Time..: 13:17		

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-6

TOTAL Metals

Lot-Sample #...: D1C230236-001 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	17.1	10.0	ug/L	SW846 6010B	03/29-03/30/01	DXWCL1AU
		Dilution Factor: 1		Analysis Time..: 13:17		
Zinc	15.9 B	20.0	ug/L	SW846 6010B	03/29-03/30/01	DXWCL1AV
		Dilution Factor: 1		Analysis Time..: 13:17		
Molybdenum	2.9 B	20.0	ug/L	SW846 6010B	03/29-03/30/01	DXWCL1A9
		Dilution Factor: 1		Analysis Time..: 13:17		
Prep Batch #...: 1089265						
Silver	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXWCL1A3
		Dilution Factor: 1		Analysis Time..: 19:12		
Arsenic	3.0 B	5.0	ug/L	SW846 6020	04/05-04/11/01	DXWCL1AX
		Dilution Factor: 1		Analysis Time..: 19:12		
Cadmium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXWCL1A0
		Dilution Factor: 1		Analysis Time..: 19:12		
Chromium	3.4	1.0	ug/L	SW846 6020	04/05-04/11/01	DXWCL1A5
		Dilution Factor: 1		Analysis Time..: 19:12		
Lead	0.65 B	1.0	ug/L	SW846 6020	04/05-04/11/01	DXWCL1A1
		Dilution Factor: 1		Analysis Time..: 19:12		
Antimony	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXWCL1AW
		Dilution Factor: 1		Analysis Time..: 19:12		
Selenium	6.2	5.0	ug/L	SW846 6020	04/05-04/11/01	DXWCL1A2
		Dilution Factor: 1		Analysis Time..: 19:12		
Thallium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXWCL1A4
		Dilution Factor: 1		Analysis Time..: 19:12		

NOTE(S):

B Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-E

TOTAL Metals

Lot-Sample #...: D1C230236-002 Matrix.....: WG
Date Sampled...: 03/22/01 10:15 Date Received..: 03/23/01

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1085190						
Mercury	ND	0.20	ug/L	SW846 7470A	03/26-03/27/01	DXWC51AH
		Dilution Factor: 1		Analysis Time..: 14:44		
Prep Batch #...: 1087259						
Potassium	6700	3000	ug/L	SW846 6010B	03/29-03/30/01	DXWC51CD
		Dilution Factor: 1		Analysis Time..: 18:03		
Magnesium	43500	200	ug/L	SW846 6010B	03/29-03/30/01	DXWC51CC
		Dilution Factor: 1		Analysis Time..: 18:03		
Manganese	2.0 B	10.0	ug/L	SW846 6010B	03/29-03/30/01	DXWC51A4
		Dilution Factor: 1		Analysis Time..: 13:22		
Sodium	60300	5000	ug/L	SW846 6010B	03/29-03/30/01	DXWC51CE
		Dilution Factor: 1		Analysis Time..: 18:03		
Tin	ND	100	ug/L	SW846 6010B	03/29-03/30/01	DXWC51AK
		Dilution Factor: 1		Analysis Time..: 13:22		
Nickel	ND	40.0	ug/L	SW846 6010B	03/29-03/30/01	DXWC51A5
		Dilution Factor: 1		Analysis Time..: 13:22		
Vanadium	18.0	10.0	ug/L	SW846 6010B	03/29-03/30/01	DXWC51A6
		Dilution Factor: 1		Analysis Time..: 13:22		
Zinc	7.0 B	20.0	ug/L	SW846 6010B	03/29-03/30/01	DXWC51A7
		Dilution Factor: 1		Analysis Time..: 13:22		
Aluminum	107	100	ug/L	SW846 6010B	03/29-03/30/01	DXWC51AX
		Dilution Factor: 1		Analysis Time..: 18:03		
Barium	51.8	10.0	ug/L	SW846 6010B	03/29-03/30/01	DXWC51A0
		Dilution Factor: 1		Analysis Time..: 13:22		
Beryllium	ND	2.0	ug/L	SW846 6010B	03/29-03/30/01	DXWC51A1
		Dilution Factor: 1		Analysis Time..: 13:22		
Calcium	47300	200	ug/L	SW846 6010B	03/29-03/30/01	DXWC51CA
		Dilution Factor: 1		Analysis Time..: 18:03		
Cobalt	ND	10.0	ug/L	SW846 6010B	03/29-03/30/01	DXWC51AJ
		Dilution Factor: 1		Analysis Time..: 13:22		

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-E

TOTAL Metals

Lot-Sample #...: D1C230236-002 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	20.0	ug/L	SW846 6010B	03/29-03/30/01	DXWC51A2
		Dilution Factor: 1		Analysis Time..: 13:22		
Iron	**84.0 B**	**100**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWC51A3**
		Dilution Factor: 1		Analysis Time..: 18:03		
Molybdenum	ND	20.0	ug/L	SW846 6010B	03/29-03/30/01	DXWC51AL
		Dilution Factor: 1		Analysis Time..: 13:22		
Prep Batch #...: 1089265						
Selenium	**5.2**	**5.0**	**ug/L**	**SW846 6020**	**04/05-04/11/01**	**DXWC51AD**
		Dilution Factor: 1		Analysis Time..: 19:17		
Thallium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXWC51AF
		Dilution Factor: 1		Analysis Time..: 19:17		
Lead	**5.4**	**1.0**	**ug/L**	**SW846 6020**	**04/05-04/11/01**	**DXWC51AC**
		Dilution Factor: 1		Analysis Time..: 19:17		
Antimony	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXWC51A8
		Dilution Factor: 1		Analysis Time..: 19:17		
Silver	**0.060 B**	**1.0**	**ug/L**	**SW846 6020**	**04/05-04/11/01**	**DXWC51AE**
		Dilution Factor: 1		Analysis Time..: 19:17		
Arsenic	**3.1 B**	**5.0**	**ug/L**	**SW846 6020**	**04/05-04/11/01**	**DXWC51A9**
		Dilution Factor: 1		Analysis Time..: 19:17		
Cadmium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXWC51AA
		Dilution Factor: 1		Analysis Time..: 19:17		
Chromium	**12.0**	**1.0**	**ug/L**	**SW846 6020**	**04/05-04/11/01**	**DXWC51AG**
		Dilution Factor: 1		Analysis Time..: 19:17		

NOTE(S):

B Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-H

TOTAL Metals

Lot-Sample #...: D1C230236-003 **Matrix.....:** WG
Date Sampled...: 03/22/01 11:25 **Date Received..:** 03/23/01

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1085190						
Mercury	ND	0.20	ug/L	SW846 7470A	03/26-03/27/01	DXWC91AU
		Dilution Factor: 1		Analysis Time..: 14:46		
Prep Batch #...: 1087259						
Aluminum	**111**	**100**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWC91A8**
		Dilution Factor: 1		Analysis Time..: 18:06		
Barium	**30.3**	**10.0**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWC91AA**
		Dilution Factor: 1		Analysis Time..: 13:27		
Beryllium	ND	2.0	ug/L	SW846 6010B	03/29-03/30/01	DXWC91AC
		Dilution Factor: 1		Analysis Time..: 13:27		
Calcium	**43500**	**200**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWC91A9**
		Dilution Factor: 1		Analysis Time..: 18:06		
Cobalt	ND	10.0	ug/L	SW846 6010B	03/29-03/30/01	DXWC91AV
		Dilution Factor: 1		Analysis Time..: 13:27		
Copper	ND	20.0	ug/L	SW846 6010B	03/29-03/30/01	DXWC91AD
		Dilution Factor: 1		Analysis Time..: 13:27		
Iron	**54.3 B**	**100**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWC91AE**
		Dilution Factor: 1		Analysis Time..: 18:06		
Potassium	**6630**	**3000**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWC91CC**
		Dilution Factor: 1		Analysis Time..: 18:06		
Magnesium	**40400**	**200**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWC91CA**
		Dilution Factor: 1		Analysis Time..: 18:06		
Manganese	**1.1 B**	**10.0**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWC91AF**
		Dilution Factor: 1		Analysis Time..: 13:27		
Sodium	**57900**	**5000**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWC91CD**
		Dilution Factor: 1		Analysis Time..: 18:06		
Nickel	**6.4 B**	**40.0**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWC91AG**
		Dilution Factor: 1		Analysis Time..: 13:27		
Tin	ND	100	ug/L	SW846 6010B	03/29-03/30/01	DXWC91AW
		Dilution Factor: 1		Analysis Time..: 13:27		

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-H

TOTAL Metals

Lot-Sample #...: D1C230236-003 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	19.4	10.0	ug/L	SW846 6010B	03/29-03/30/01	DXWC91AH
		Dilution Factor: 1		Analysis Time..: 13:27		
Zinc	53.3	20.0	ug/L	SW846 6010B	03/29-03/30/01	DXWC91AJ
		Dilution Factor: 1		Analysis Time..: 13:27		
Molybdenum	2.6 B	20.0	ug/L	SW846 6010B	03/29-03/30/01	DXWC91AX
		Dilution Factor: 1		Analysis Time..: 13:27		
Prep Batch #...: 1089265						
Silver	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXWC91AQ
		Dilution Factor: 1		Analysis Time..: 19:21		
Arsenic	3.4 B	5.0	ug/L	SW846 6020	04/05-04/11/01	DXWC91AL
		Dilution Factor: 1		Analysis Time..: 19:21		
Cadmium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXWC91AM
		Dilution Factor: 1		Analysis Time..: 19:21		
Chromium	3.5	1.0	ug/L	SW846 6020	04/05-04/11/01	DXWC91AT
		Dilution Factor: 1		Analysis Time..: 19:21		
Lead	0.38 B	1.0	ug/L	SW846 6020	04/05-04/11/01	DXWC91AN
		Dilution Factor: 1		Analysis Time..: 19:21		
Antimony	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXWC91AK
		Dilution Factor: 1		Analysis Time..: 19:21		
Selenium	6.7	5.0	ug/L	SW846 6020	04/05-04/11/01	DXWC91AP
		Dilution Factor: 1		Analysis Time..: 19:21		
Thallium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXWC91AR
		Dilution Factor: 1		Analysis Time..: 19:21		

NOTE(S):

B Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

TOTAL Metals

Lot-Sample #...: D1C230236-005 **Matrix.....:** WG
Date Sampled...: 03/22/01 09:00 **Date Received..:** 03/23/01

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1085190						
Mercury	ND	0.20	ug/L	SW846 7470A	03/26-03/27/01	DXWDG1A9
		Dilution Factor: 1		Analysis Time..: 14:47		
Prep Batch #...: 1087259						
Aluminum	**87.2 B**	**100**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWDG1AP**
		Dilution Factor: 1		Analysis Time..: 18:10		
Barium	**26.6**	**10.0**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWDG1AQ**
		Dilution Factor: 1		Analysis Time..: 13:32		
Beryllium	ND	2.0	ug/L	SW846 6010B	03/29-03/30/01	DXWDG1AR
		Dilution Factor: 1		Analysis Time..: 13:32		
Calcium	**43800**	**200**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWDG1CE**
		Dilution Factor: 1		Analysis Time..: 18:10		
Cobalt	ND	10.0	ug/L	SW846 6010B	03/29-03/30/01	DXWDG1CA
		Dilution Factor: 1		Analysis Time..: 13:32		
Copper	ND	20.0	ug/L	SW846 6010B	03/29-03/30/01	DXWDG1AT
		Dilution Factor: 1		Analysis Time..: 13:32		
Iron	**479**	**100**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWDG1AU**
		Dilution Factor: 1		Analysis Time..: 18:10		
Potassium	**5960**	**3000**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWDG1CG**
		Dilution Factor: 1		Analysis Time..: 18:10		
Sodium	**51500**	**5000**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWDG1CH**
		Dilution Factor: 1		Analysis Time..: 18:10		
Nickel	**90.5**	**40.0**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWDG1AW**
		Dilution Factor: 1		Analysis Time..: 13:32		
Magnesium	**40800**	**200**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWDG1CF**
		Dilution Factor: 1		Analysis Time..: 18:10		
Manganese	**13.9**	**10.0**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DXWDG1AV**
		Dilution Factor: 1		Analysis Time..: 13:32		
Tin	ND	100	ug/L	SW846 6010B	03/29-03/30/01	DXWDG1CC
		Dilution Factor: 1		Analysis Time..: 13:32		

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

TOTAL Metals

Lot-Sample #...: D1C230236-005 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	27.2	10.0	ug/L	SW846 6010B	03/29-03/30/01	DXWDG1AX
		Dilution Factor: 1		Analysis Time..: 13:32		
Zinc	3.5 B	20.0	ug/L	SW846 6010B	03/29-03/30/01	DXWDG1A0
		Dilution Factor: 1		Analysis Time..: 13:32		
Molybdenum	3.8 B	20.0	ug/L	SW846 6010B	03/29-03/30/01	DXWDG1CD
		Dilution Factor: 1		Analysis Time..: 13:32		
Prep Batch #...: 1089265						
Silver	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXWDG1A6
		Dilution Factor: 1		Analysis Time..: 19:26		
Arsenic	5.3	5.0	ug/L	SW846 6020	04/05-04/11/01	DXWDG1A2
		Dilution Factor: 1		Analysis Time..: 19:26		
Cadmium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXWDG1A3
		Dilution Factor: 1		Analysis Time..: 19:26		
Chromium	40.5	1.0	ug/L	SW846 6020	04/05-04/11/01	DXWDG1A8
		Dilution Factor: 1		Analysis Time..: 19:26		
Lead	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXWDG1A4
		Dilution Factor: 1		Analysis Time..: 19:26		
Antimony	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXWDG1A1
		Dilution Factor: 1		Analysis Time..: 19:26		
Selenium	6.4	5.0	ug/L	SW846 6020	04/05-04/11/01	DXWDG1A5
		Dilution Factor: 1		Analysis Time..: 19:26		
Thallium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DXWDG1A7
		Dilution Factor: 1		Analysis Time..: 19:26		

NOTE(S):

B Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-6

General Chemistry

Lot-Sample #...: D1C230236-001 **Work Order #...:** DXWCL **Matrix.....:** WG
Date Sampled...: 03/22/01 12:20 **Date Received..:** 03/23/01

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate	**5.6**	**0.10**	**mg/L**	**MCAWW 353.2**	**03/23/01**	**1107364**
		Dilution Factor: 1		Analysis Time..: 10:30		
Nitrite	ND	0.010	mg/L	MCAWW 354.1	03/23/01	1085344
		Dilution Factor: 1		Analysis Time..: 16:30		
Perchlorate	ND	20.0	ug/L	EPA 314.0	03/26/01	1086178
		Dilution Factor: 1		Analysis Time..: 11:58		
Sulfate	**169 Q**	**25.0**	**mg/L**	**MCAWW 300.0A**	**04/05-04/06/01**	**1096449**
		Dilution Factor: 5		Analysis Time..: 02:20		
Total Dissolved Solids	**627**	**10.0**	**mg/L**	**MCAWW 160.1**	**03/28/01**	**1087426**
		Dilution Factor: 1		Analysis Time..: 17:00		
Total Sulfide	ND	4.0	mg/L	SW846 9030B/9034	03/29/01	1088250
		Dilution Factor: 1		Analysis Time..: 12:00		

NOTE(S):

RL Reporting Limit

Q Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-E

General Chemistry

Lot-Sample #...: D1C230236-002 Work Order #...: DXWC5 Matrix.....: WG
Date Sampled...: 03/22/01 10:15 Date Received..: 03/23/01

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate	**1.4**	**0.10**	**mg/L**	**MCAWW 353.2**	**03/23/01**	**1107364**
		Dilution Factor: 1		Analysis Time..: 10:30		
Nitrite	ND	0.010	mg/L	MCAWW 354.1	03/23/01	1085344
		Dilution Factor: 1		Analysis Time..: 16:34		
Sulfate	**81.1 Q**	**10.0**	**mg/L**	**MCAWW 300.0A**	**04/05-04/06/01**	**1096449**
		Dilution Factor: 2		Analysis Time..: 02:57		
Total Dissolved Solids	**503**	**10.0**	**mg/L**	**MCAWW 160.1**	**03/28/01**	**1087426**
		Dilution Factor: 1		Analysis Time..: 17:00		
Total Sulfide	ND	4.0	mg/L	SW846 9030B/9034	03/29/01	1088250
		Dilution Factor: 1		Analysis Time..: 12:00		

NOTE(S):

RL Reporting Limit

Q Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-H

General Chemistry

Lot-Sample #...: D1C230236-003 Work Order #...: DXWC9 Matrix.....: WG
Date Sampled...: 03/22/01 11:25 Date Received..: 03/23/01

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate	1.3	0.10	mg/L	MCAWW 353.2	03/23/01	1107364
		Dilution Factor: 1		Analysis Time..: 10:30		
Nitrite	ND	0.010	mg/L	MCAWW 354.1	03/23/01	1085344
		Dilution Factor: 1		Analysis Time..: 16:35		
Sulfate	126 Q	25.0	mg/L	MCAWW 300.0A	04/05-04/06/01	1096449
		Dilution Factor: 5		Analysis Time..: 03:16		
Total Dissolved Solids	468	10.0	mg/L	MCAWW 160.1	03/28/01	1087426
		Dilution Factor: 1		Analysis Time..: 17:00		
Total Sulfide	ND	4.0	mg/L	SW846 9030B/9034	03/29/01	1088250
		Dilution Factor: 1		Analysis Time..: 12:00		

NOTE(S):

RL Reporting Limit

Q Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

General Chemistry

Lot-Sample #...: D1C230236-005 **Work Order #...:** DXWDG **Matrix.....:** WG
Date Sampled...: 03/22/01 09:00 **Date Received..:** 03/23/01

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	ND	0.010	mg/L	SW846 9012A	04/03/01	1093368
		Dilution Factor: 1		Analysis Time..: 13:00		
Perchlorate	**5.8 B**	**20.0**	**ug/L**	**EPA 314.0**	**03/26-03/27/01**	**1086178**
		Dilution Factor: 1		Analysis Time..: 12:13		
Total Organic Carbon	**0.39 B**	**1.0**	**mg/L**	**SW846 9060**	**04/16/01**	**1107405**
		Dilution Factor: 1		Analysis Time..: 12:00		
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	04/10-04/11/01	1102313
		Dilution Factor: 1		Analysis Time..: 12:00		
Total Sulfide	ND	4.0	mg/L	SW846 9030B/9034	03/29/01	1088250
		Dilution Factor: 1		Analysis Time..: 12:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

APPENDIX IV

Laboratory Quality Assurance / Quality Control Results

LABORATORY DATA VALIDATION CHECKLIST

SECTION 1.0: GENERAL INFORMATION (Landfill 5)
(also see Appendix 1, 2 & 3)

Data reviewer(s) name, affiliation, title, signature, and date of review:

Fredrick E. Gebhardt, USGS, Hydrologic Technician, 22OCT2001

DATA INVENTORY

1.1 Sample project number: Severn Trent Services, Report # D1C210269, D1C220263, and D1C230236

1.2 Operable unit and site: Landfill 5 unit, Cell 3
Cannon Air Force Base, New Mexico

Sample collection date: 20-22MAR2001

1.3 Sample locations (location IDs): Wells CAFB-B, C, D, O, S, T, and U; CAFB-TT was a duplicate sample for CAFB-T.

1.4 Sample matrix (ground water, soil, other): ground water

1.5 Type and number of field samples (environmental and quality control) in sample project:

Type	number	Type	number
environmental	7	MS/MSD	1 pair
field duplicate	1	trip blank	2
equipment blank	0	ambient blank	0

SECTION 1.0: GENERAL INFORMATION (Sewage Logoons)
(see also Appendix 3)

Data reviewer(s) name, affiliation, title, signature, and date of review:

Fredrick E. Gebhardt, USGS, Hydrologic Technician,

DATA INVENTORY

1.1 Sample project number: Severn Trent Services, Report # D1C230236

1.2 Operable unit and site: Sewage Lagoon, Cannon Air Force Base, New Mexico

Sample collection date: 22MAR2001

1.3 Sample locations (location IDs): Wells CAFB-E, CAFB-G, and CAFB-H;

1.4 Sample matrix (ground water, soil, other): ground water

1.5 Type and number of field samples (environmental and quality control) in sample project:

Type	number	Type	number
environmental	3	MS/MSD	0
field duplicate	0	trip blank	1
equipment blank	0	ambient blank	0

OTHER CHECKLIST SECTIONS COMPLETED FOR SAMPLE PROJECT:

√ 2.0 Data Reports and Completeness

√ 3.0 Appendix-IX, Volatile organic compounds (VOC)--Method SW5030/SW8260B

√ 4.0 Appendix-IX, Semivolatile organic compounds (SVOC)--Method SW3510/SW8270C

√ 5.0 Appendix-IX, Pesticides and PCB's--Method SW3520/SW8081A and 8082

√ 6.0 Appendix-IX, Herbicides--Method SW3520/SW8151A

√ 7.0 Appendix-IX, Dioxins and Furans--Method SW3520/SW8280

√ 8.0 Appendix-IX, Polynuclear aromatic hydrocarbons (PAH)--Method SW3510/SW8310

√ 9.0 Appendix-IX, Metals (Total)--Methods SW3005/SW6010B (Aluminum, Barium, Beryllium, Calcium, Cobalt, Copper, Iron, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Sodium, Tin, Vanadium, and Zinc), SW3005/SW6020 (Antimony, Arsenic, Cadmium, Chromium, Lead, Selenium, Silver, and Thallium), and SW3020/SW7470A (Mercury).

√ 10.0 Cyanide and Sulfide--Methods SW9012A (cyanide), 9030B/9030 (sulfide)

√ 11.0 Total Organic Carbon (TOC)--Method SW9060

√ 12.0 Total Organic Halogens (TOX)--Method SW9020B

√ 13.0 Sulfate--Method MCAWW300.0A

√ 14.0 Nitrate/Nitrite--Method MCAWW353.2/MCAWW354.1

√ 15.0 Sulfide--Method SW9030B/9034

√ 16.0 Total Dissolved Solids (TDS)--Method MCAWW160.1

SECTION 2.0: DATA REPORTS AND COMPLETENESS

Name of reviewer(s) and review date: Fredrick E. Gebhardt

LABORATORY DATA REPORTS

2.1 Analytical Results Report--report date: 17APR2001 & 20APR2001

2.2 Raw Data Report--number of volumes: N/A

2.3 Was completeness of lab reports acceptable? yes √ no ____

(overview, analytical results, quality-control report)

Lab report was complete and acceptable.

DATA COMPLETENESS

2.4 Were all samples requested on chain of custody form analyzed by lab? yes √ no ____

All appendix IX parameters (Landfill 5):

	VOC SW8260B	SVOC SW8270C	Pesticide SW8081A/ SW8082	Herbicide SW8151A	Dioxin SW8280
requested:	12	10	10	10	10
analyzed:	12	10	10	10	10

	PAH SW8310	Total Metals: 16-SW6010B, 8-SW6020, Mercury by SW7470A	Cyanide by SW9012A, Sulfide by 9030B/9034	TOC SW9060	TOX SW9020B
requested:	10	10	10	10	10
analyzed:	10	10	10	10	10

All appendix IX parameters (Sewage Logoons):

	VOC SW8260B	Pesticides SW8081A, SW8082	Total Metals: 16-SW6010B 8-SW6020 Mercury-SW7470A	Sulfate MCAWW 300.0A	Nitrate & Nitrite by MCAWW 353.2/354.1
requested:	4	3	3	3	3
analyzed:	4	3	3	3	3

	TDS MCAWW 160.1
requested:	3
analyzed:	3

2.5List cancelled analyses on cancelled-data worksheet: None.

2.6 Was sample cooler seal intact upon receipt by lab? Yes

2.7 What was the sample cooler temperature upon receipt by lab? Temperatures ranged from 0.3 - 2.1 °C (D1C220263); 2.3 °C (D1C210269); 1.1 & 1.3 °C (D1C230236).

2.8 Additional comments: Generally there are four wells sampled around the Sewage Lagoons. CAFB-F would not pump water. It was discovered after removing the pump, that the water table had dropped below the intake on the pump.

The pump system was taken to the USGS warehouse in Albuquerque and spliced a hose extendtion.

CAFB-F will be sampled at a later date.

Analytical report # D1C230236 has analysis for well CAFB-6. This is a misreading from the Chain of Custody Report. The actual well is CAFB-G.

SECTION 3.0: APPENDIX-IX, VOLATILE ORGANIC COMPOUNDS-- METHOD SW5030/SW8260B

Name of reviewer(s) and review date: Fredrick E. Gebhardt 22OCT2001

LEVEL I AND II -- Data Validation

HOLDING TIMES

3.1 Were project-required analytical holding times met? yes √ no ____

(14-day limit from sample date to analysis date for water samples)

[FG-ORG, p. 6-8]

sample date: 20-22Mar2001 analysis date limit: 3-5APR2001

Samples were analyzed by required holding times.

SURROGATE SPIKE RECOVERY

3.2 Did surrogate spike results meet frequency and QC acceptance criteria? yes √ no ____

(all samples and blanks: SW8260A:%R varies)

[FG-ORG, p. 26-29]

All surrogate spike recovery results met Severn Trent QC acceptance criteria.

PROJECT REPORTING LIMIT (PRL)

3.3 Did sample results meet project reporting limits? yes √ no ____

PRL's were not provided in Sampling and Analysis Plan (SAP).

FIELD DUPLICATES

3.4 Did field duplicate results meet frequency and QC acceptance criteria?yes √ no ____

(1 set per sampling period; RPD < 30 %)

Field duplicate results met QC acceptance criteria.

EQUIPMENT BLANKS

3.5 Did equipment blank results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set for non-dedicated pump; analytes <3 x RL)

[FG-ORG, p. 20-25]

N/A No equipment blanks were collected.

AMBIENT and TRIP BLANKS (water samples only)

3.6 Did blank results meet frequency and QC acceptance criteria? yes √ no ____

(ambient and trip blank frequency varies per sampling period)

[FG-ORG, p. 20-25]

All trip blank results were ND or below reporting limit and met QC acceptance criteria. Ambient condition blank was not collected for this sampling period.

TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

3.7 List number and level of TICs for each sample analyzed on TIC data sheet.

[FG-ORG, p. 41-44]

Sample ID	Page Number	Number of TICs	Reporting Level*
CAFB-B	II-23	3	T1
CAFB-C	II-17	5	T1,T2
CAFB-C TB	II-20	5	T1,T2
CAFB-D	II-29	5	T1,T2
CAFB-D TB	II-32	4	T1,T2
CAFB-O	III-22	3	T1,T2
CAFB-O TB	III-25	1	T2
CAFB-S	I-10	3	T1,T2
CAFB-T	II-26	4	T1,T2
CAFB-TT	II-11	5	T1
CAFB-U	II-14	4	T1,T2

DUPLICATE CONTROL SAMPLES (DCSs)

3.8 Did DCS results meet frequency and QC acceptance criteria? yes √ no ____

(1 DCS per quarter; %R and RPD within 3 SD of historical results of lab performance)

[FG-ORG, p. 32-33]

All DCS results met QC acceptance criteria.

SINGLE CONTROL SAMPLES (SCSs)

3.9 Did SCS results meet frequency and QC acceptance criteria? yes √ no ____

(1 SCS per sample lot; %R limits established by laboratory)

[FG-ORG, p. 32-33]

All SCS results met QC acceptance criteria.

LABORATORY METHOD BLANKS

3.10 Did method blank results meet frequency and QC acceptance criteria? yes √ no ____

(1 method blank per batch; analyte concentration ≤ RL except for common lab contaminants ≤ 5 times RL)

[FG-ORG, p. 20-25]

All method blank results were ND or J value (less than RL) and met QC acceptance criteria.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

3.11 Did MS/MSD results meet frequency and QC acceptance criteria? yes √ no ____

(1 set per quarter; method SW8260A: %R and RPD varies)

[FG-ORG, p. 30-31]

All MS/MSD results met QC acceptance criteria.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

3.12 Did initial calibrations meet frequency and QC acceptance criteria? yes ____ no ____

[FG-ORG, p. 12-16]

Not reviewed.

3.13 Did continuing calibrations meet frequency and QC acceptance criteria? yes ____ no ____

[FG-ORG, p. 17-19]

Not reviewed.

GC/MS TUNING

3.14 Did BFB tuning results meet frequency and QC acceptance criteria? yes _____ no _____

[FG-ORG, p. 9-11]

Not reviewed.

INTERNAL STANDARDS (IS)

3.15 Did IS results meet frequency and QC acceptance criteria? yes _____ no _____

(all blanks, standards, and samples; IS area limits within 50 to 200%)
[FG-ORG, p. 35-36]

Not reviewed

SAMPLE RESULT VERIFICATION

3.16 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? [FG-ORG, p. 47] yes _____ no _____

Not reviewed

LEVEL I and II -- Data Validation

ANALYTE RESULTS WITH DATA QUALIFIERS

3.17 Summarize analyte results with data qualifiers. List pertinent information on qualified-data worksheet: For sample CAFB-U had qualifier J for Dichlorodifluo-
romethane and Trichlorofluoromethane.
chloroform, qualifier J.

J = Result is estimated and is less than reporting limit

3.18 Additional comments: None.

SECTION 3.0: APPENDIX-IX, VOLATILE ORGANIC COMPOUNDS-- METHOD SW5030/SW8260B

Name of reviewer(s) and review date: Fredrick E. Gebhardt 22OCT2001

LEVEL I AND II -- Data Validation

HOLDING TIMES

3.1 Were project-required analytical holding times met? yes √ no ____

(14-day limit from sample date to analysis date for water samples)

[FG-ORG, p. 6-8]

sample date: 22MAR2001 analysis date limit: 5APR2001

Samples were analyzed by 5APR2001, and met required holding times.

SURROGATE SPIKE RECOVERY

3.2 Did surrogate spike results meet frequency and QC acceptance criteria? yes √ no ____

(all samples and blanks: %R varies)

[FG-ORG, p. 26-29]

All surrogate spike recovery results met QC acceptance criteria.

PROJECT REPORTING LIMIT (PRL)

3.3 Did sample results meet project reporting limits? yes √ no ____

PRL's were not provided in Sampling and Analysis Plan (SAP). Reporting limits were not raised for any of the sample.

FIELD DUPLICATES

3.4 Did field duplicate results meet frequency and QC acceptance criteria?yes ____ no ____

(1 set per sampling period; RPD < 30 %)

Field duplicate was not collected for this sampling round.

EQUIPMENT BLANKS

3.5 Did equipment blank results meet frequency and QC acceptance criteria? yes _____ no _____

(1 set for non-dedicated pump; analytes <3 x RL)

[FG-ORG, p. 20-25]

N/A - See Comment 2.8.

AMBIENT and TRIP BLANKS (water samples only)

3.6 Did blank results meet frequency and QC acceptance criteria? yes __√__ no _____

(ambient and trip blank frequency varies per sampling period)

[FG-ORG, p. 20-25]

Trip blank results were ND or j value (below reporting limit) and met QC acceptance criteria. Ambient condition blank was not collected for this sampling period.

TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

3.7 List number and level of TICs for each sample analyzed on TIC data sheet.

[FG-ORG, p. 41-44]

Sample ID	Page Number	Number of TICs	Reporting Level*
CAFB-E	III-13	1	T2
CAFB-E TB	III-19	1	T1

DUPLICATE CONTROL SAMPLES (DCSs)

3.8 Did DCS results meet frequency and QC acceptance criteria? yes __√__ no _____

(1 DCS per quarter; %R and RPD within 3 SD of historical results of lab performance)

[FG-ORG, p. 32-33]

All DCS results met QC acceptance criteria.

SINGLE CONTROL SAMPLES (SCSs)

3.9 Did SCS results meet frequency and QC acceptance criteria? yes √ no ____

(1 SCS per sample lot; %R limits established by laboratory)

[FG-ORG, p. 32-33]

All SCS results met QC acceptance criteria.

LABORATORY METHOD BLANKS

3.10 Did method blank results meet frequency and QC acceptance criteria? yes √ no ____

(1 method blank per batch; analyte concentration ≤ RL except for common lab contaminants ≤ 5 times RL)

[FG-ORG, p. 20-25]

All method blank results were ND or below reporting limits and met QC acceptance criteria.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

3.11 Did MS/MSD results meet frequency and QC acceptance criteria? yes √ no ____

(1 set per quarter: %R and RPD varies)

[FG-ORG, p. 30-31]

All MS/MSD results met QC acceptance criteria.

LEVEL I and II -- Data Validation

ANALYTE RESULTS WITH DATA QUALIFIERS

3.12 Summarize analyte results with data qualifiers. List pertinent information on qualified-data worksheet: For samples H, G, F, and trip blank, acetone and / or methylene chloride had qualifier J and B.
J = Result is estimated and is less than reporting limit.
B = Method blank contamination.

3.13 Additional comments: None.

SECTION 4.0: APPENDIX-IX SEMIVOLATILE ORGANIC COMPOUNDS-- METHOD SW846/SW8270C

Name of reviewer(s) and review date: Fredrick E. Gebhardt 22oct2001

LEVEL I AND II -- Data Validation

HOLDING TIMES

4.1 Were project-required analytical holding times met? yes √ no ____

(7-day limit from sample date to extraction date for water samples)

(40-day limit from sample extraction date to analysis date for water samples)

[FG-ORG, p. 49-50]

sample date: 20-22Mar2001 extraction date limit: 27-29MAR2001

extraction date: 23-26MAR2001 analysis date limit: 27-28MAR2001

Samples were extracted and analyzed by required extraction and analysis holding time limits.

SURROGATE SPIKE RECOVERY

4.2 Did surrogate spike results meet frequency and QC acceptance criteria? yes √ no ____

(frequency: all samples and blanks: SW8270B:%R varies)

[FG-ORG, p. 66-68]

All surrogate recoveries were within QC acceptance criteria.

PROJECT REPORTING LIMIT (PRL)

4.3 Did sample results meet project reporting limits? yes √ no ____

PRL's were not provided in SAP. Reporting limits were not raised for any of the samples.

FIELD DUPLICATES

4.4 Did field duplicate results meet frequency and QC acceptance criteria?yes ___√___ no _____

(1 set per sampling period; RPD ≤ 30%)

Field duplicate results met QC acceptance criteria.

EQUIPMENT BLANKS

4.5 Did equipment blank results meet frequency and QC acceptance criteria? yes ___√___ no _____

(1 set for non-dedicated pump; analytes < 3 x RL)

[FG-ORG, p. 62-65]

Equipment blank results were ND and met QC acceptance criteria.

TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

4.6 List number and level of TICs for each sample analyzed on TIC data sheet.

[FG-ORG, p. 80-83]

Sample ID	Page Number	Number of TICs	Reporting Level*
CAFB-B	II-50	8	T1
CAFB-C	II-45	5	T1
CAFB-D	II-59	4	T1
CAFB-O	III-30	4	T1
CAFB-S	I-18	7	T1

* T1 = tentative identification, T2 = confident identification, and T3 = confirmed identification.

DUPLICATE CONTROL SAMPLES (DCSs)

4.7 Did DCS results meet frequency and QC acceptance criteria? yes ___√___ no _____

(1 DCS per quarter; %R and RPD within 3 SD of historical results of lab performance)

[FG-ORG, p. 71-72]

All DCS results met QC acceptance criteria.

SINGLE CONTROL SAMPLES (SCSs)

4.8 Did SCS results meet frequency and QC acceptance criteria? yes √ no ____

(1 SCS per quarter; %R limits established by laboratory)

[FG-ORG, p. 71-72]

All SCS results met QC acceptance criteria.

LABORATORY METHOD BLANKS

4.9 Did method blank results meet frequency and QC acceptance criteria?yes √ no ____

(1 method blank per batch; analyte concentration ≤ RL except for common lab contaminants ≤ 5 times RL)

[FG-ORG, p. 62-65]

All results were ND and met QC acceptance criteria.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

4.10 Did MS/MSD results meet frequency and QC acceptance criteria? yes √ no ____

(1 set per quarter; method SW8270B:%R and RPD varies)

[FG-ORG, p. 69-70]

All MS/MSD results met QC acceptance criteria.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

4.11 Did initial calibration meet frequency and QC acceptance criteria? yes ____ no ____

[FG-ORG, p. 55-58]

Not reviewed

4.12 Did continuing calibrations meet frequency and QC acceptance criteria? yes ____ no ____

[FG-ORG, p. 59-61]

Not reviewed

GC/MS TUNING

4.13 Did BFB tuning results meet frequency and QC acceptance criteria? yes ____ no ____

[FG-ORG, p. 51-54]

Not reviewed

INTERNAL STANDARDS (IS)

4.14 Did IS results meet frequency and QC acceptance criteria? yes _____ no _____

(all blanks, standards, and samples; IS area limits within 50 to 200%)
[FG-ORG, p. 74-75]

Not reviewed

SAMPLE RESULT VERIFICATION

4.15 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? yes _____ no _____

Not reviewed

LEVEL I and II -- Data Validation

ANALYTE RESULTS WITH DATA QUALIFIERS

4.16 Summarize analyte results with data qualifiers. List pertinent information on qualified-data worksheet: _____

4.17 Additional comments: _____

SECTION 5.0: APPENDIX-IX, PESTICIDES AND PCB'S-- METHOD SW3520/SW8081A AND 8082

Name of reviewer(s) and review date: Fredrick E. Gebhardt 22OCT2001

LEVEL I AND II -- Data Validation

HOLDING TIMES

5.1 Were project-required analytical holding times met? yes √ no ____

(7-day limit from sample date to extraction date and 40-day limit from extraction date to analysis date)
[FG-ORG, p. 49-50]

sample date: 20-22MAR2001 extraction date limit: 27-29MAR2001
extraction date: 22-26MAR2001 analysis date limit: 26-28MAR2001

Samples were extracted and were analyzed by required holding time limits.

SURROGATE SPIKE RECOVERY

5.2 Did surrogate spike results meet frequency and QC acceptance criteria? yes √ no ____

(frequency: all samples and blanks: SW8080A:%R varies)
[FG-ORG, p. 66-68]

All surrogate spike recovery results met QC acceptance criteria.

PROJECT REPORTING LIMIT

5.3 Did sample results meet project reporting limits? yes √ no ____

PRL's were not provided in SAP.

FIELD DUPLICATES

5.4 Did field duplicate results meet frequency and QC acceptance criteria?yes __√__ no _____

(1 set per sampling period; RPD ≤ 30%)

Field duplicate results met QC acceptance criteria.

EQUIPMENT BLANKS

5.5 Did equipment blank results meet frequency and QC acceptance criteria? yes ____ no _____

(1 set for non-dedicated pump; target compound concentration ≤ RL)

[FG-ORG, p. 62-65]

N/A

DUPLICATE CONTROL SAMPLES (DCSs)

5.6 Did DCS results meet frequency and QC acceptance criteria? yes __√__ no _____

(1 DCS per quarter; %R and RPD within 3 SD of historical results of lab performance)

[FG-ORG, p. 71-72]

All DCS results met QC acceptance criteria.

SINGLE CONTROL SAMPLES (SCSs)

5.7 Did SCS results meet frequency and QC acceptance criteria? yes __√__ no _____

(1 SCS per quarter; %R limits established by laboratory)

[FG-ORG, p. 71-72]

SCS results met QC acceptance criteria.

LABORATORY METHOD BLANKS

5.8 Did method blank results meet frequency and QC acceptance criteria?yes __√__ no _____

(1 method blank per batch; concentration ≤ 2 times RL)

[FG-ORG, p. 62-65]

All method blank results were ND and met QC acceptance criteria.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

5.9 Did MS/MSD results meet frequency and QC acceptance criteria? yes √ no ____

(1 set per quarter; %R and RPD limits varies)

[FG-ORG, p. 69-70]

All MS/MSD results met QC acceptance criteria.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

5.10 Did initial and continuing calibrations meet frequency and QC criteria?yes ____ no ____

[FG-ORG, p. 55-58]

Not reviewed

SAMPLE RESULT VERIFICATION

5.11 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? yes ____ no ____

Not reviewed

5.12 Additional comments: ____

SECTION 6.0: APPENDIX-IX, HERBICIDES-- METHOD SW846/SW8151A

Name of reviewer(s) and review date: Fredrick E. Gebhardt 22OCT2001

LEVEL I AND II -- Data Validation

HOLDING TIMES

6.1 Were project-required analytical holding times met? yes √ no ____

(7-day limit from sample date to extraction date and 40-day limit from extraction date to analysis date)

[FG-ORG, p. 49-50]

sample date: 20-22MAR2001 extraction date limit: 27-29MAR2001

extraction date: 22-28MAR2001 analysis date limit: 2APR2001

All samples were extracted and were analyzed by required holding time limits.

SURROGATE SPIKE RECOVERY

6.2 Did surrogate spike results meet frequency and QC acceptance criteria? yes √ no ____

(frequency: all samples and blanks: SW8150:%R varies)

[FG-ORG, p. 66-68]

Surrogate spike recovery results were within QC acceptance criteria.

PROJECT REPORTING LIMIT

6.3 Did sample results meet project reporting limits? yes √ no ____

PRL's were not provided in SAP.

FIELD DUPLICATES

6.4 Did field duplicate results meet frequency and QC acceptance criteria?yes __√__ no _____

(1 set per sampling period; RPD ≤ 30%)

Field duplicate results met QC acceptance criteria.

EQUIPMENT BLANKS

6.5 Did equipment blank results meet frequency and QC acceptance criteria? yes ____ no _____

(1 set for non-dedicated pump; target compound concentration ≤ RL)

[FG-ORG, p. 62-65]

N/A

DUPLICATE CONTROL SAMPLES (DCSs)

6.6 Did DCS results meet frequency and QC acceptance criteria? yes __√__ no _____

(1 DCS per quarter; %R and RPD within 3 SD of historical results of lab performance)

[FG-ORG, p. 71-72]

DCS results met QC acceptance criteria.

SINGLE CONTROL SAMPLES (SCSs)

6.7 Did SCS results meet frequency and QC acceptance criteria? yes __√__ no _____

(1 SCS per quarter; %R limits established by laboratory)

[FG-ORG, p. 71-72]

SCS results met QC acceptance criteria.

LABORATORY METHOD BLANKS

6.8 Did method blank results meet frequency and QC acceptance criteria?yes __√__ no _____

(1 method blank per batch; concentration ≤ 2 times RL)

[FG-ORG, p. 62-65]

All method blank results were ND and met QC acceptance criteria.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

6.9 Did MS/MSD results meet frequency and QC acceptance criteria? yes √ no ____

(1 set per quarter; %R and RPD limits varies)

[FG-ORG, p. 69-70]

MS/MSD results met QC acceptance criteria.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

6.10 Did initial and continuing calibrations meet frequency and QC criteria?yes ____ no ____

[FG-ORG, p. 55-58]

Not reviewed

SAMPLE RESULT VERIFICATION

6.11 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? yes ____ no ____

Not reviewed

6.12 Additional comments: ____

SECTION 7.0: APPENDIX-IX, DIOXINS AND FURANS-- METHOD SW3520/SW8280

Name of reviewer(s) and review date: Fredrick E. Gebhardt 22OCT2001

LEVEL I AND II -- Data Validation

HOLDING TIMES

7.1 Were project-required analytical holding times met? yes √ no ____

(30-day limit from sample date to extraction date and 45-day limit from extraction date to analysis date for method SW8280)

[FG-ORG, p. 49-50]

sample date: 20-22MAR2001 extraction date limit: 19-21APR2001

extraction date: 27MAR2001 analysis date limit: 29MAR2001

Samples were extracted and were analyzed by required extraction and analysis holding time limits.

SURROGATE SPIKE RECOVERY

7.2 Did surrogate spike results meet frequency and QC acceptance criteria? yes √ no ____

(frequency: all samples and blanks: SW8280:%R varies)

[FG-ORG, p. 66-68]

All surrogate spike recovery results met QC acceptance criteria.

PROJECT REPORTING LIMIT

7.3 Did sample results meet project reporting limits? yes √ no ____

PRL's were not provided in SAP. Reporting limits were not raised for any of the samples.

FIELD DUPLICATES

7.4 Did field duplicate results meet frequency and QC acceptance criteria?yes __√__ no _____

(1 set per sampling period; RPD ≤ 30%)

Field duplicate results met QC acceptance criteria.

EQUIPMENT BLANKS

7.5 Did equipment blank results meet frequency and QC acceptance criteria? yes ____ no _____

(1 set for non-dedicated pump; target compound concentration ≤ RL)

[FG-ORG, p. 62-65]

N/A

DUPLICATE CONTROL SAMPLES (DCSs)

7.6 Did DCS results meet frequency and QC acceptance criteria? yes __√__ no _____

(1 DCS per quarter; %R and RPD within 3 SD of historical results of lab performance)

[FG-ORG, p. 71-72]

DCS results met QC acceptance criteria.

LABORATORY METHOD BLANKS

7.7 Did method blank results meet frequency and QC acceptance criteria?yes __√__ no _____

(1 method blank per batch; concentration ≤ 2 times RL)

[FG-ORG, p. 62-65]

All method blank results were ND and met QC acceptance criteria.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

7.8 Did MS/MSD results meet frequency and QC acceptance criteria? yes __√__ no _____

(1 set per quarter; %R and RPD limits varies)

[FG-ORG, p. 69-70]

MS/MSD results met QC acceptance criteria.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

7.9 Did initial and continuing calibrations meet frequency and QC criteria? yes _____ no _____

[FG-ORG, p. 55-58]

Not reviewed

SAMPLE RESULT VERIFICATION

7.10 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? yes _____ no _____

Not reviewed

7.11 Additional comments: _____

SECTION 8.0: APPENDIX-IX, POLYNUCLEAR AROMATIC HYDROCARBONS (PAH)--METHOD SW846/SW8310

Name of reviewer(s) and review date: Fredrick E. Gebhardt 22OCT2001

LEVEL I AND II -- Data Validation

HOLDING TIMES

8.1 Were project-required analytical holding times met? yes √ no ____

(7-day limit from sample date to extraction date and 40-day limit from extraction date to analysis date for method SW8310)
[FG-ORG, p. 49-50]

sample date: 20-22MAR2001 extraction date limit: 27-29MAR2001
extraction date: 27MAR2001 analysis date limit: 2APR2001

Samples were extracted and were analyzed by required extraction and analysis holding time limits.

SURROGATE SPIKE RECOVERY

8.2 Did surrogate spike results meet frequency and QC acceptance criteria? yes √ no ____

(frequency: all samples and blanks: SW8310:%R varies)
[FG-ORG, p. 66-68]

All surrogate spike recovery results met QC acceptance criteria.

PROJECT REPORTING LIMIT

8.3 Did sample results meet project reporting limits? yes √ no ____

PRL's were not provided in SAP.

FIELD DUPLICATES

8.4 Did field duplicate results meet frequency and QC acceptance criteria?yes __√__ no _____

(1 set per sampling period; RPD ≤ 30%)

Field duplicate results met QC acceptance criteria.

EQUIPMENT BLANKS

8.5 Did equipment blank results meet frequency and QC acceptance criteria? yes ____ no _____

(1 set for non-dedicated pump; target compound concentration ≤ RL)

[FG-ORG, p. 62-65]

N/A

DUPLICATE CONTROL SAMPLES (DCSs)

8.6 Did DCS results meet frequency and QC acceptance criteria? yes __√__ no _____

(1 DCS per quarter; %R and RPD within 3 SD of historical results of lab performance)

[FG-ORG, p. 71-72]

All DCS results met QC acceptance criteria.

SINGLE CONTROL SAMPLES (SCSs)

8.7 Did SCS results meet frequency and QC acceptance criteria? yes __√__ no _____

(1 SCS per quarter; %R limits established by laboratory)

[FG-ORG, p. 71-72]

SCS results met QC acceptance criteria.

LABORATORY METHOD BLANKS

8.8 Did method blank results meet frequency and QC acceptance criteria?yes __√__ no _____

(1 method blank per batch; concentration ≤ 2 times RL)

[FG-ORG, p. 62-65]

All method blank results were ND and met QC acceptance criteria.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

8.9 Did MS/MSD results meet frequency and QC acceptance criteria? yes ___√___ no _____

(1 set per quarter; %R and RPD limits varies)

[FG-ORG, p. 69-70]

MS/MSD results met QC acceptance criteria.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

8.10 Did initial and continuing calibrations meet frequency and QC criteria?yes _____ no _____

[FG-ORG, p. 55-58]

Not reviewed

SAMPLE RESULT VERIFICATION

8.11 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? yes _____ no _____

Not reviewed

8.12 Additional comments: _____

SECTION 9.0: APPENDIX-IX, METALS (TOTAL)-- METHODS SW846/SW6010B (ALUMINUM, BARIUM, BERYLLIUM, CALCIUM, COBALT, COPPER, IRON, MAGNESIUM, MANGANESE, MOLYBDENUM, NICKEL, POTASSIUM, SODIUM, TIN, VANADIUM, AND ZINC), SW846/SW6020 (ANTIMONY, ARSENIC, CADMIUM, CHROMIUM, LEAD, SELENIUM, SILVER, AND THALLIUM), AND SW846/SW7470A (MERCURY).

Name of reviewer(s) and review date: Fredrick E. Gebhardt 22OCT2001

LEVEL I AND II -- Data Validation

HOLDING TIMES

9.1 Were project-required analytical holding times met? yes √ no ____

(180-day limit from sample date to analysis, except mercury-28 days)

[FG-INORG, p. 6-7]

Mercury sample date: 20-22MAR2001 analysis date limit: 19-21APR2001

All rest sample date: 20-22MAR2001 analysis date limit: 17-19SEP2001

Mercury samples and all the rest of metals met required holding time limits.

PROJECT REPORTING LIMIT (PRL)

9.2 Did sample results meet project reporting limits? yes √ no ____

PRL's were not provided in SAP. Severn Trent reporting limits were not raised for any of the samples.

FIELD DUPLICATES

9.3 Did field duplicate results meet frequency and QC acceptance criteria? yes √ no ____

(1 set for each sampling period; RPD < 30 %)

[FG-INORG, p. 35]

Field duplicate samples met QC acceptance criteria.

EQUIPMENT BLANKS

9.4 Did equipment blank results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set for non-dedicated pump; analytes < 3 x RL)

[FG-INORG, p. 16-18]

N/A

DUPLICATE CONTROL SAMPLES (DCSs)

9.5 Did DCS results meet frequency and QC acceptance criteria? yes √ no ____

(1 DCS per quarter; % R and RPD within 3 SD of historical results of lab performance)

[FG-INORG, p. 25-26]

All DCS results met QC acceptance criteria.

LABORATORY METHOD BLANKS

9.6 Did method blank results meet frequency and QC acceptance criteria? yes √ no ____

(1 method blank per batch; analyte concentration ≤ RL except for common lab contaminants ≤ 2 times RL)

[FG-INORG, p. 16-18]

All method blank results were ND or below reporting limit and met QC acceptance criteria.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

9.7 Did MS/MSD results meet frequency and QC acceptance criteria? yes √ no ____

(1 set per quarter; %R and RPD varies)

[FG-INORG, p. 27-29]

The MS/MSD sample results met QC acceptance criteria.

LEVEL II -- Data Validation

CALIBRATION

9.8 Did initial (ICV) and continuing (CCV) calibrations meet QC acceptance criteria? **[FG-INORG, p.** 8-15] yes _____ no _____

Not reviewed.

INTERELEMENT CHECK SAMPLES (method SW6010 only)

9.9 Did interelement check results meet frequency and QC criteria? yes _____ no _____

(within 20% of known value)
[FG-INORG, p. 19-21]

Not reviewed.

ANALYTICAL SPIKE RECOVERY (all methods except SW6010 and mercury)

9.10 Did analytical spike results meet frequency and QC acceptance criteria? yes _____ no _____

(every sample; %R within 80-120% except when sample results are ND, the %R within 40-120%)the %R within 40-120%)
[FG-INORG, p. 27-29]

Not reviewed.

SAMPLE RESULT VERIFICATION

9.11 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? **[FG-INORG, p. 36]** yes _____ no _____

Not reviewed.

LEVEL I AND II -- Data Validation

ANALYTE RESULTS WITH DATA QUALIFIERS

9.12 Summarize analyte results with data qualifiers. List pertinent information on qualified-data worksheet: _____

9.13 Additional comments: None.

SECTION 10.0: CYANIDE--METHOD SW9012A AND SULFIDE--METHOD 9030B/9034

Name of reviewer(s) and review date: Fredrick E. Gebhardt 22OCT2001

LEVEL I AND II -- Data Validation

HOLDING TIMES

10.1 Were project-required analytical holding times met? yes √ no ____

(Cyanide: 14-day limit from sample date to analysis date for water samples)
(Sulfide: 7-day limit from sample date to analysis date for water samples)
[FG-INORG, p. 6-7]

Cyanide sample date: 20-22MAR2001 analysis date limit: 29MAR-3APR2001
Sulfide sample date: 20-22MAR2001 analysis date limit: 22-29MAR2001

Cyanide and sulfide samples were analysized by required holding time limits.

PROJECT REPORTING LIMIT

10.2 Did sample results meet project reporting limits? yes √ no ____

(Quanterra RL for: Cyanide 0.01 mg/L, Sulfide 0.05 mg/L)

PRL's were not provided in SAP.

FIELD DUPLICATES

10.3 Did field duplicate results meet frequency and QC acceptance criteria? yes √ no ____

(1 set per each sampling period; RPD ≤ 30%)
[FG-INORG, p. 35]

Field duplicate results met QC acceptance criteria.

EQUIPMENT BLANKS

10.4 Did equipment blank results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set for non-dedicated pump; target compound concentration ≤ 3 times RL)
[FG-INORG, p. 16-18]

DUPLICATE CONTROL SAMPLES (DCSs)

10.5 Did DCS results meet frequency and QC acceptance criteria? yes √ no ____

(1 DCS per batch; %R and RPD within 3 SD of historical results of lab performance)

[FG-INORG, p. 25-26]

All DCS results met QC acceptance criteria.

LABORATORY METHOD BLANKS

10.6 Did method blank results meet frequency and QC acceptance criteria?yes √ no ____

(1 method blank per batch; concentration ≤ 2 times RL)

[FG-INORG, p. 16-18]

Laboratory method blank results for both cyanide and sulfide were ND and met QC acceptance criteria.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

10.7 Did MS/MSD results meet frequency and QC acceptance criteria? yes √ no ____

(1 set per quarter; %R and RPD varies)

[FG-INORG, p. 27-29]

MS/MSD results met QC acceptance criteria for cyanide and sulfide.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

10.8 Did initial and continuing calibrations meet frequency and QC criteria?yes ____ no ____

(%R within 90-110%)

[FG-INORG, p. 8-15]

Not reviewed

SAMPLE RESULT VERIFICATION

10.9 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? **[FG-INORG, p. 36]** yes ____ no ____

Not reviewed

10.10 Additional comments: ____

SECTION 11.0: TOTAL ORGANIC CARBON (TOC)-- METHOD SW9060

Name of reviewer(s) and review date: Fredrick E. Gebhardt 22OCT2001

LEVEL I AND II -- Data Validation

HOLDING TIMES

11.1 Were project-required analytical holding times met? yes √ no ____

(28-day limit from sample date to analysis date for water samples)

[FG-ORG, p. 6-8]

sample date: 20-22MAR2001 analysis date limit: 16APR2001

Samples were analyzed by required holding times.

PROJECT REPORTING LIMIT (PRL)

11.2 Did sample results meet project reporting limits? yes √ no ____

(Quanterra RL: 1.0 mg/L)

PRL was not provided in SAP.

FIELD DUPLICATES

11.3 Did field duplicate results meet frequency and QC acceptance criteria? yes √ no ____

(1 set per each sampling period; RPD <30 %)

Field duplicate results were within acceptance criteria.

EQUIPMENT BLANKS

11.4 Did equipment blank results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set for non-dedicated pump; target compound concentration ≤ RL)

[FG-ORG, p. 20-25]

DUPLICATE CONTROL SAMPLES (DCSs)

11.5 Did DCS results meet frequency and QC acceptance criteria? yes √ no ____

(1 DCS per batch; %R and RPD within 3 SD of historical results of Lab performance)

[FG-ORG, p. 32-33]

DCS results met QC acceptance criteria.

LABORATORY METHOD BLANK

11.6 Did method blank results meet frequency and QC acceptance criteria? yes √ no ____

(1 method blank per batch)

[FG-ORG, p. 20-25]

Method blank result was ND and met QC acceptance criteria.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

11.7 Did MS/MSD results meet frequency and QC acceptance criteria? yes √ no ____

(1 set per quarter)

[FG-ORG, p. 30-31]

MS/MSD results met QC acceptance criteria.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

11.8 Did initial and continuing calibrations meet frequency and QC criteria? yes ____ no ____

[FG-ORG, p. 12-16]

Not reviewed.

SAMPLE RESULT VERIFICATION

11.9 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? yes ____ no ____

Not reviewed.

11.10 Additional comments: None.

SECTION 12.0: TOTAL ORGANIC HALOGENS (TOX) METHOD SW9020B

Name of reviewer(s) and review date: Fredrick E. Gebhardt 22JUN2000

LEVEL I AND II -- Data Validation

HOLDING TIMES

12.1 Were project-required analytical holding times met? yes √ no ____

(28-day limit from sample date to analysis date for water samples)

[FG-ORG, p. 6-8]

sample date: 29FEB-1MAR2000 analysis date limit: 28, 29MAR2000

Samples were analyzed by 22MAR2000 and met required holding times.

PROJECT REPORTING LIMIT

12.2 Did sample results meet project reporting limits? yes √ no ____

(Quanterra RL: 30 µg/L)

PRL was not provided in SAP.

FIELD DUPLICATES

12.3 Did field duplicate results meet frequency and QC acceptance criteria? yes √ no ____

(1 set per each sampling period; RPD ≤ 30 %)

Field duplicate results met QC acceptance criteria.

EQUIPMENT BLANKS

12.4 Did equipment blank results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set for non-dedicated pump; target compound concentration ≤ RL)

[FG-ORG, p. 20-25]

N/A

DUPLICATE CONTROL SAMPLES (DCSs)

12.5 Did DCS results meet frequency and QC acceptance criteria? yes √ no ____

(1 DCS per batch; %R within 80 to 120% and RPD < 20%)

[FG-ORG, p. 32-33]

DCS results met QC acceptance criteria.

LABORATORY METHOD BLANKS

12.6 Did method blank results meet frequency and QC acceptance criteria? yes √ no ____

(1 method blank per quarter)

[FG-ORG, p. 20-25]

Laboratory method blank result met QC acceptance criteria.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

12.7 Did MS/MSD results meet frequency and QC acceptance criteria? yes √ no ____

(1 set per quarter; %R within 80 to 120 %; RPD < 20 %)

[FG-ORG, p. 30-31]

MS/MSD results met QC acceptance criteria.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

12.8 Did initial and continuing calibrations meet frequency and QC criteria? yes ____ no ____

[FG-ORG, p. 12-16]

Not reviewed.

SAMPLE RESULT VERIFICATION

12.9 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? yes ____ no ____

Not reviewed.

12.10 Additional comments: ____

SECTION 13.0: SULFATE--METHOD MCAWW300.0A

Name of reviewer(s) and review date: Fredrick E. Gebhardt 22OCT2001

LEVEL I AND II -- Data Validation

HOLDING TIMES

6.1 Were project-required analytical holding times met? yes √ no ____

(28-day limit from sample date to analysis date for water samples)
[FG-INORG, p. 6-7]

sample date: 22MAR2001 analysis date limit: 19APR2001

All samples were analyzed by required holding times.

PROJECT REPORTING LIMIT

6.2 Did sample results meet project reporting limits? yes √ no ____

PRL's were not provided in SAP.

FIELD DUPLICATES

6.3 Did field duplicate results meet frequency and QC acceptance criteria? yes √ no ____

(1 set per each sampling period; RPD < 30%)
[FG-INORG, p. 35]

Field duplicate samples met frequency and QC acceptance criteria.

EQUIPMENT BLANKS

6.4 Did equipment blank results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set for non-dedicated pump; target compound concentration ≤ 3 times RL)
[FG-INORG, p. 16-18]

N/A

DUPLICATE CONTROL SAMPLES (DCSs)

6.5 Did DCS results meet frequency and QC acceptance criteria? yes √ no ____

(1 DCS per batch; %R and RPD within 3 SD of historical results of lab performance)

[FG-INORG, p. 25-26]

All DCS results met QC acceptance criteria.

LABORATORY METHOD BLANKS

6.6 Did method blank results meet frequency and QC acceptance criteria? yes √ no ____

(1 method blank per batch; concentration ≤ 2 times RL)

[FG-INORG, p. 16-18]

Laboratory method blank result was ND and met QC acceptance criteria

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

6.7 Did MS/MSD results meet frequency and QC acceptance criteria? yes ____ no √

(1 set per quarter; %R and RPD varies)

[FG-INORG, p. 27-29]

Estimated results for spiked analyte recovery was outside stated control limits.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

6.8 Did initial and continuing calibrations meet frequency and QC criteria? yes ____ no ____

(%R within 90-110%)

[FG-INORG, p. 8-15]

Not reviewed

SAMPLE RESULT VERIFICATION

6.9 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? **[FG-INORG, p. 36]** yes ____ no ____

Not reviewed

6.10 Additional comments: ____

SECTION 14.0: NITRATE AND NITRITE--METHOD MCAWW353.2/354.1

Name of reviewer(s) and review date: Fredrick E. Gebhardt 22OCT2001

LEVEL I AND II -- Data Validation

HOLDING TIMES

7.1 Were project-required analytical holding times met? yes √ no ____

(48-hour limit from sample date to analysis date for Nitrite -MCAWW354.1)
(28-day limit from sample date to analysis date for Nitrate -MCAWW353.2)

[FG-INORG, p. 6-7]

Nitrite sample date: 22MAR2001 analysis date limit: 24MAR2001
Nitrate sample date: 22MAR2001 analysis date limit: 19APR2001

Nitrite and nitrate samples were analyzed by required holding times.

PROJECT REPORTING LIMIT

7.2 Did sample results meet project reporting limits? yes √ no ____

The reporting limits were not raised for any of the samples and met project reporting limits.

FIELD DUPLICATES

7.3 Did field duplicate results meet frequency and QC acceptance criteria? yes √ no ____

(1 set per each sampling period; RPD < 30%)

[FG-INORG, p. 35]

Field duplicate samples met frequency and QC acceptance criteria.

EQUIPMENT BLANKS

7.4 Did equipment blank results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set for non-dedicated pump; target compound concentration < 3 times RL)

[FG-INORG, p. 16-18]

N/A

DUPLICATE CONTROL SAMPLES (DCSs)

7.5 Did DCS results meet frequency and QC acceptance criteria? yes √ no ____

(1 DCS per batch; %R and RPD within 3 SD of historical results of lab performance)

[FG-INORG, p. 25-26]

All DCS results met QC acceptance criteria.

LABORATORY METHOD BLANKS

7.6 Did method blank results meet frequency and QC acceptance criteria? yes √ no ____

(1 method blank per batch; concentration ≤ 2 times RL)

[FG-INORG, p. 16-18]

Laboratory method blank results were ND and met QC acceptance criteria.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

7.7 Did MS/MSD results meet frequency and QC acceptance criteria? yes √ no ____

(1 set per quarter; %R and RPD varies)

[FG-INORG, p. 27-29]

MS/MSD results met QC acceptance criteria.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

7.8 Did initial and continuing calibrations meet frequency and QC criteria? yes ____ no ____

(%R within 90-110%)

[FG-INORG, p. 8-15]

Not reviewed

SAMPLE RESULT VERIFICATION

7.9 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? **[FG-INORG, p. 36]** yes ____ no ____

Not reviewed

7.10 Additional comments: None.

SECTION 15.0: SULFIDE--METHOD SW9030B/9034

Name of reviewer(s) and review date: Fredrick E. Gebhardt 22OCT2001

LEVEL I AND II -- Data Validation

HOLDING TIMES

8.1 Were project-required analytical holding times met? yes √ no ____

(7-day limit from sample date to analysis date for water samples)
[FG-INORG, p. 6-7]

sample date: 22MAR2001 analysis date limit: 29MAR2001

All samples were analyzed by required holding times.

PROJECT REPORTING LIMIT

8.2 Did sample results meet project reporting limits? yes √ no ____
(Quanterra RL: 0.05 mg/L)

PRL's were not provided in SAP. Reporting limits were not raised for any of the samples.

FIELD DUPLICATES

8.3 Did field duplicate results meet frequency and QC acceptance criteria? yes √ no ____
(1 set per each sampling period; RPD ≤ 30%)
[FG-INORG, p. 35]

Field duplicate sample met frequency and QC acceptance criteria.

EQUIPMENT BLANKS

8.4 Did equipment blank results meet frequency and QC acceptance criteria? yes ____ no ____
(1 set for non-dedicated pump; target compound concentration ≤ 3 times RL)
[FG-INORG, p. 16-18]

N/A

DUPLICATE CONTROL SAMPLES (DCSs)

8.5 Did DCS results meet frequency and QC acceptance criteria? yes √ no _____

(1 DCS per batch; %R and RPD within 3 SD of historical results of lab performance)

[FG-INORG, p. 25-26]

All DCS results met QC acceptance criteria.

LABORATORY METHOD BLANKS

8.6 Did method blank results meet frequency and QC acceptance criteria? yes √ no _____

(1 method blank per batch; concentration ≤ 2 times RL)

[FG-INORG, p. 16-18]

Laboratory method blank result was ND and met QC acceptance criteria.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

8.7 Did MS/MSD results meet frequency and QC acceptance criteria? yes √ no _____

(1 set per quarter; %R and RPD varies)

[FG-INORG, p. 27-29]

MS/MSD results met QC acceptance criteria.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

8.8 Did initial and continuing calibrations meet frequency and QC criteria? yes _____ no _____

(%R within 90-110%)

[FG-INORG, p. 8-15]

Not reviewed

SAMPLE RESULT VERIFICATION

8.9 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? **[FG-INORG, p. 36]** yes _____ no _____

Not reviewed

8.10 Additional comments: None.

SECTION 16.0: TOTAL DISSOLVED SOLIDS (TDS)-- METHOD MCAWW160.1

Name of reviewer(s) and review date: Fredrick E. Gebhardt 22OCT2001

LEVEL I AND II -- Data Validation

HOLDING TIMES

9.1 Were project-required analytical holding times met? yes √ no ____

(7-day limit from sample date to analysis date for water samples)

[FG-INORG, p. 6-7]

sample date: 22MAR2001 analysis date limit: 29MAR2001

Samples were analyzed by required holding times.

PROJECT REPORTING LIMIT (PRL)

9.2 Did sample results meet project reporting limits? yes √ no ____

(Quanterra RL: 10 mg/L)

PRL was not provided in SAP.

FIELD DUPLICATES

9.3 Did field duplicate results meet frequency and QC acceptance criteria? yes √ no ____

(1 set per each sampling period; RPD <30 %)

[FG-INORG, p. 35]

Field duplicate sample met frequency and QC acceptance criteria.

EQUIPMENT BLANKS

9.4 Did equipment blank results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set for non-dedicated pump; target compound concentration ≤ 3XRL)

[FG-INORG, p. 16-18]

N/A

DUPLICATE CONTROL SAMPLES (DCSs)

9.5 Did DCS results meet frequency and QC acceptance criteria? yes √ no ____

(1 DCS per batch; %R 86-106% and RPD ≤ 10 %)

[FG-INORG, p. 25-26]

All DCS results were within acceptance criteria.

LABORATORY METHOD BLANK

9.6 Did method blank results meet frequency and QC acceptance criteria? yes √ no ____

(1 method blank per batch; concentration ≤ 2 X RL)

[FG-INORG, p. 16-18]

Laboratory method blank result was ND and met QC acceptance criteria.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

9.7 Did MS/MSD results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set per quarter; %R 86-106% and RPD ≤ 10%)

[FG-INORG, p. 27-29]

MS/MSD results were not reported.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

9.8 Did initial and continuing calibrations meet frequency and QC criteria? yes ____ no ____

(%R within 90-110%)

[FG-INORG, p. 8-15]

Not reviewed.

SAMPLE RESULT VERIFICATION

9.9 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? **[FG-INORG, p. 36]** yes ____ no ____

Not reviewed.

9.10 Additional comments: None.

Appendix A -- Laboratory Data Validation Checklist

Instruction Notes for the Data Validation Checklist

This data validation checklist will be used when validating the chemical analytical results. Data validation is a systematic and independent verification of data quality and consists of checking, verifying, evaluating, and qualifying the chemical analytical results.

Two different levels of data validation are used with level I being not as detailed or as rigorous as level II. Level I data validation includes: (1) checking holding times limits, (2) evaluating the results of field and laboratory quality-control (QC) samples such as field replicates, matrix spikes, surrogate samples, and duplicate control samples, and (3) checking that contamination during sample processing has not occurred in QC blanks such as equipment, method, ambient, and trip blanks. Most of the information and data used to conduct a level I data validation is contained in the summary-data reports prepared by the reporting laboratory. Level II data validation includes all the level I guidelines plus using the raw-data reports prepared by the reporting laboratory to: (1) check that the laboratory instruments have been properly tuned and calibrated, and (2) verify that selected sample results do not have any omissions, problems, discrepancies, transcription errors, and reduction (dilution, conversion) errors.

Field samples (environmental and QC) are processed and analyzed by the reporting laboratory in specific groups of samples called sample projects (also called sample cases). A sample project usually consists of 20 or fewer samples that are collected from one or more sampling locations (monitoring well) in a given sampling period. Numerous laboratory QC samples also are analyzed with the field samples for each sample project.

This data validation checklist is designed to be used when validating the analytical results for a given sample project and it has a multi-level organization. The first part of the checklist contains general information (section 1.0) about the scope (who, when, how, and what) of the data validation and data reports and completeness (section 2.0) for each sample project. Sections 1.0 and 2.0 will be completed and included with all data validation checklists. The data validation checklist also contains numerous supplemental sections which are listed at the bottom of the first page of this document. These supplemental checklist sections are used for specific analytical methods and will be marked with a checkmark (√) when they are completed for a given sample project. Specific project-required frequency and QC acceptance criteria, and pertinent reference page numbers are listed with most of the checklist items. The major data-validation references are the USEPA guidance documents (USEPA 1994).

Checklist Abbreviations, Acronyms, and Notes

Abbreviations:

Al	aluminum
Ag	silver
As	arsenic
CAP	Chromic Acid Pit
CCV	continuing calibration verification
Cr	chromium
DCS	duplicate control sample
Ba	barium
Be	beryllium
Ca	calcium
Cd	cadmium
Cl	chloride
Co	cobalt
Conc.	concentration
Cu	copper
Diss.	dissolved
DRO	diesel range organics with GC/FID analysis C10-C28
DU	duplicate environmental sample
EB	equipment blank
Fe	iron
FG-INORG	Functional guidelines (EPA) for evaluating inorganic analyses
FG-ORG	Functional guidelines (EPA) for evaluating organic analyses
Fl	fluoride
GFAA	graphite furnace atomic absorption
Hg	mercury
ICP	inductively coupled plasma
ID	identification
IS	internal standards
J	estimated value qualifier
K	potassium
LCS	Laboratory control sample
MCAWW	"Methods for Chemical Analysis of Water and Wastes"', EPA-600/4-79-020, March 1983 subsequent revisions.
Mg	magnesium
mg/L	milligrams per liter
Mn	manganese
Mo	molybdenum

Checklist Abbreviations, Acronyms, and Notes -- *continued*

Abbreviations:

MS/MSD	matrix spike/matrix spike duplicate
MW	monitoring well
Na	sodium
Ni	nickel
NO_2	nitrate
NO_3	nitrite
PAC	Chromic Acid Pit duplicate sample identification
Pb	lead
PO_4	orthophosphate
PRL	project reporting limit
QC	quality control
RCLs	Recovery Control Limits
RL	reporting limits
RMAL	Rocky Mountain Analytical Laboratory
RPD	relative percent difference
SA	environmental sample
SAP	Sampling and Analysis Plan
Sb	antimony
SCS	single control sample
Se	selenium
Sn	tin
SO_4	sulfate
SVOC	semivolatile organic compounds
TB	trip blank
TDS	total dissolved solids
TIC	tentatively identified compound
Tl	thallium
TOC	total organic carbon
Tot.	total
TOX	total organic halogen
TPH	total petroleum hydrocarbons
TSS	total suspended solids
USEPA	United States Environmental Protection Agency
USGS/WRD	United States Geological Survey, Water Resources Division
V	vanadium
VOC	volatile organic compounds

Checklist Abbreviations, Acronyms, and Notes -- *continued*

Abbreviations:

Zn	zinc
µg/L	microgram per liter
<	less than
>	greater than
%	percent
%R	percent recovery

USEPA, 1994, USEPA Contract laboratory program national functional guidelines for organic data review, February, 1994, Publication 9240.1-05, Document number PB94-963501, 124 p.

NOTE: this reference is abbreviated FG-ORG in this checklist.

USEPA, 1994, USEPA contract laboratory program national functional guidelines for inorganic data review, February, 1994, Publication 9240.1-05-01, Document number PB94-963502, 42 p.

NOTE: this reference is abbreviated FG-INORG in this checklist.

USGS, 1992, Laboratory data validation checklist: Wyoming District, U.S. Geological Survey checklist prepared for the U.S. Air Force, multiple pages.

COPY FOR YOUR
INFORMATION

CONTRACT LABORATORY DATA-REVIEW WORKSHEET

1.0 GENERAL INFORMATION Laboratory Lot Number: DIC210269

Data reviewer: Richard Daddow Review date: 4/26/01

District, Project, & Account #: NM Cannon AFB 4635-36004

Sample collection date: 3/20/01 Sample matrix/no.: water

No. of sample types in lot: Environmental 1 Trip blank 1 Equip. blank ____

MS/MSD ____ Other: ____

2.0 INVOICE STATUS FOR LOT: OK Invoice copy attached X

3.0 DATA REPORTS and FILES

Date of Lab analytical report: 4/17/01 Number of copies: bound 1 unbound 2

No. of volumes of raw-data report: ____ No. of CD copies of raw-data report: 1

Raw-data report reviewed? Yes ___ No X Electronic data files on CD? Yes X No ____

EDD file format: NWIS X STL standard ____ ERPIMS ____ DODEC ____

Comments—Data Reports ____

4.0 SAMPLE ANALYSES *(Page numbers listed in worksheet refer to lab analytical report)*

4.1 Were accelerated turn-around times (TATs) requested for analyses? Yes ___ No X

If yes, list TAT period and if completed: ____

4.2 Were analyses on chain-of-custody (COC) form performed by lab? YES X NO ____

If **no**, list missing or cancelled analyses and reason for non-performance: ____

4.3 Were the samples properly preserved, labeled, no lab log-in problems, and(or) at appropriate temperature (<6 deg. C) upon receipt by the laboratory: Yes X No ____

If **no**, list sample/lab IDs, and associated problems with when delivered at laboratory:

Laboratory Lot No: DIC210269

4.4 Were preparation (extraction) and(or) analysis holding times met? Yes X No ____

If **no**, list analytical methods and sample/lab IDs for samples that exceeded holding-time limits:

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

If **no**, list methods, surrogates, associated sample/lab IDs, lab report page #s: _____

4.6 Were dilution factors greater than 1 for ***organic*** analyses? Yes ____ No X NA _____

If **yes**, list analytical method, lab/sample IDs, and reason for raised dilution factors: dilution ___

high-analyte levels _____ matrix interferences _____ other _____

4.7 Were dilution factors greater than 1 for **inorganic** analyses? Yes X No ____ NA _____

If **yes**, list analytical method, lab/sample IDs, and reason for raised dilution factors: dilution ___

high-analyte levels _____ matrix interferences _____ other limited sample volume

9020B TOX Sample CAFB-S (-001) (p. 26)

4.8 Additional comments about sample analyses: _____

Laboratory Lot No: DIC210269

5.0 QUALITY CONTROL (QC) ANALYSES and RESULTS

5.1 Did lab control samples (LCS/LSCD) meet percent recoveries (%R) criteria? Yes___ No X

If **no**, list method, analytes, LCS/LCSD, and report page #s:

8270C 1 analyte LCS/LCSD (p. 35)
9030B Sulfide LCS (p. 84)

5.2 Were any target analytes detected in the **Laboratory Method Blanks**? Yes X No___

If **yes**, list method, analytes, report page #s:

6010B - Ca (p. 69) 6020 - Cr, Tl (p. 70-71)
9020B TOX (p. 88)

5.3 Did the **MS/MSD** results meet %R or RPD acceptance criteria? Yes___ No X NA___

Note: matrix spike and matrix spike duplicate (MS/MSD) data are used to evaluate the effect of sample matrix on the analytical process and should be only used in conjunction with other available lab QC data. In some cases, MS samples not directly associated with this lot may be used by the laboratory.

List analytical method and if MS samples are associated with this lot.

If did not meet acceptance criteria also list analytes; MS, MSD or RPD; and lab report page #:

8260B associated MS lot # yes X no___
8310, 8280A, 7470A associated MS lot # yes___ no X
6010B Al MS/MSD (p. 73) associated MS lot # yes___ no X
6020 Sb, Ag MS/MSD (p. 75) associated MS lot # yes___ no X
314 (perchlorate), 9012A, 9020B, 1060 (TOC) associated MS lot # yes___ no X
9030B Sulfide MS/MSD (p. 89) associated MS lot # yes___ no X

No MS results reported for method(s): 8270C, 8081A, 8082, 8151A,

5.4 Additional comments about QC results:

Laboratory Lot No: D1C210269

6.0 ANALYTICAL METHODS USED in this LABORATORY LOT NUMBER

X VOCs by GC/MS--method 8260B *[water (W) or solids (S) analysis holding-time (HT) of 14 days]*

____ Gasoline Range Organics (GRO) + BTEX--method 8015M-GRO *[W and S: analysis HT 14 days]*

____ Diesel Range Organics-method 8015M-DRO *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*

X Pesticides by GC--method 8081A *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*

X PCBs by GC--method 8082 *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

____ Pesticides by GC--method 8141A *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*

X Herbicides by GC--method 8151A *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

X SVOCs by GC/MS--method 8270C *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

X Dioxins and Furans--methods 8280 or 8290 *[W and S: prep HT 30 days; analysis HT 45 days]*

X PAHs by HPLC method 8310 *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

____ Explosives by HPLC method 8330 *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

____ Hexane extractable materials (HEM and SGT-HEM)--method 1664 *[W: analysis HT 28 days]*

X Total organic carbon (TOC)--methods 415.1 or 9060 *[W: analysis HT 28 days]*

____ Dissolved organic carbon (DOC)--methods 415.1 or 9060 *[W: analysis HT 28 days]*

X Total organic halides (TOX)--method 9020 *[W: analysis HT 28 days]*

X Metals by ICP--method 6010B/200.7 Dissolved ____ Total X *[W and S: analysis HT 180 days]*

X Metals by ICP/MS--method 6020/200.8 Dissolved ____ Total X *[W and S: analysis HT 180 days]*

____ Metals by GFAA methods *[W and S: analysis HT 180 days]* Methods:Sb-7041, As-7060, Cd-7131 Cr-7191, Pb-7421, Se-7740, Tl-7841 List GFAA metals: ____

____ Hexavalent chromium--method 7196 *[W: analysis HT **24-48 hours**]*

X Mercury by CVAA--method 7470A (W) and 7471A (S) *[W and S: analysis HT 28 days]*

____ Inorganic anions--method 300 *[W: analysis HT **48 hours**- NO_2, NO_3, ortho-P; HT 28 days--Br,Cl ,F, SO_4]*

____ Total dissolved solids (TDS)--method 160.1 and(or) TSS--method 160.2 *[W: analysis HT 7 days]*

____ Total alkalinity--method 310.1 *[W: analysis HT 14 days]*

____ Nitrogen, ammonia--method 350.1 *[W: analysis HT 28 days]*

____ Nitrogen, TKN--method 351.2 *[W: analysis HT 28 days]*

____ Nitrogen, nitrate + nitrite--method 353.2 *[W: analysis HT 28 days]* NO_3 or NO_2 only *[HT **48 hours**]*

____ Nitrogen, nitrite--method 354.1 *[W: analysis HT **48 hours**]*

____ Total phosphorus--method 365.3 *[W: analysis HT 28 days]*

X Cyanide, total and amenable--methods 9010B or 9012A *[W and S: analysis HT 14 days]*

X Other analyses: 9030B- Sulfides, 314- perchlorate

QC DATA ASSOCIATION SUMMARY

D1C210269

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WG	SW846 9060		1106481	1106180
	WG	SW846 6020		1089265	1089103
	WG	SW846 9020B		1102313	1102126
	WG	SW846 7470A		1081213	1081076
	WG	SW846 8082		1081203	
	WG	SW846 8081A		1081190	
	WG	SW846 8260B		1093348	1093182
	WG	SW846 8270C		1085169	
	WG	SW846 6010B		1088262	1088137
	WG	SW846 9012A		1092472	1092215
	WG	SW846 8151A		1081452	
	WG	SW846 8280A		1086405	1086229
	WG	SW846 8310		1086277	1086128
	WG	SW846 9030B/9034		1081298	1082096
	WG	EPA 314.0		1086178	1086052
002	WQ	SW846 8260B		1093348	1093182

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D1C210269 **Work Order #...:** EACRF1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1D030000-348 EACRF1AD-LCSD
Prep Date.....: 04/02/01 **Analysis Date..:** 04/02/01
Prep Batch #...: 1093348 **Analysis Time..:** 10:51
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**94**	**(79 - 119)**			**SW846 8260B**
	97	**(79 - 119)**	**3.0**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**90**	**(76 - 116)**			**SW846 8260B**
	95	**(76 - 116)**	**5.5**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**93**	**(79 - 119)**			**SW846 8260B**
	94	**(79 - 119)**	**0.66**	**(0-20)**	**SW846 8260B**
Toluene	**95**	**(75 - 122)**			**SW846 8260B**
	100	**(75 - 122)**	**4.9**	**(0-20)**	**SW846 8260B**
Trichloroethene	**96**	**(81 - 121)**			**SW846 8260B**
	100	**(81 - 121)**	**4.3**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(80 - 120)
	88	(80 - 120)
1,2-Dichloroethane-d4	96	(72 - 127)
	94	(72 - 127)
4-Bromofluorobenzene	105	(79 - 119)
	107	(79 - 119)
Toluene-d8	113	(79 - 119)
	112	(79 - 119)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: D1C210269 **Work Order #...:** EACRF1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1D030000-348 EACRF1AD-LCSD
Prep Date.....: 04/02/01 **Analysis Date..:** 04/02/01
Prep Batch #...: 1093348 **Analysis Time..:** 10:51
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	**10.0**	**9.44**	**ug/L**	**94**		**SW846 8260B**
	10.0	**9.74**	**ug/L**	**97**	**3.0**	**SW846 8260B**
Chlorobenzene	**10.0**	**8.99**	**ug/L**	**90**		**SW846 8260B**
	10.0	**9.49**	**ug/L**	**95**	**5.5**	**SW846 8260B**
1,1-Dichloroethene	**10.0**	**9.32**	**ug/L**	**93**		**SW846 8260B**
	10.0	**9.39**	**ug/L**	**94**	**0.66**	**SW846 8260B**
Toluene	**10.0**	**9.53**	**ug/L**	**95**		**SW846 8260B**
	10.0	**10.0**	**ug/L**	**100**	**4.9**	**SW846 8260B**
Trichloroethene	**10.0**	**9.62**	**ug/L**	**96**		**SW846 8260B**
	10.0	**10.0**	**ug/L**	**100**	**4.3**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(80 - 120)
	88	(80 - 120)
1,2-Dichloroethane-d4	96	(72 - 127)
	94	(72 - 127)
4-Bromofluorobenzene	105	(79 - 119)
	107	(79 - 119)
Toluene-d8	113	(79 - 119)
	112	(79 - 119)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: D1C210269 **Work Order #...:** EACRF1AA **Matrix.....:** WATER
MB Lot-Sample #: D1D030000-348

Prep Date.....: 04/02/01 **Analysis Time..:** 11:42
Analysis Date..: 04/02/01 **Prep Batch #...:** 1093348
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	10	ug/L	SW846 8260B
Acetonitrile	ND	20	ug/L	SW846 8260B
Acrylonitrile	ND	20	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
Carbon disulfide	ND	1.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroprene	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	2.0	ug/L	SW846 8260B
Allyl chloride	ND	2.0	ug/L	SW846 8260B
Dibromomethane	ND	1.0	ug/L	SW846 8260B
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	2.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
1,4-Dioxane	ND	200	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Iodomethane	ND	1.0	ug/L	SW846 8260B
Isobutyl alcohol	ND	50	ug/L	SW846 8260B
Methacrylonitrile	ND	10	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
Methyl methacrylate	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Propionitrile	ND	4.0	ug/L	SW846 8260B

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: D1C210269 **Work Order #...:** EACRF1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
1,2,3-Trichloropropane	ND	1.0	ug/L	SW846 8260B
Vinyl acetate	ND	2.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	SW846 8260B
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	SW846 8260B
2-Butanone (MEK)	ND	5.0	ug/L	SW846 8260B
Acrolein	ND	20	ug/L	SW846 8260B
Ethyl methacrylate	ND	1.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	88	(80 - 120)
1,2-Dichloroethane-d4	94	(72 - 127)
4-Bromofluorobenzene	102	(79 - 119)
Toluene-d8	107	(79 - 119)

NOTE(S):

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

US GEOLOGICAL SURVEY

Method Blank Report

GC/MS Volatiles

Lot-Sample #: D1D030000-348 B **Work Order #:** EACRF1AA **Matrix:** WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Cyclotrisiloxane, hexamethyl-	541-05-9	2.12 J T2 M	10.007	ug/L
Unknown		4.6 J M	12.78	ug/L
Unknown		5.8 J M	15.027	ug/L
Unknown		3.4 J M	16.912	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D1C210269 **Work Order #...:** DXQC11CJ-MS **Matrix.....:** WG
MS Lot-Sample #: D1C210269-001 DXQC11CK-MSD
Date Sampled...: 03/20/01 14:25 **Date Received..:** 03/21/01
Prep Date.....: 04/02/01 **Analysis Date..:** 04/02/01
Prep Batch #...: 1093348 **Analysis Time..:** 12:40
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**100**	**(79 - 119)**			**SW846 8260B**
	90	**(79 - 119)**	**10**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**94**	**(76 - 116)**			**SW846 8260B**
	85	**(76 - 116)**	**11**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**98**	**(79 - 119)**			**SW846 8260B**
	92	**(79 - 119)**	**6.3**	**(0-20)**	**SW846 8260B**
Toluene	**99**	**(75 - 122)**			**SW846 8260B**
	90	**(75 - 122)**	**9.7**	**(0-20)**	**SW846 8260B**
Trichloroethene	**102**	**(81 - 121)**			**SW846 8260B**
	93	**(81 - 121)**	**8.7**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(80 - 120)
	83	(80 - 120)
1,2-Dichloroethane-d4	99	(72 - 127)
	87	(72 - 127)
4-Bromofluorobenzene	104	(79 - 119)
	95	(79 - 119)
Toluene-d8	111	(79 - 119)
	100	(79 - 119)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: D1C210269 **Work Order #...:** DXQC11CJ-MS **Matrix.....:** WG
MS Lot-Sample #: D1C210269-001 DXQC11CK-MSD
Date Sampled...: 03/20/01 14:25 **Date Received..:** 03/21/01
Prep Date.....: 04/02/01 **Analysis Date..:** 04/02/01
Prep Batch #...: 1093348 **Analysis Time..:** 12:40
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	**ND**	**10.0**	**9.96**	**ug/L**	**100**		**SW846 8260B**
	ND	**10.0**	**8.99**	**ug/L**	**90**	**10**	**SW846 8260B**
Chlorobenzene	**ND**	**10.0**	**9.45**	**ug/L**	**94**		**SW846 8260B**
	ND	**10.0**	**8.46**	**ug/L**	**85**	**11**	**SW846 8260B**
1,1-Dichloroethene	**ND**	**10.0**	**9.82**	**ug/L**	**98**		**SW846 8260B**
	ND	**10.0**	**9.22**	**ug/L**	**92**	**6.3**	**SW846 8260B**
Toluene	**ND**	**10.0**	**9.93**	**ug/L**	**99**		**SW846 8260B**
	ND	**10.0**	**9.00**	**ug/L**	**90**	**9.7**	**SW846 8260B**
Trichloroethene	**ND**	**10.0**	**10.2**	**ug/L**	**102**		**SW846 8260B**
	ND	**10.0**	**9.35**	**ug/L**	**93**	**8.7**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
bromofluoromethane	91	(80 - 120)
	83	(80 - 120)
1,2-Dichloroethane-d4	99	(72 - 127)
	87	(72 - 127)
4-Bromofluorobenzene	104	(79 - 119)
	95	(79 - 119)
Toluene-d8	111	(79 - 119)
	100	(79 - 119)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: D1C210269 **Work Order #...:** DXX7Q1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C260000-169 DXX7Q1AD-LCSD
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085169 **Analysis Time..:** 17:35
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Phenol	**80**	**(50 - 90)**			**SW846 8270C**
	81	**(50 - 90)**	**1.0**	**(0-31)**	**SW846 8270C**
2-Chlorophenol	**79**	**(52 - 92)**			**SW846 8270C**
	80	**(52 - 92)**	**2.1**	**(0-33)**	**SW846 8270C**
1,4-Dichlorobenzene	**63**	**(38 - 87)**			**SW846 8270C**
	57	**(38 - 87)**	**10**	**(0-37)**	**SW846 8270C**
N-Nitrosodi-n-propyl-amine	**77**	**(48 - 88)**			**SW846 8270C**
	83	**(48 - 88)**	**8.5**	**(0-33)**	**SW846 8270C**
1,2,4-Trichloro-benzene	**65**	**(43 - 88)**			**SW846 8270C**
	59	**(43 - 88)**	**10**	**(0-35)**	**SW846 8270C**
Acenaphthene	**76**	**(52 - 93)**			**SW846 8270C**
	76	**(52 - 93)**	**0.25**	**(0-28)**	**SW846 8270C**
4-Nitrophenol	**122 a**	**(41 - 108)**			**SW846 8270C**
	114 a	**(41 - 108)**	**6.9**	**(0-40)**	**SW846 8270C**
2,4-Dinitrotoluene	**96**	**(56 - 107)**			**SW846 8270C**
	102	**(56 - 107)**	**6.2**	**(0-30)**	**SW846 8270C**
Pentachlorophenol	**100**	**(42 - 105)**			**SW846 8270C**
	103	**(42 - 105)**	**2.5**	**(0-34)**	**SW846 8270C**
Pyrene	**79**	**(54 - 104)**			**SW846 8270C**
	83	**(54 - 104)**	**5.0**	**(0-31)**	**SW846 8270C**
4-Chloro-3-methylphenol	**90**	**(55 - 95)**			**SW846 8270C**
	92	**(55 - 95)**	**2.4**	**(0-34)**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	80	(37 - 90)
	83	(37 - 90)
Phenol-d5	83	(41 - 91)
	85	(41 - 91)
Nitrobenzene-d5	82	(43 - 94)
	85	(43 - 94)
2-Fluorobiphenyl	68	(33 - 90)
	71	(33 - 90)
2,4,6-Tribromophenol	96	(42 - 103)
	92	(42 - 103)
Terphenyl-d14	82	(29 - 112)
	85	(29 - 112)

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: D1C210269 **Work Order #...:** DXX7Q1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C260000-169 DXX7Q1AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: D1C210269 **Work Order #...:** DXX7Q1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C260000-169 DXX7Q1AD-LCSD
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085169 **Analysis Time..:** 17:35
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Phenol	**150**	**120**	**ug/L**	**80**		**SW846 8270C**
	150	**121**	**ug/L**	**81**	**1.0**	**SW846 8270C**
2-Chlorophenol	**150**	**118**	**ug/L**	**79**		**SW846 8270C**
	150	**120**	**ug/L**	**80**	**2.1**	**SW846 8270C**
1,4-Dichlorobenzene	**100**	**63.1**	**ug/L**	**63**		**SW846 8270C**
	100	**56.9**	**ug/L**	**57**	**10**	**SW846 8270C**
N-Nitrosodi-n-propyl-amine	**100**	**76.5**	**ug/L**	**77**		**SW846 8270C**
	100	**83.3**	**ug/L**	**83**	**8.5**	**SW846 8270C**
1,2,4-Trichloro-benzene	**100**	**65.3**	**ug/L**	**65**		**SW846 8270C**
	100	**59.0**	**ug/L**	**59**	**10**	**SW846 8270C**
Acenaphthene	**100**	**76.0**	**ug/L**	**76**		**SW846 8270C**
	100	**75.9**	**ug/L**	**76**	**0.25**	**SW846 8270C**
4-Nitrophenol	**150**	**184 a**	**ug/L**	**122**		**SW846 8270C**
	150	**171 a**	**ug/L**	**114**	**6.9**	**SW846 8270C**
2,4-Dinitrotoluene	**100**	**96.1**	**ug/L**	**96**		**SW846 8270C**
	100	**102**	**ug/L**	**102**	**6.2**	**SW846 8270C**
Pentachlorophenol	**150**	**150**	**ug/L**	**100**		**SW846 8270C**
	150	**154**	**ug/L**	**103**	**2.5**	**SW846 8270C**
Pyrene	**100**	**78.6**	**ug/L**	**79**		**SW846 8270C**
	100	**82.6**	**ug/L**	**83**	**5.0**	**SW846 8270C**
4-Chloro-3-methylphenol	**150**	**135**	**ug/L**	**90**		**SW846 8270C**
	150	**138**	**ug/L**	**92**	**2.4**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	80	(37 - 90)
	83	(37 - 90)
Phenol-d5	83	(41 - 91)
	85	(41 - 91)
Nitrobenzene-d5	82	(43 - 94)
	85	(43 - 94)
2-Fluorobiphenyl	68	(33 - 90)
	71	(33 - 90)
2,4,6-Tribromophenol	96	(42 - 103)
	92	(42 - 103)
Terphenyl-d14	82	(29 - 112)
	85	(29 - 112)

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: D1C210269 **Work Order #...:** DXX7Q1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C260000-169 DXX7Q1AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D1C210269 **Work Order #...:** DXX7Q1AA **Matrix.....:** WATER
MB Lot-Sample #: D1C260000-169

Prep Date.....: 03/26/01 **Analysis Time..:** 17:12
Analysis Date..: 03/28/01 **Prep Batch #...:** 1085169
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Di-n-butyl phthalate	ND	10	ug/L	SW846 8270C
1,3-Dichlorobenzene	ND	10	ug/L	SW846 8270C
Acenaphthylene	ND	10	ug/L	SW846 8270C
Phenol	ND	10	ug/L	SW846 8270C
2-Chlorophenol	ND	10	ug/L	SW846 8270C
bis(2-Chloroethyl)-ether	ND	10	ug/L	SW846 8270C
bis(2-Chloroethoxy) methane	ND	10	ug/L	SW846 8270C
1,4-Dichlorobenzene	ND	10	ug/L	SW846 8270C
1,2-Dichlorobenzene	ND	10	ug/L	SW846 8270C
2-Methylphenol	ND	10	ug/L	SW846 8270C
bis(2-Ethylhexyl) phthalate	ND	10	ug/L	SW846 8270C
2,2'-oxybis(1-Chloropropa	ND	10	ug/L	SW846 8270C
4-Methylphenol	ND	10	ug/L	SW846 8270C
N-Nitrosodi-n-propyl-amine	ND	10	ug/L	SW846 8270C
Hexachloroethane	ND	10	ug/L	SW846 8270C
Nitrobenzene	ND	10	ug/L	SW846 8270C
Isophorone	ND	10	ug/L	SW846 8270C
2-Nitrophenol	ND	10	ug/L	SW846 8270C
2,4-Dimethylphenol	ND	10	ug/L	SW846 8270C
2,4-Dichlorophenol	ND	10	ug/L	SW846 8270C
1,2,4-Trichloro-benzene	ND	10	ug/L	SW846 8270C
Naphthalene	ND	10	ug/L	SW846 8270C
4-Chloroaniline	ND	10	ug/L	SW846 8270C
Hexachlorobutadiene	ND	10	ug/L	SW846 8270C
2-Methylnaphthalene	ND	10	ug/L	SW846 8270C
Hexachlorocyclopenta-diene	ND	50	ug/L	SW846 8270C
2,4,5-Trichloro-phenol	ND	10	ug/L	SW846 8270C
2,4,6-Trichloro-phenol	ND	10	ug/L	SW846 8270C
2-Chloronaphthalene	ND	10	ug/L	SW846 8270C
Dimethyl phthalate	ND	10	ug/L	SW846 8270C
Acenaphthene	ND	10	ug/L	SW846 8270C
3-Nitroaniline	ND	50	ug/L	SW846 8270C
2,4-Dinitrophenol	ND	50	ug/L	SW846 8270C

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D1C210269 **Work Order #...:** DXX7Q1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
4-Nitrophenol	ND	50	ug/L	SW846 8270C
Dibenzofuran	ND	10	ug/L	SW846 8270C
2,4-Dinitrotoluene	ND	10	ug/L	SW846 8270C
2,6-Dinitrotoluene	ND	10	ug/L	SW846 8270C
Diethyl phthalate	ND	10	ug/L	SW846 8270C
4-Chlorophenyl phenyl ether	ND	10	ug/L	SW846 8270C
Fluorene	ND	10	ug/L	SW846 8270C
4-Nitroaniline	ND	50	ug/L	SW846 8270C
4,6-Dinitro-2-methylphenol	ND	50	ug/L	SW846 8270C
N-Nitrosodiphenylamine	ND	10	ug/L	SW846 8270C
4-Bromophenyl phenyl ether	ND	10	ug/L	SW846 8270C
Hexachlorobenzene	ND	10	ug/L	SW846 8270C
Pentachlorophenol	ND	50	ug/L	SW846 8270C
Phenanthrene	ND	10	ug/L	SW846 8270C
Anthracene	ND	10	ug/L	SW846 8270C
Fluoranthene	ND	10	ug/L	SW846 8270C
Pyrene	ND	10	ug/L	SW846 8270C
Butyl benzyl phthalate	ND	10	ug/L	SW846 8270C
3,3'-Dichlorobenzidine	ND	50	ug/L	SW846 8270C
Benzo(a)anthracene	ND	10	ug/L	SW846 8270C
Chrysene	ND	10	ug/L	SW846 8270C
Di-n-octyl phthalate	ND	10	ug/L	SW846 8270C
Benzo(b)fluoranthene	ND	10	ug/L	SW846 8270C
Benzo(k)fluoranthene	ND	10	ug/L	SW846 8270C
Benzo(a)pyrene	ND	10	ug/L	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	SW846 8270C
Dibenz(a,h)anthracene	ND	10	ug/L	SW846 8270C
Benzo(ghi)perylene	ND	10	ug/L	SW846 8270C
4-Chloro-3-methylphenol	ND	10	ug/L	SW846 8270C
2-Nitroaniline	ND	50	ug/L	SW846 8270C
Acetophenone	ND	10	ug/L	SW846 8270C
2-Acetylaminofluorene	ND	100	ug/L	SW846 8270C
4-Aminobiphenyl	ND	50	ug/L	SW846 8270C
Aniline	ND	10	ug/L	SW846 8270C
Aramite	ND	20	ug/L	SW846 8270C
Benzyl alcohol	ND	10	ug/L	SW846 8270C
2-sec-Butyl-4,6-dinitrophenol	ND	20	ug/L	SW846 8270C
2,6-Dichlorophenol	ND	10	ug/L	SW846 8270C
4-Dimethylaminoazobenzene	ND	20	ug/L	SW846 8270C
7,12-Dimethylbenz(a)-anthracene	ND	20	ug/L	SW846 8270C

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D1C210269 **Work Order #...:** DXX7Q1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
3,3'-Dimethylbenzidine	ND	20	ug/L	SW846 8270C
alpha,alpha-Dimethylphene	ND	50	ug/L	SW846 8270C
1,3-Dinitrobenzene	ND	10	ug/L	SW846 8270C
Diphenylamine	ND	10	ug/L	SW846 8270C
Ethyl methanesulfonate	ND	10	ug/L	SW846 8270C
Hexachloropropene	ND	100	ug/L	SW846 8270C
Isosafrole	ND	20	ug/L	SW846 8270C
Methapyrilene	ND	50	ug/L	SW846 8270C
3-Methylcholanthrene	ND	20	ug/L	SW846 8270C
Methyl methanesulfonate	ND	10	ug/L	SW846 8270C
3-Methylphenol	ND	10	ug/L	SW846 8270C
1,4-Naphthoquinone	ND	50	ug/L	SW846 8270C
1-Naphthylamine	ND	10	ug/L	SW846 8270C
2-Naphthylamine	ND	10	ug/L	SW846 8270C
N-Nitrosodi-n-butylamine	ND	10	ug/L	SW846 8270C
N-Nitrosodiethylamine	ND	10	ug/L	SW846 8270C
N-Nitrosodimethylamine	ND	10	ug/L	SW846 8270C
N-Nitrosomethylethylamine	ND	10	ug/L	SW846 8270C
N-Nitrosomorpholine	ND	10	ug/L	SW846 8270C
N-Nitrosopiperidine	ND	10	ug/L	SW846 8270C
N-Nitrosopyrrolidine	ND	10	ug/L	SW846 8270C
5-Nitro-o-toluidine	ND	20	ug/L	SW846 8270C
Pentachlorobenzene	ND	10	ug/L	SW846 8270C
Pentachloroethane	ND	50	ug/L	SW846 8270C
Pentachloronitrobenzene	ND	50	ug/L	SW846 8270C
Phenacetin	ND	20	ug/L	SW846 8270C
2-Picoline	ND	20	ug/L	SW846 8270C
Pronamide	ND	20	ug/L	SW846 8270C
Pyridine	ND	20	ug/L	SW846 8270C
Safrole	ND	20	ug/L	SW846 8270C
1,2,4,5-Tetrachloro-benzene	ND	10	ug/L	SW846 8270C
2,3,4,6-Tetrachlorophenol	ND	50	ug/L	SW846 8270C
2-Toluidine	ND	10	ug/L	SW846 8270C
1,3,5-Trinitrobenzene	ND	50	ug/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	85	(37 - 90)
Phenol-d5	82	(41 - 91)
Nitrobenzene-d5	86	(43 - 94)
2-Fluorobiphenyl	76	(33 - 90)
2,4,6-Tribromophenol	93	(42 - 103)
Terphenyl-d14	84	(29 - 112)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D1C210269 **Work Order #...:** DXX7Q1AA **Matrix.....:** WATER

NOTE(S):

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

US GEOLOGICAL SURVEY

Method Blank Report

GC/MS Semivolatiles

Lot-Sample #: D1C260000-169 B **Work Order #:** DXX7Q1AA **Matrix:** WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/L

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: D1C210269 **Work Order #...:** DXQ181AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C220000-190 DXQ181AD-LCSD
Prep Date.....: 03/22/01 **Analysis Date..:** 03/27/01
Prep Batch #...: 1081190 **Analysis Time..:** 22:38
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aldrin	**93**	**(55 - 137)**			**SW846 8081A**
	86	**(55 - 137)**	**7.8**	**(0-30)**	**SW846 8081A**
gamma-BHC (Lindane)	**101**	**(68 - 142)**			**SW846 8081A**
	92	**(68 - 142)**	**9.5**	**(0-30)**	**SW846 8081A**
4,4'-DDT	**110**	**(68 - 147)**			**SW846 8081A**
	99	**(68 - 147)**	**10**	**(0-30)**	**SW846 8081A**
Dieldrin	**99**	**(68 - 146)**			**SW846 8081A**
	90	**(68 - 146)**	**9.5**	**(0-30)**	**SW846 8081A**
Endrin	**104**	**(66 - 143)**			**SW846 8081A**
	94	**(66 - 143)**	**9.5**	**(0-30)**	**SW846 8081A**
Heptachlor	**98**	**(59 - 143)**			**SW846 8081A**
	90	**(59 - 143)**	**8.2**	**(0-30)**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	110	(15 - 162)
	100	(15 - 162)
Tetrachloro-m-xylene	89	(49 - 133)
	84	(49 - 133)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: D1C210269 **Work Order #...:** DXQ181AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C220000-190 DXQ181AD-LCSD
Prep Date.....: 03/22/01 **Analysis Date..:** 03/27/01
Prep Batch #...: 1081190 **Analysis Time..:** 22:38
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Aldrin	**0.500**	**0.467**	**ug/L**	**93**		**SW846 8081A**
	0.500	**0.432**	**ug/L**	**86**	**7.8**	**SW846 8081A**
gamma-BHC (Lindane)	**0.500**	**0.506**	**ug/L**	**101**		**SW846 8081A**
	0.500	**0.460**	**ug/L**	**92**	**9.5**	**SW846 8081A**
4,4'-DDT	**0.500**	**0.551**	**ug/L**	**110**		**SW846 8081A**
	0.500	**0.496**	**ug/L**	**99**	**10**	**SW846 8081A**
Dieldrin	**0.500**	**0.496**	**ug/L**	**99**		**SW846 8081A**
	0.500	**0.451**	**ug/L**	**90**	**9.5**	**SW846 8081A**
Endrin	**0.500**	**0.518**	**ug/L**	**104**		**SW846 8081A**
	0.500	**0.471**	**ug/L**	**94**	**9.5**	**SW846 8081A**
Heptachlor	**0.500**	**0.488**	**ug/L**	**98**		**SW846 8081A**
	0.500	**0.449**	**ug/L**	**90**	**8.2**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	110	(15 - 162)
	100	(15 - 162)
Tetrachloro-m-xylene	89	(49 - 133)
	84	(49 - 133)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: D1C210269 **Work Order #...:** DXQ181AA **Matrix.....:** WATER
MB Lot-Sample #: D1C220000-190

Prep Date.....: 03/22/01 **Analysis Time..:** 22:08
Analysis Date..: 03/27/01 **Prep Batch #...:** 1081190
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Diallate	ND	1.0	ug/L	SW846 8081A
Isodrin	ND	0.10	ug/L	SW846 8081A
Kepone	ND	1.0	ug/L	SW846 8081A
Aldrin	ND	0.050	ug/L	SW846 8081A
alpha-BHC	ND	0.050	ug/L	SW846 8081A
beta-BHC	ND	0.050	ug/L	SW846 8081A
delta-BHC	ND	0.050	ug/L	SW846 8081A
gamma-BHC (Lindane)	ND	0.050	ug/L	SW846 8081A
alpha-Chlordane	ND	0.050	ug/L	SW846 8081A
gamma-Chlordane	ND	0.050	ug/L	SW846 8081A
4,4'-DDD	ND	0.050	ug/L	SW846 8081A
4,4'-DDE	ND	0.050	ug/L	SW846 8081A
4,4'-DDT	ND	0.050	ug/L	SW846 8081A
Dieldrin	ND	0.050	ug/L	SW846 8081A
Endosulfan I	ND	0.050	ug/L	SW846 8081A
Endosulfan II	ND	0.050	ug/L	SW846 8081A
Endosulfan sulfate	ND	0.050	ug/L	SW846 8081A
Endrin	ND	0.050	ug/L	SW846 8081A
Endrin aldehyde	ND	0.050	ug/L	SW846 8081A
Heptachlor	ND	0.050	ug/L	SW846 8081A
Heptachlor epoxide	ND	0.050	ug/L	SW846 8081A
Methoxychlor	ND	0.10	ug/L	SW846 8081A
Toxaphene	ND	2.0	ug/L	SW846 8081A
Endrin ketone	ND	0.050	ug/L	SW846 8081A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	104	(15 - 162)
Tetrachloro-m-xylene	72	(49 - 133)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: D1C210269 **Work Order #...:** DXQ2W1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C220000-203 DXQ2W1AD-LCSD
Prep Date.....: 03/22/01 **Analysis Date..:** 03/26/01
Prep Batch #...: 1081203 **Analysis Time..:** 12:58
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aroclor 1016	**98**	**(73 - 123)**			**SW846 8082**
	97	**(73 - 123)**	**1.8**	**(0-20)**	**SW846 8082**
Aroclor 1260	**91**	**(77 - 120)**			**SW846 8082**
	100	**(77 - 120)**	**9.4**	**(0-20)**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	98	(52 - 129)
	103	(52 - 129)
Tetrachloro-m-xylene	83	(54 - 113)
	83	(54 - 113)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: D1C210269 **Work Order #...:** DXQ2W1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C220000-203 DXQ2W1AD-LCSD
Prep Date.....: 03/22/01 **Analysis Date..:** 03/26/01
Prep Batch #...: 1081203 **Analysis Time..:** 12:58
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Aroclor 1016	**2.00**	**1.97**	**ug/L**	**98**		**SW846 8082**
	2.00	**1.93**	**ug/L**	**97**	**1.8**	**SW846 8082**
Aroclor 1260	**2.00**	**1.82**	**ug/L**	**91**		**SW846 8082**
	2.00	**2.00**	**ug/L**	**100**	**9.4**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	98	(52 - 129)
	103	(52 - 129)
Tetrachloro-m-xylene	83	(54 - 113)
	83	(54 - 113)

NOTE(S):

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

old print denotes control parameters

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: D1C210269 **Work Order #...:** DXQ2W1AA **Matrix.....:** WATER
MB Lot-Sample #: D1C220000-203

Prep Date.....: 03/22/01 **Analysis Time..:** 12:25
Analysis Date..: 03/26/01 **Prep Batch #...:** 1081203
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Aroclor 1016	ND	1.0	ug/L	SW846 8082
Aroclor 1221	ND	1.0	ug/L	SW846 8082
Aroclor 1232	ND	1.0	ug/L	SW846 8082
Aroclor 1242	ND	1.0	ug/L	SW846 8082
Aroclor 1248	ND	1.0	ug/L	SW846 8082
Aroclor 1254	ND	1.0	ug/L	SW846 8082
Aroclor 1260	ND	1.0	ug/L	SW846 8082

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	92	(52 - 129)
Tetrachloro-m-xylene	66	(54 - 113)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: D1C210269 **Work Order #...:** DXTFD1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C220000-452 DXTFD1AD-LCSD
Prep Date.....: 03/22/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1081452 **Analysis Time..:** 11:44
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2,4-D	**81**	**(20 - 133)**			**SW846 8151A**
	84	**(20 - 133)**	**3.0**	**(0-30)**	**SW846 8151A**
2,4,5-T	**99**	**(20 - 155)**			**SW846 8151A**
	90	**(20 - 155)**	**9.2**	**(0-30)**	**SW846 8151A**
2,4,5-TP (Silvex)	**102**	**(23 - 146)**			**SW846 8151A**
	89	**(23 - 146)**	**13**	**(0-30)**	**SW846 8151A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	99	(20 - 150)
	64	(20 - 150)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: D1C210269 **Work Order #...:** DXTFD1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C220000-452 DXTFD1AD-LCSD
Prep Date.....: 03/22/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1081452 **Analysis Time..:** 11:44
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
2,4-D	**8.00**	**6.50**	**ug/L**	**81**		**SW846 8151A**
	8.00	**6.70**	**ug/L**	**84**	**3.0**	**SW846 8151A**
2,4,5-T	**2.00**	**1.98**	**ug/L**	**99**		**SW846 8151A**
	2.00	**1.81**	**ug/L**	**90**	**9.2**	**SW846 8151A**
2,4,5-TP (Silvex)	**2.00**	**2.03**	**ug/L**	**102**		**SW846 8151A**
	2.00	**1.78**	**ug/L**	**89**	**13**	**SW846 8151A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	99	(20 - 150)
	64	(20 - 150)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: D1C210269 **Work Order #...:** DXTFD1AA **Matrix.....:** WATER
MB Lot-Sample #: D1C220000-452

Prep Date.....: 03/22/01 **Analysis Time..:** 11:09
Analysis Date..: 03/28/01 **Prep Batch #...:** 1081452
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
2,4-D	ND	4.0	ug/L	SW846 8151A
2,4,5-T	ND	1.0	ug/L	SW846 8151A
2,4,5-TP (Silvex)	ND	1.0	ug/L	SW846 8151A
Dinoseb	ND	0.60	ug/L	SW846 8151A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	56	(20 - 150)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: D1C210269 **Work Order #...:** DX1031AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C270000-277 DX1031AD-LCSD
Prep Date.....: 03/27/01 **Analysis Date..:** 03/31/01
Prep Batch #...: 1086277 **Analysis Time..:** 00:48
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzo(a)pyrene	**80**	**(65 - 121)**			**SW846 8310**
	86	**(65 - 121)**	**6.2**	**(0-20)**	**SW846 8310**
Fluorene	**80**	**(59 - 106)**			**SW846 8310**
	85	**(59 - 106)**	**6.1**	**(0-40)**	**SW846 8310**
Indeno(1,2,3-cd)pyrene	**66**	**(57 - 114)**			**SW846 8310**
	74	**(57 - 114)**	**12**	**(0-30)**	**SW846 8310**
Naphthalene	**77**	**(45 - 101)**			**SW846 8310**
	81	**(45 - 101)**	**5.3**	**(0-40)**	**SW846 8310**
Pyrene	**79**	**(64 - 119)**			**SW846 8310**
	84	**(64 - 119)**	**6.2**	**(0-40)**	**SW846 8310**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	80	(54 - 126)
	86	(54 - 126)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

HPLC

Client Lot #...: D1C210269 **Work Order #...:** DX1031AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C270000-277 DX1031AD-LCSD
Prep Date.....: 03/27/01 **Analysis Date..:** 03/31/01
Prep Batch #...: 1086277 **Analysis Time..:** 00:48
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzo(a)pyrene	**4.00**	**3.22**	**ug/L**	**80**		**SW846 8310**
	4.00	**3.42**	**ug/L**	**86**	**6.2**	**SW846 8310**
Fluorene	**4.00**	**3.21**	**ug/L**	**80**		**SW846 8310**
	4.00	**3.41**	**ug/L**	**85**	**6.1**	**SW846 8310**
Indeno(1,2,3-cd)pyrene	**4.00**	**2.64**	**ug/L**	**66**		**SW846 8310**
	4.00	**2.98**	**ug/L**	**74**	**12**	**SW846 8310**
Naphthalene	**4.00**	**3.08**	**ug/L**	**77**		**SW846 8310**
	4.00	**3.25**	**ug/L**	**81**	**5.3**	**SW846 8310**
Pyrene	**4.00**	**3.15**	**ug/L**	**79**		**SW846 8310**
	4.00	**3.35**	**ug/L**	**84**	**6.2**	**SW846 8310**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	80	(54 - 126)
	86	(54 - 126)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

HPLC

Client Lot #...: D1C210269 **Work Order #...:** DX1031AA **Matrix.....:** WATER
MB Lot-Sample #: D1C270000-277

Prep Date.....: 03/27/01 **Analysis Time..:** 00:19

Analysis Date..: 03/31/01 **Prep Batch #...:** 1086277
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acenaphthene	ND	1.0	ug/L	SW846 8310
Acenaphthylene	ND	1.0	ug/L	SW846 8310
Anthracene	ND	0.10	ug/L	SW846 8310
Benzo(a)anthracene	ND	0.10	ug/L	SW846 8310
Benzo(a)pyrene	ND	0.10	ug/L	SW846 8310
Benzo(b)fluoranthene	ND	0.10	ug/L	SW846 8310
Benzo(ghi)perylene	ND	0.20	ug/L	SW846 8310
Benzo(k)fluoranthene	ND	0.10	ug/L	SW846 8310
Chrysene	ND	0.20	ug/L	SW846 8310
Dibenzo(a,h)anthracene	ND	0.20	ug/L	SW846 8310
Fluoranthene	ND	0.20	ug/L	SW846 8310
Fluorene	ND	0.20	ug/L	SW846 8310
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L	SW846 8310
1-Methylnaphthalene	ND	1.0	ug/L	SW846 8310
2-Methylnaphthalene	ND	1.0	ug/L	SW846 8310
Naphthalene	ND	1.0	ug/L	SW846 8310
Phenanthrene	ND	0.20	ug/L	SW846 8310
Pyrene	ND	0.20	ug/L	SW846 8310

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	85	(54 - 126)

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: D1C210269 **Work Order #...:** DXTJP1D7-MS **Matrix.....:** WATER
MS Lot-Sample #: D1C220263-006 DXTJP1D8-MSD
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 03/27/01 **Analysis Date..:** 04/02/01
Prep Batch #...: 1086277 **Analysis Time..:** 16:07
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzo(a)pyrene	**92**	**(65 - 121)**			**SW846 8310**
	85	**(65 - 121)**	**8.4**	**(0-20)**	**SW846 8310**
Fluorene	**80**	**(59 - 106)**			**SW846 8310**
	81	**(59 - 106)**	**0.75**	**(0-40)**	**SW846 8310**
Indeno(1,2,3-cd)pyrene	**77**	**(57 - 114)**			**SW846 8310**
	75	**(57 - 114)**	**3.0**	**(0-30)**	**SW846 8310**
Naphthalene	**79**	**(45 - 101)**			**SW846 8310**
	81	**(45 - 101)**	**1.7**	**(0-40)**	**SW846 8310**
Pyrene	**80**	**(64 - 119)**			**SW846 8310**
	82	**(64 - 119)**	**2.5**	**(0-40)**	**SW846 8310**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
erphenyl-d14	86	(54 - 126)
	83	(54 - 126)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

HPLC

Client Lot #...: D1C210269 **Work Order #...:** DXTJP1D7-MS **Matrix.....:** WATER
MS Lot-Sample #: D1C220263-006 DXTJP1D8-MSD
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 03/27/01 **Analysis Date..:** 04/02/01
Prep Batch #...: 1086277 **Analysis Time..:** 16:07
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzo(a)pyrene	**ND**	**3.97**	**3.66**	**ug/L**	**92**		**SW846 8310**
	ND	**3.91**	**3.31**	**ug/L**	**85**	**8.4**	**SW846 8310**
Fluorene	**ND**	**3.97**	**3.17**	**ug/L**	**80**		**SW846 8310**
	ND	**3.91**	**3.14**	**ug/L**	**81**	**0.75**	**SW846 8310**
Indeno(1,2,3-cd)pyrene	**ND**	**3.97**	**3.05**	**ug/L**	**77**		**SW846 8310**
	ND	**3.91**	**2.92**	**ug/L**	**75**	**3.0**	**SW846 8310**
Naphthalene	**ND**	**3.97**	**3.15**	**ug/L**	**79**		**SW846 8310**
	ND	**3.91**	**3.16**	**ug/L**	**81**	**1.7**	**SW846 8310**
Pyrene	**ND**	**3.97**	**3.19**	**ug/L**	**80**		**SW846 8310**
	ND	**3.91**	**3.22**	**ug/L**	**82**	**2.5**	**SW846 8310**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	86	(54 - 126)
	83	(54 - 126)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

Trace Level Organic Compounds

Client Lot #...: D1C210269 **Work Order #...:** DX2DP1AC **Matrix.....:** WATER
LCS Lot-Sample#: G1C270000-405
Prep Date.....: 03/27/01 **Analysis Date..:** 03/29/01
Prep Batch #...: 1086405 **Analysis Time..:** 04:10
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
2,3,7,8-TCDD	**92**	**(50 - 150)**	**SW846 8280A**
1,2,3,7,8-PeCDD	**94**	**(50 - 150)**	**SW846 8280A**
1,2,3,6,7,8-HxCDD	**86**	**(50 - 150)**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDD	**83**	**(50 - 150)**	**SW846 8280A**
OCDD	**91**	**(50 - 150)**	**SW846 8280A**
2,3,7,8-TCDF	**92**	**(50 - 150)**	**SW846 8280A**
1,2,3,7,8-PeCDF	**104**	**(50 - 150)**	**SW846 8280A**
1,2,3,6,7,8-HxCDF	**90**	**(50 - 150)**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDF	**93**	**(50 - 150)**	**SW846 8280A**
OCDF	**89**	**(50 - 150)**	**SW846 8280A**

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
.3C-2,3,7,8-TCDD	81	(25 - 150)
13C-2,3,7,8-TCDF	78	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	94	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	90	(25 - 150)
13C-OCDD	87	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	99	(25 - 150)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: D1C210269 **Work Order #...:** DX2DP1AC **Matrix.....:** WATER
LCS Lot-Sample#: G1C270000-405
Prep Date.....: 03/27/01 **Analysis Date..:** 03/29/01
Prep Batch #...: 1086405 **Analysis Time..:** 04:10
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
2,3,7,8-TCDD	**25.0**	**23.0**	**ng/L**	**92**	**SW846 8280A**
1,2,3,7,8-PeCDD	**62.5**	**58.9**	**ng/L**	**94**	**SW846 8280A**
1,2,3,6,7,8-HxCDD	**62.5**	**53.9**	**ng/L**	**86**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDD	**62.5**	**52.1**	**ng/L**	**83**	**SW846 8280A**
OCDD	**125**	**114**	**ng/L**	**91**	**SW846 8280A**
2,3,7,8-TCDF	**25.0**	**22.9**	**ng/L**	**92**	**SW846 8280A**
1,2,3,7,8-PeCDF	**62.5**	**65.0**	**ng/L**	**104**	**SW846 8280A**
1,2,3,6,7,8-HxCDF	**62.5**	**56.0**	**ng/L**	**90**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDF	**62.5**	**58.2**	**ng/L**	**93**	**SW846 8280A**
OCDF	**125**	**112**	**ng/L**	**89**	**SW846 8280A**

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	81	(25 - 150)
13C-2,3,7,8-TCDF	78	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	94	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	90	(25 - 150)
13C-OCDD	87	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	99	(25 - 150)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

Trace Level Organic Compounds

Client Lot #...: D1C210269 **Work Order #...:** DX2DP1AA **Matrix.....:** WATER
MB Lot-Sample #: G1C270000-405

Prep Date.....: 03/27/01 **Analysis Time..:** 03:23
Analysis Date..: 03/29/01 **Prep Batch #...:** 1086405
Dilution Factor: 1

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	1.1	ng/L	SW846 8280A
Total TCDD	ND	1.1	ng/L	SW846 8280A
Total PeCDD	ND	3.4	ng/L	SW846 8280A
Total HxCDD	ND	1.6	ng/L	SW846 8280A
Total TCDF	ND	1.6	ng/L	SW846 8280A
Total PeCDF	ND	3.3	ng/L	SW846 8280A
Total HxCDF	ND	1.7	ng/L	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	78	(25 - 150)
13C-2,3,7,8-TCDF	78	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	91	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	93	(25 - 150)
13C-OCDD	82	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	94	(25 - 150)

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

Trace Level Organic Compounds

Client Lot #...: D1C210269 **Work Order #...:** DXTJP1CJ-MS **Matrix.....:** WATER
MS Lot-Sample #: D1C220263-006 DXTJP1CK-MSD
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 03/27/01 **Analysis Date..:** 03/29/01
Prep Batch #...: 1086405 **Analysis Time..:** 08:55
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2,3,7,8-TCDD	**94**	**(50 - 150)**			**SW846 8280A**
	93	**(50 - 150)**	**1.0**	**(0-50)**	**SW846 8280A**
1,2,3,7,8-PeCDD	**89**	**(50 - 150)**			**SW846 8280A**
	90	**(50 - 150)**	**0.26**	**(0-50)**	**SW846 8280A**
1,2,3,6,7,8-HxCDD	**88**	**(50 - 150)**			**SW846 8280A**
	87	**(50 - 150)**	**1.3**	**(0-50)**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDD	**82**	**(50 - 150)**			**SW846 8280A**
	86	**(50 - 150)**	**4.3**	**(0-50)**	**SW846 8280A**
OCDD	**91**	**(50 - 150)**			**SW846 8280A**
	91	**(50 - 150)**	**0.12**	**(0-50)**	**SW846 8280A**
2,3,7,8-TCDF	**87**	**(50 - 150)**			**SW846 8280A**
	84	**(50 - 150)**	**3.9**	**(0-50)**	**SW846 8280A**
1,2,3,7,8-PeCDF	**93**	**(50 - 150)**			**SW846 8280A**
	89	**(50 - 150)**	**4.4**	**(0-50)**	**SW846 8280A**
1,2,3,6,7,8-HxCDF	**88**	**(50 - 150)**			**SW846 8280A**
	86	**(50 - 150)**	**2.6**	**(0-50)**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDF	**91**	**(50 - 150)**			**SW846 8280A**
	89	**(50 - 150)**	**2.0**	**(0-50)**	**SW846 8280A**
OCDF	**91**	**(50 - 150)**			**SW846 8280A**
	90	**(50 - 150)**	**0.59**	**(0-50)**	**SW846 8280A**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	90	(25 - 150)
	90	(25 - 150)
13C-2,3,7,8-TCDF	92	(25 - 150)
	93	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	96	(25 - 150)
	96	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	93	(25 - 150)
	90	(25 - 150)
13C-OCDD	89	(25 - 150)
	90	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	103	(25 - 150)
	97	(25 - 150)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: D1C210269 **Work Order #...:** DXTJP1CJ-MS **Matrix.....:** WATER
MS Lot-Sample #: D1C220263-006 DXTJP1CK-MSD
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 03/27/01 **Analysis Date..:** 03/29/01
Prep Batch #...: 1086405 **Analysis Time..:** 08:55
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
2,3,7,8-TCDD	**ND**	**25.3**	**23.8**	**ng/L**	**94**		**SW846 8280A**
	ND	**24.2**	**22.6**	**ng/L**	**93**	**1.0**	**SW846 8280A**
1,2,3,7,8-PeCDD	**ND**	**63.2**	**56.5**	**ng/L**	**89**		**SW846 8280A**
	ND	**60.5**	**54.2**	**ng/L**	**90**	**0.26**	**SW846 8280A**
1,2,3,6,7,8-HxCDD	**ND**	**63.2**	**55.5**	**ng/L**	**88**		**SW846 8280A**
	ND	**60.5**	**52.5**	**ng/L**	**87**	**1.3**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDD	**ND**	**63.2**	**52.0**	**ng/L**	**82**		**SW846 8280A**
	ND	**60.5**	**52.0**	**ng/L**	**86**	**4.3**	**SW846 8280A**
OCDD	**ND**	**126**	**115**	**ng/L**	**91**		**SW846 8280A**
	ND	**121**	**110**	**ng/L**	**91**	**0.12**	**SW846 8280A**
2,3,7,8-TCDF	**ND**	**25.3**	**22.0**	**ng/L**	**87**		**SW846 8280A**
	ND	**24.2**	**20.3**	**ng/L**	**84**	**3.9**	**SW846 8280A**
1,2,3,7,8-PeCDF	**ND**	**63.2**	**59.1**	**ng/L**	**93**		**SW846 8280A**
	ND	**60.5**	**54.2**	**ng/L**	**89**	**4.4**	**SW846 8280A**
1,2,3,6,7,8-HxCDF	**ND**	**63.2**	**55.9**	**ng/L**	**88**		**SW846 8280A**
	ND	**60.5**	**52.2**	**ng/L**	**86**	**2.6**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDF	**ND**	**63.2**	**57.5**	**ng/L**	**91**		**SW846 8280A**
	ND	**60.5**	**54.0**	**ng/L**	**89**	**2.0**	**SW846 8280A**
OCDF	**ND**	**126**	**115**	**ng/L**	**91**		**SW846 8280A**
	ND	**121**	**109**	**ng/L**	**90**	**0.59**	**SW846 8280A**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	90	(25 - 150)
	90	(25 - 150)
13C-2,3,7,8-TCDF	92	(25 - 150)
	93	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	96	(25 - 150)
	96	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	93	(25 - 150)
	90	(25 - 150)
13C-OCDD	89	(25 - 150)
	90	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	103	(25 - 150)
	97	(25 - 150)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D1C210269 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Mercury	93	(78 - 118)			SW846 7470A	03/22-03/23/01	1081213
	102	(78 - 118)	8.6	(0-10)	SW846 7470A	03/22-03/23/01	1081213
		Dilution Factor: 1					
Aluminum	97	(89 - 109)			SW846 6010B	04/09-04/10/01	1088262
	94	(89 - 109)	3.5	(0-20)	SW846 6010B	04/09-04/10/01	1088262
		Dilution Factor: 1					
Barium	100	(92 - 115)			SW846 6010B	04/09-04/11/01	1088262
	100	(92 - 115)	0.69	(0-20)	SW846 6010B	04/09-04/11/01	1088262
		Dilution Factor: 1					
Beryllium	98	(91 - 117)			SW846 6010B	04/09-04/11/01	1088262
	99	(91 - 117)	0.73	(0-20)	SW846 6010B	04/09-04/11/01	1088262
		Dilution Factor: 1					
Calcium	103	(88 - 108)			SW846 6010B	04/09-04/10/01	1088262
	99	(88 - 108)	3.4	(0-20)	SW846 6010B	04/09-04/10/01	1088262
		Dilution Factor: 1					
Cobalt	98	(91 - 111)			SW846 6010B	04/09-04/11/01	1088262
	98	(91 - 111)	0.67	(0-20)	SW846 6010B	04/09-04/11/01	1088262
		Dilution Factor: 1					
Copper	97	(93 - 113)			SW846 6010B	04/09-04/11/01	1088262
	98	(93 - 113)	0.70	(0-20)	SW846 6010B	04/09-04/11/01	1088262
		Dilution Factor: 1					
Iron	101	(92 - 114)			SW846 6010B	04/09-04/10/01	1088262
	98	(92 - 114)	3.1	(0-20)	SW846 6010B	04/09-04/10/01	1088262
		Dilution Factor: 1					
Magnesium	108	(93 - 113)			SW846 6010B	04/09-04/10/01	1088262
	104	(93 - 113)	3.2	(0-20)	SW846 6010B	04/09-04/10/01	1088262
		Dilution Factor: 1					
Manganese	98	(89 - 114)			SW846 6010B	04/09-04/11/01	1088262
	98	(89 - 114)	0.83	(0-20)	SW846 6010B	04/09-04/11/01	1088262
		Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D1C210269 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Nickel	97	(89 - 109)			SW846 6010B	04/09-04/11/01	1088262
	97	(89 - 109)	0.43	(0-20)	SW846 6010B	04/09-04/11/01	1088262
		Dilution Factor: 1					
Potassium	103	(87 - 110)			SW846 6010B	04/09-04/10/01	1088262
	99	(87 - 110)	4.1	(0-20)	SW846 6010B	04/09-04/10/01	1088262
		Dilution Factor: 1					
Sodium	109	(91 - 111)			SW846 6010B	04/09-04/10/01	1088262
	101	(91 - 111)	7.0	(0-20)	SW846 6010B	04/09-04/10/01	1088262
		Dilution Factor: 1					
Tin	100	(89 - 109)			SW846 6010B	04/09-04/11/01	1088262
	101	(89 - 109)	0.91	(0-20)	SW846 6010B	04/09-04/11/01	1088262
		Dilution Factor: 1					
Vanadium	100	(88 - 115)			SW846 6010B	04/09-04/11/01	1088262
	101	(88 - 115)	0.82	(0-20)	SW846 6010B	04/09-04/11/01	1088262
		Dilution Factor: 1					
Zinc	96	(83 - 111)			SW846 6010B	04/09-04/11/01	1088262
	98	(83 - 111)	1.6	(0-20)	SW846 6010B	04/09-04/11/01	1088262
		Dilution Factor: 1					
Molybdenum	97	(90 - 110)			SW846 6010B	04/09-04/11/01	1088262
	98	(90 - 110)	0.89	(0-20)	SW846 6010B	04/09-04/11/01	1088262
		Dilution Factor: 1					
Antimony	105	(86 - 119)			SW846 6020	04/05-04/11/01	1089265
	110	(86 - 119)	3.8	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					
Arsenic	104	(86 - 114)			SW846 6020	04/05-04/11/01	1089265
	106	(86 - 114)	1.3	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					
Cadmium	101	(85 - 115)			SW846 6020	04/05-04/11/01	1089265
	104	(85 - 115)	2.5	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D1C210269 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Chromium	106	(85 - 115)			SW846 6020	04/05-04/11/01	1089265
	111	(85 - 115)	4.1	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					
Lead	101	(85 - 115)			SW846 6020	04/05-04/11/01	1089265
	104	(85 - 115)	2.0	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					
Selenium	102	(85 - 115)			SW846 6020	04/05-04/11/01	1089265
	104	(85 - 115)	2.2	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					
Silver	97	(85 - 114)			SW846 6020	04/05-04/11/01	1089265
	96	(85 - 114)	0.59	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					
Thallium	101	(85 - 115)			SW846 6020	04/05-04/11/01	1089265
	104	(85 - 115)	3.2	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D1C210269 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Mercury	5.00	4.66	ug/L	93		SW846 7470A	03/22-03/23/01	1081213
	5.00	5.08	ug/L	102	8.6	SW846 7470A	03/22-03/23/01	1081213
			Dilution Factor: 1					
Aluminum	2000	1950	ug/L	97		SW846 6010B	04/09-04/10/01	1088262
	2000	1880	ug/L	94	3.5	SW846 6010B	04/09-04/10/01	1088262
			Dilution Factor: 1					
Barium	2000	1990	ug/L	100		SW846 6010B	04/09-04/11/01	1088262
	2000	2010	ug/L	100	0.69	SW846 6010B	04/09-04/11/01	1088262
			Dilution Factor: 1					
Beryllium	50.0	49.0	ug/L	98		SW846 6010B	04/09-04/11/01	1088262
	50.0	49.4	ug/L	99	0.73	SW846 6010B	04/09-04/11/01	1088262
			Dilution Factor: 1					
Calcium	50000	51300	ug/L	103		SW846 6010B	04/09-04/10/01	1088262
	50000	49600	ug/L	99	3.4	SW846 6010B	04/09-04/10/01	1088262
			Dilution Factor: 1					
Cobalt	500	488	ug/L	98		SW846 6010B	04/09-04/11/01	1088262
	500	491	ug/L	98	0.67	SW846 6010B	04/09-04/11/01	1088262
			Dilution Factor: 1					
Copper	250	243	ug/L	97		SW846 6010B	04/09-04/11/01	1088262
	250	245	ug/L	98	0.70	SW846 6010B	04/09-04/11/01	1088262
			Dilution Factor: 1					
Iron	1000	1010	ug/L	101		SW846 6010B	04/09-04/10/01	1088262
	1000	979	ug/L	98	3.1	SW846 6010B	04/09-04/10/01	1088262
			Dilution Factor: 1					
Magnesium	50000	53900	ug/L	108		SW846 6010B	04/09-04/10/01	1088262
	50000	52200	ug/L	104	3.2	SW846 6010B	04/09-04/10/01	1088262
			Dilution Factor: 1					
Manganese	500	488	ug/L	98		SW846 6010B	04/09-04/11/01	1088262
	500	492	ug/L	98	0.83	SW846 6010B	04/09-04/11/01	1088262
			Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D1C210269 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nickel	500	484	ug/L	97		SW846 6010B	04/09-04/11/01	1088262
	500	486	ug/L	97	0.43	SW846 6010B	04/09-04/11/01	1088262
			Dilution Factor: 1					
Potassium	50000	51400	ug/L	103		SW846 6010B	04/09-04/10/01	1088262
	50000	49300	ug/L	99	4.1	SW846 6010B	04/09-04/10/01	1088262
			Dilution Factor: 1					
Sodium	50000	54400	ug/L	109		SW846 6010B	04/09-04/10/01	1088262
	50000	50700	ug/L	101	7.0	SW846 6010B	04/09-04/10/01	1088262
			Dilution Factor: 1					
Tin	2000	2000	ug/L	100		SW846 6010B	04/09-04/11/01	1088262
	2000	2020	ug/L	101	0.91	SW846 6010B	04/09-04/11/01	1088262
			Dilution Factor: 1					
Vanadium	500	499	ug/L	100		SW846 6010B	04/09-04/11/01	1088262
	500	503	ug/L	101	0.82	SW846 6010B	04/09-04/11/01	1088262
			Dilution Factor: 1					
Zinc	500	481	ug/L	96		SW846 6010B	04/09-04/11/01	1088262
	500	489	ug/L	98	1.6	SW846 6010B	04/09-04/11/01	1088262
			Dilution Factor: 1					
Molybdenum	1000	972	ug/L	97		SW846 6010B	04/09-04/11/01	1088262
	1000	981	ug/L	98	0.89	SW846 6010B	04/09-04/11/01	1088262
			Dilution Factor: 1					
Antimony	200	211	ug/L	105		SW846 6020	04/05-04/11/01	1089265
	200	219	ug/L	110	3.8	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					
Arsenic	200	208	ug/L	104		SW846 6020	04/05-04/11/01	1089265
	200	211	ug/L	106	1.3	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					
Cadmium	200	202	ug/L	101		SW846 6020	04/05-04/11/01	1089265
	200	207	ug/L	104	2.5	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D1C210269 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chromium	200	213	ug/L	106		SW846 6020	04/05-04/11/01	1089265
	200	222	ug/L	111	4.1	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					
Lead	200	203	ug/L	101		SW846 6020	04/05-04/11/01	1089265
	200	207	ug/L	104	2.0	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					
Selenium	200	204	ug/L	102		SW846 6020	04/05-04/11/01	1089265
	200	209	ug/L	104	2.2	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					
Silver	200	194	ug/L	97		SW846 6020	04/05-04/11/01	1089265
	200	193	ug/L	96	0.59	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					
Thallium	200	202	ug/L	101		SW846 6020	04/05-04/11/01	1089265
	200	209	ug/L	104	3.2	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					

NOTE(S):

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

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D1C210269 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: D1C220000-213 **Prep Batch #...:** 1081213						
Mercury	ND	0.20	ug/L	SW846 7470A	03/22-03/23/01	DXQ5V1AA
		Dilution Factor: 1				
		Analysis Time..: 11:44				
MB Lot-Sample #: D1C290000-262 **Prep Batch #...:** 1088262						
Aluminum	ND	100	ug/L	SW846 6010B	04/09-04/10/01	DX5HJ1CL
		Dilution Factor: 1				
		Analysis Time..: 16:43				
Barium	ND	10.0	ug/L	SW846 6010B	04/09-04/11/01	DX5HJ1AL
		Dilution Factor: 1				
		Analysis Time..: 14:18				
Beryllium	ND	2.0	ug/L	SW846 6010B	04/09-04/11/01	DX5HJ1CM
		Dilution Factor: 1				
		Analysis Time..: 14:18				
Calcium	**120 B**	**200**	**ug/L**	**SW846 6010B**	**04/09-04/10/01**	**DX5HJ1AA**
		Dilution Factor: 1				
		Analysis Time..: 16:43				
Cobalt	ND	10.0	ug/L	SW846 6010B	04/09-04/11/01	DX5HJ1CT
		Dilution Factor: 1				
		Analysis Time..: 14:18				
Copper	ND	20.0	ug/L	SW846 6010B	04/09-04/11/01	DX5HJ1CN
		Dilution Factor: 1				
		Analysis Time..: 14:18				
Iron	ND	100	ug/L	SW846 6010B	04/09-04/10/01	DX5HJ1AN
		Dilution Factor: 1				
		Analysis Time..: 16:43				
Magnesium	ND	200	ug/L	SW846 6010B	04/09-04/10/01	DX5HJ1AC
		Dilution Factor: 1				
		Analysis Time..: 16:43				
Manganese	ND	10.0	ug/L	SW846 6010B	04/09-04/11/01	DX5HJ1AP
		Dilution Factor: 1				
		Analysis Time..: 14:18				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D1C210269 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Nickel	ND	40.0	ug/L	SW846 6010B	04/09-04/11/01	DX5HJ1CP
		Dilution Factor: 1				
		Analysis Time..: 14:18				
Potassium	ND	3000	ug/L	SW846 6010B	04/09-04/10/01	DX5HJ1AD
		Dilution Factor: 1				
		Analysis Time..: 16:43				
Sodium	ND	5000	ug/L	SW846 6010B	04/09-04/10/01	DX5HJ1AE
		Dilution Factor: 1				
		Analysis Time..: 16:43				
Tin	ND	100	ug/L	SW846 6010B	04/09-04/11/01	DX5HJ1CU
		Dilution Factor: 1				
		Analysis Time..: 14:18				
Vanadium	ND	10.0	ug/L	SW846 6010B	04/09-04/11/01	DX5HJ1CQ
		Dilution Factor: 1				
		Analysis Time..: 14:18				
Zinc	ND	20.0	ug/L	SW846 6010B	04/09-04/11/01	DX5HJ1CR
		Dilution Factor: 1				
		Analysis Time..: 14:18				
Molybdenum	ND	20.0	ug/L	SW846 6010B	04/09-04/11/01	DX5HJ1CV
		Dilution Factor: 1				
		Analysis Time..: 14:18				

MB Lot-Sample #: D1C300000-265 **Prep Batch #...:** 1089265

Antimony	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DX7PK1AA
		Dilution Factor: 1				
		Analysis Time..: 17:01				
Arsenic	ND	5.0	ug/L	SW846 6020	04/05-04/11/01	DX7PK1AC
		Dilution Factor: 1				
		Analysis Time..: 17:01				
Cadmium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DX7PK1AD
		Dilution Factor: 1				
		Analysis Time..: 17:01				
Chromium	**0.86 B**	**1.0**	**ug/L**	**SW846 6020**	**04/05-04/11/01**	**DX7PK1AJ**
		Dilution Factor: 1				
		Analysis Time..: 17:01				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D1C210269 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Lead	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DX7PK1AE
		Dilution Factor: 1				
		Analysis Time..: 17:01				
Selenium	ND	5.0	ug/L	SW846 6020	04/05-04/11/01	DX7PK1AF
		Dilution Factor: 1				
		Analysis Time..: 17:01				
Silver	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DX7PK1AG
		Dilution Factor: 1				
		Analysis Time..: 17:01				
Thallium	**0.027 B**	**1.0**	**ug/L**	**SW846 6020**	**04/05-04/11/01**	**DX7PK1AH**
		Dilution Factor: 1				
		Analysis Time..: 17:01				

NOTE(S):

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

B Estimated result. Result is less than RL.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D1C210269 **Matrix.....:** WATER
Date Sampled...: 03/22/01 13:10 **Date Received..:** 03/24/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D1C260107-022 **Prep Batch #...:** 1088262							
Barium	100	(92 - 115)			SW846 6010B	04/09-04/11/01	DXX981A0
	100	(92 - 115)	0.81	(0-20)	SW846 6010B	04/09-04/11/01	DXX981A1
		Dilution Factor: 1					
		Analysis Time..: 15:34					

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D1C210269 **Matrix.....:** WATER
Date Sampled...: 03/27/01 11:00 **Date Received..:** 03/27/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D1C270213-002 **Prep Batch #...:** 1088262							
Aluminum	282 N	(89 - 109)			SW846 6010B	04/09-04/10/01	DX2AR1DF
	268 N	(89 - 109)	2.5	(0-20)	SW846 6010B	04/09-04/10/01	DX2AR1DG
		Dilution Factor: 1					
		Analysis Time..: 17:09					
Barium	100	(92 - 115)			SW846 6010B	04/09-04/11/01	DX2AR1CP
	101	(92 - 115)	1.3	(0-20)	SW846 6010B	04/09-04/11/01	DX2AR1CQ
		Dilution Factor: 1					
		Analysis Time..: 14:53					
Beryllium	97	(91 - 117)			SW846 6010B	04/09-04/11/01	DX2AR1DJ
	99	(91 - 117)	2.3	(0-20)	SW846 6010B	04/09-04/11/01	DX2AR1DK
		Dilution Factor: 1					
		Analysis Time..: 14:53					
Calcium	101	(88 - 108)			SW846 6010B	04/09-04/10/01	DX2AR1A4
	91	(88 - 108)	4.1	(0-20)	SW846 6010B	04/09-04/10/01	DX2AR1A5
		Dilution Factor: 1					
		Analysis Time..: 17:09					
Cobalt	98	(91 - 111)			SW846 6010B	04/09-04/11/01	DX2AR1D2
	99	(91 - 111)	1.2	(0-20)	SW846 6010B	04/09-04/11/01	DX2AR1D3
		Dilution Factor: 1					
		Analysis Time..: 14:53					
Copper	98	(93 - 113)			SW846 6010B	04/09-04/11/01	DX2AR1DM
	99	(93 - 113)	1.3	(0-20)	SW846 6010B	04/09-04/11/01	DX2AR1DN
		Dilution Factor: 1					
		Analysis Time..: 14:53					
Iron	NC,MSB	(92 - 114)			SW846 6010B	04/09-04/10/01	DX2AR1CU
	NC,MSB	(92 - 114)		(0-20)	SW846 6010B	04/09-04/10/01	DX2AR1CV
		Dilution Factor: 1					
		Analysis Time..: 17:09					
Magnesium	108	(93 - 113)			SW846 6010B	04/09-04/10/01	DX2AR1A6
	102	(93 - 113)	4.2	(0-20)	SW846 6010B	04/09-04/10/01	DX2AR1A7
		Dilution Factor: 1					
		Analysis Time..: 17:09					
Manganese	97	(89 - 114)			SW846 6010B	04/09-04/11/01	DX2AR1CW
	100	(89 - 114)	1.2	(0-20)	SW846 6010B	04/09-04/11/01	DX2AR1CX
		Dilution Factor: 1					
		Analysis Time..: 14:53					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D1C210269 **Matrix.....:** WATER
Date Sampled...: 03/27/01 11:00 **Date Received..:** 03/27/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Nickel	96	(89 - 109)			SW846 6010B	04/09-04/11/01	DX2AR1DQ
	97	(89 - 109)	0.92	(0-20)	SW846 6010B	04/09-04/11/01	DX2AR1DR
		Dilution Factor: 1					
		Analysis Time..: 14:53					
Potassium	106	(87 - 110)			SW846 6010B	04/09-04/10/01	DX2AR1A8
	102	(87 - 110)	3.4	(0-20)	SW846 6010B	04/09-04/10/01	DX2AR1A9
		Dilution Factor: 1					
		Analysis Time..: 17:09					
Sodium	108	(91 - 111)			SW846 6010B	04/09-04/10/01	DX2AR1CA
	95	(91 - 111)	3.4	(0-20)	SW846 6010B	04/09-04/10/01	DX2AR1CC
		Dilution Factor: 1					
		Analysis Time..: 17:09					
Tin	101	(89 - 109)			SW846 6010B	04/09-04/11/01	DX2AR1D5
	103	(89 - 109)	2.1	(0-20)	SW846 6010B	04/09-04/11/01	DX2AR1D6
		Dilution Factor: 1					
		Analysis Time..: 14:53					
Vanadium	100	(88 - 115)			SW846 6010B	04/09-04/11/01	DX2AR1DU
	102	(88 - 115)	2.0	(0-20)	SW846 6010B	04/09-04/11/01	DX2AR1DV
		Dilution Factor: 1					
		Analysis Time..: 14:53					
Zinc	94	(83 - 111)			SW846 6010B	04/09-04/11/01	DX2AR1DX
	95	(83 - 111)	1.0	(0-20)	SW846 6010B	04/09-04/11/01	DX2AR1D0
		Dilution Factor: 1					
		Analysis Time..: 14:53					
Molybdenum	98	(90 - 110)			SW846 6010B	04/09-04/11/01	DX2AR1D8
	100	(90 - 110)	2.1	(0-20)	SW846 6010B	04/09-04/11/01	DX2AR1D9
		Dilution Factor: 1					
		Analysis Time..: 14:53					

NOTE(S):

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

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D1C210269 **Matrix.....:** WATER
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D1C220263-006 **Prep Batch #...:** 1089265							
Antimony	123 N	(86 - 119)			SW846 6020	04/05-04/11/01	DXTJP1C9
	120 N	(86 - 119)	2.7	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DA
		Dilution Factor: 1					
		Analysis Time..: 18:48					
Arsenic	108	(86 - 114)			SW846 6020	04/05-04/11/01	DXTJP1DC
	106	(86 - 114)	1.9	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DD
		Dilution Factor: 1					
		Analysis Time..: 18:48					
Cadmium	103	(85 - 115)			SW846 6020	04/05-04/11/01	DXTJP1DE
	104	(85 - 115)	1.2	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DF
		Dilution Factor: 1					
		Analysis Time..: 18:48					
Chromium	106	(85 - 115)			SW846 6020	04/05-04/11/01	DXTJP1DQ
	101	(85 - 115)	4.7	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DR
		Dilution Factor: 1					
		Analysis Time..: 18:48					
Lead	102	(85 - 115)			SW846 6020	04/05-04/11/01	DXTJP1DG
	104	(85 - 115)	2.4	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DH
		Dilution Factor: 1					
		Analysis Time..: 18:48					
Selenium	106	(85 - 115)			SW846 6020	04/05-04/11/01	DXTJP1DJ
	108	(85 - 115)	2.4	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DK
		Dilution Factor: 1					
		Analysis Time..: 18:48					
Silver	25 N	(85 - 114)			SW846 6020	04/05-04/11/01	DXTJP1DL
	31 N	(85 - 114)	20	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DM
		Dilution Factor: 1					
		Analysis Time..: 18:48					
Thallium	101	(85 - 115)			SW846 6020	04/05-04/11/01	DXTJP1DN
	103	(85 - 115)	1.4	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DP
		Dilution Factor: 1					
		Analysis Time..: 18:48					

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D1C210269 **Matrix.....:** WATER
Date Sampled...: 03/19/01 13:18 **Date Received..:** 03/20/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D1C200126-001 **Prep Batch #...:** 1081213							
Mercury	93	(78 - 118)			SW846 7470A	03/22-03/23/01	DXL8V1CR
	96	(78 - 118)	2.8	(0-10)	SW846 7470A	03/22-03/23/01	DXL8V1CT

Dilution Factor: 1
Analysis Time..: 11:52

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1C210269 **Matrix.....:** WATER
Date Sampled...: 03/22/01 13:10 **Date Received..:** 03/24/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D1C260107-022 **Prep Batch #...:** 1088262									
Barium									
	40.0	2000	2030	ug/L	100		SW846 6010B	04/09-04/11/01	DXX981A0
	40.0	2000	2050	ug/L	100	0.81	SW846 6010B	04/09-04/11/01	DXX981A1

Dilution Factor: 1
Analysis Time..: 15:34

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1C210269 **Matrix.....:** WATER
Date Sampled...: 03/27/01 11:00 **Date Received..:** 03/27/01

MS Lot-Sample #: D1C270213-002 **Prep Batch #...:** 1088262

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Aluminum									
	5530	2000	11200 N	ug/L	282		SW846 6010B	04/09-04/10/01	DX2AR1DF
	5530	2000	10900 N	ug/L	268	2.5	SW846 6010B	04/09-04/10/01	DX2AR1DG
			Dilution Factor: 1						
			Analysis Time..: 17:09						
Barium									
	106	2000	2100	ug/L	100		SW846 6010B	04/09-04/11/01	DX2AR1CP
	106	2000	2130	ug/L	101	1.3	SW846 6010B	04/09-04/11/01	DX2AR1CQ
			Dilution Factor: 1						
			Analysis Time..: 14:53						
Beryllium									
	ND	50.0	48.6	ug/L	97		SW846 6010B	04/09-04/11/01	DX2AR1DJ
	ND	50.0	49.7	ug/L	99	2.3	SW846 6010B	04/09-04/11/01	DX2AR1DK
			Dilution Factor: 1						
			Analysis Time..: 14:53						
Calcium									
	69000	50000	119000	ug/L	101		SW846 6010B	04/09-04/10/01	DX2AR1A4
	69000	50000	114000	ug/L	91	4.1	SW846 6010B	04/09-04/10/01	DX2AR1A5
			Dilution Factor: 1						
			Analysis Time..: 17:09						
Cobalt									
	2.9	500	493	ug/L	98		SW846 6010B	04/09-04/11/01	DX2AR1D2
	2.9	500	499	ug/L	99	1.2	SW846 6010B	04/09-04/11/01	DX2AR1D3
			Dilution Factor: 1						
			Analysis Time..: 14:53						
Copper									
	15.2	250	260	ug/L	98		SW846 6010B	04/09-04/11/01	DX2AR1DM
	15.2	250	264	ug/L	99	1.3	SW846 6010B	04/09-04/11/01	DX2AR1DN
			Dilution Factor: 1						
			Analysis Time..: 14:53						
Iron									
	5330	1000	6940	ug/L			SW846 6010B	04/09-04/10/01	DX2AR1CU
			Qualifiers: NC,MSB						
	5330	1000	6670	ug/L			SW846 6010B	04/09-04/10/01	DX2AR1CV
			Qualifiers: NC,MSB						
			Dilution Factor: 1						
			Analysis Time..: 17:09						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1C210269 **Matrix.....:** WATER
Date Sampled...: 03/27/01 11:00 **Date Received..:** 03/27/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Magnesium									
	27800	50000	81900	ug/L	108		SW846 6010B	04/09-04/10/01	DX2AR1A6
	27800	50000	78600	ug/L	102	4.2	SW846 6010B	04/09-04/10/01	DX2AR1A7
			Dilution Factor: 1						
			Analysis Time..: 17:09						
Manganese									
	835	500	1320	ug/L	97		SW846 6010B	04/09-04/11/01	DX2AR1CW
	835	500	1340	ug/L	100	1.2	SW846 6010B	04/09-04/11/01	DX2AR1CX
			Dilution Factor: 1						
			Analysis Time..: 14:53						
Nickel									
	6.0	500	485	ug/L	96		SW846 6010B	04/09-04/11/01	DX2AR1DQ
	6.0	500	490	ug/L	97	0.92	SW846 6010B	04/09-04/11/01	DX2AR1DR
			Dilution Factor: 1						
			Analysis Time..: 14:53						
Potassium									
	4060	50000	56900	ug/L	106		SW846 6010B	04/09-04/10/01	DX2AR1A8
	4060	50000	55000	ug/L	102	3.4	SW846 6010B	04/09-04/10/01	DX2AR1A9
			Dilution Factor: 1						
			Analysis Time..: 17:09						
Sodium									
	138000	50000	192000	ug/L	108		SW846 6010B	04/09-04/10/01	DX2AR1CA
	138000	50000	186000	ug/L	95	3.4	SW846 6010B	04/09-04/10/01	DX2AR1CC
			Dilution Factor: 1						
			Analysis Time..: 17:09						
Tin									
	ND	2000	2020	ug/L	101		SW846 6010B	04/09-04/11/01	DX2AR1D5
	ND	2000	2060	ug/L	103	2.1	SW846 6010B	04/09-04/11/01	DX2AR1D6
			Dilution Factor: 1						
			Analysis Time..: 14:53						
Vanadium									
	9.3	500	510	ug/L	100		SW846 6010B	04/09-04/11/01	DX2AR1DU
	9.3	500	521	ug/L	102	2.0	SW846 6010B	04/09-04/11/01	DX2AR1DV
			Dilution Factor: 1						
			Analysis Time..: 14:53						
Zinc									
	61.9	500	531	ug/L	94		SW846 6010B	04/09-04/11/01	DX2AR1DX
	61.9	500	536	ug/L	95	1.0	SW846 6010B	04/09-04/11/01	DX2AR1D0
			Dilution Factor: 1						
			Analysis Time..: 14:53						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1C210269 **Matrix.....:** WATER
Date Sampled...: 03/27/01 11:00 **Date Received..:** 03/27/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Molybdenum									
	12.2	1000	990	ug/L	98		SW846 6010B	04/09-04/11/01	DX2AR1D8
	12.2	1000	1010	ug/L	100	2.1	SW846 6010B	04/09-04/11/01	DX2AR1D9

Dilution Factor: 1
Analysis Time..: 14:53

NOTE(S):

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

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1C210269 **Matrix.....:** WATER
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D1C220263-006 **Prep Batch #...:** 1089265									
Antimony									
	ND	200	247 N	ug/L	123		SW846 6020	04/05-04/11/01	DXTJP1C9
	ND	200	240 N	ug/L	120	2.7	SW846 6020	04/05-04/11/01	DXTJP1DA
			Dilution Factor: 1						
			Analysis Time..: 18:48						
Arsenic									
	4.9	200	221	ug/L	108		SW846 6020	04/05-04/11/01	DXTJP1DC
	4.9	200	217	ug/L	106	1.9	SW846 6020	04/05-04/11/01	DXTJP1DD
			Dilution Factor: 1						
			Analysis Time..: 18:48						
Cadmium									
	ND	200	206	ug/L	103		SW846 6020	04/05-04/11/01	DXTJP1DE
	ND	200	208	ug/L	104	1.2	SW846 6020	04/05-04/11/01	DXTJP1DF
			Dilution Factor: 1						
			Analysis Time..: 18:48						
Chromium									
	3.5	200	215	ug/L	106		SW846 6020	04/05-04/11/01	DXTJP1DQ
	3.5	200	205	ug/L	101	4.7	SW846 6020	04/05-04/11/01	DXTJP1DR
			Dilution Factor: 1						
			Analysis Time..: 18:48						
Lead									
	ND	200	204	ug/L	102		SW846 6020	04/05-04/11/01	DXTJP1DG
	ND	200	209	ug/L	104	2.4	SW846 6020	04/05-04/11/01	DXTJP1DH
			Dilution Factor: 1						
			Analysis Time..: 18:48						
Selenium									
	8.4	200	219	ug/L	106		SW846 6020	04/05-04/11/01	DXTJP1DJ
	8.4	200	225	ug/L	108	2.4	SW846 6020	04/05-04/11/01	DXTJP1DK
			Dilution Factor: 1						
			Analysis Time..: 18:48						
Silver									
	ND	200	50.1 N	ug/L	25		SW846 6020	04/05-04/11/01	DXTJP1DL
	ND	200	61.3 N	ug/L	31	20	SW846 6020	04/05-04/11/01	DXTJP1DM
			Dilution Factor: 1						
			Analysis Time..: 18:48						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1C210269 **Matrix.....:** WATER
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Thallium									
	ND	200	202	ug/L	101		SW846 6020	04/05-04/11/01	DXTJP1DN
	ND	200	205	ug/L	103	1.4	SW846 6020	04/05-04/11/01	DXTJP1DP

Dilution Factor: 1
Analysis Time..: 18:48

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1C210269 **Matrix.....:** WATER
Date Sampled...: 03/19/01 13:18 **Date Received..:** 03/20/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D1C200126-001 **Prep Batch #...:** 1081213									
Mercury									
	ND	5.00	4.66	ug/L	93		SW846 7470A	03/22-03/23/01	DXL8V1CR
	ND	5.00	4.79	ug/L	96	2.8	SW846 7470A	03/22-03/23/01	DXL8V1CT

Dilution Factor: 1
Analysis Time..: 11:52

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: D1C210269 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Halogens		Work Order #: EAQ1M1AC	LCS Lot-Sample#: D1D120000-313		
	106	(79 - 115)	SW846 9020B	04/10/01	1102313
		Dilution Factor: 1			
		Analysis Time..: 12:00			
Total Sulfide		Work Order #: DXRHE1AE	LCS Lot-Sample#: D1C220000-298		
	150 N	(70 - 130)	SW846 9030B/9034	03/22/01	1081298
		Dilution Factor: 1			
		Analysis Time..: 12:00			

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: D1C210269 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Halogens			Work Order #:	EAQ1M1AC	LCS Lot-Sample#:	D1D120000-313	
	100	106	ug/L	106	SW846 9020B	04/10/01	1102313
			Dilution Factor: 1				
			Analysis Time..: 12:00				
Total Sulfide			Work Order #:	DXRHE1AE	LCS Lot-Sample#:	D1C220000-298	
	10.0	15.0 N	mg/L	150	SW846 9030B/9034	03/22/01	1081298
			Dilution Factor: 1				
			Analysis Time..: 12:00				

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: D1C210269 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate		WO#:DX1G51AC-LCS/DX1G51AD-LCSD				LCS Lot-Sample#: D1C270000-178	
	97	(80 - 120)			EPA 314.0	03/26/01	1086178
	98	(80 - 120)	1.1	(0-20)	EPA 314.0	03/26/01	1086178
		Dilution Factor: 1					
Total Cyanide		WO#:EAADP1AC-LCS/EAADP1AD-LCSD				LCS Lot-Sample#: D1D020000-472	
	98	(90 - 110)			SW846 9012A	03/29-04/02/01	1092472
	99	(90 - 110)	1.4	(0-18)	SW846 9012A	03/29-04/02/01	1092472
		Dilution Factor: 1					
Total Organic Carbon		WO#:EAWG21AC-LCS/EAWG21AD-LCSD				LCS Lot-Sample#: D1D160000-481	
	104	(90 - 110)			SW846 9060	04/16/01	1106481
	103	(90 - 110)	0.30	(0-10)	SW846 9060	04/16/01	1106481
		Dilution Factor: 1					

NOTE(S):

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

Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: D1C210269 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate		WO#:DX1G51AC-LCS/DX1G51AD-LCSD LCS Lot-Sample#: D1C270000-178						
	200	193	ug/L	97		EPA 314.0	03/26/01	1086178
	200	195	ug/L	98	1.1	EPA 314.0	03/26/01	1086178
			Dilution Factor: 1					
Total Cyanide		WO#:EAADP1AC-LCS/EAADP1AD-LCSD LCS Lot-Sample#: D1D020000-472						
	0.200	0.196	mg/L	98		SW846 9012A	03/29-04/02/01	1092472
	0.200	0.199	mg/L	99	1.4	SW846 9012A	03/29-04/02/01	1092472
			Dilution Factor: 1					
Total Organic Carbon		WO#:EAWG21AC-LCS/EAWG21AD-LCSD LCS Lot-Sample#: D1D160000-481						
	25.0	25.9	mg/L	104		SW846 9060	04/16/01	1106481
	25.0	25.8	mg/L	103	0.30	SW846 9060	04/16/01	1106481
			Dilution Factor: 1					

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: D1C210269 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate		Work Order #: DX1G51AA		MB Lot-Sample #:	D1C270000-178	
	ND	20.0	ug/L	EPA 314.0	03/26/01	1086178
		Dilution Factor: 1				
		Analysis Time..: 10:01				
Total Cyanide		Work Order #: EAADP1AA		MB Lot-Sample #:	D1D020000-472	
	ND	0.010	mg/L	SW846 9012A	03/29-04/02/01	1092472
		Dilution Factor: 1				
		Analysis Time..: 13:00				
Total Organic Halogens		Work Order #: EAQ1M1AA		MB Lot-Sample #:	D1D120000-313	
	3.9 B	**30.0**	**ug/L**	**SW846 9020B**	**04/10/01**	**1102313**
		Dilution Factor: 1				
		Analysis Time..: 12:00				
Total Organic Carbon		Work Order #: EAWG21AA		MB Lot-Sample #:	D1D160000-481	
	ND	1.0	mg/L	SW846 9060	04/16/01	1106481
		Dilution Factor: 1				
		Analysis Time..: 08:00				
Total Sulfide		Work Order #: DXRHE1AA		MB Lot-Sample #:	D1C220000-298	
	ND	4.0	mg/L	SW846 9030B/9034	03/22/01	1081298
		Dilution Factor: 1				
		Analysis Time..: 12:00				

NOTE(S):

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

B Estimated result. Result is less than RL.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: D1C210269 **Matrix.....:** WATER
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate		WO#: DXTJP1CL-MS/DXTJP1CM-MSD				MS Lot-Sample #: D1C220263-006	
	95	(80 - 120)			EPA 314.0	03/26/01	1086178
	97	(80 - 120)	1.4	(0-20)	EPA 314.0	03/26/01	1086178
		Dilution Factor: 1					
		Analysis Time..: 11:14					
Total Cyanide		WO#: DXT0P1AF-MS/DXT0P1AG-MSD				MS Lot-Sample #: D1C220316-005	
	90	(90 - 110)			SW846 9012A	03/29-04/02/01	1092472
	92	(90 - 110)	2.4	(0-18)	SW846 9012A	03/29-04/02/01	1092472
		Dilution Factor: 1					
		Analysis Time..: 13:00					
Total Organic Halogens		WO#: DXTJP1EC-MS/DXTJP1ED-MSD				MS Lot-Sample #: D1C220263-006	
	106	(79 - 115)			SW846 9020B	04/10/01	1102313
	107	(79 - 115)	0.93	(0-18)	SW846 9020B	04/10/01	1102313
		Dilution Factor: 1					
		Analysis Time..: 12:00					
Total Organic Carbon		WO#: EAE431AN-MS/EAE431AP-MSD				MS Lot-Sample #: D1D040302-001	
	99	(90 - 110)			SW846 9060	04/16/01	1106473
	98	(90 - 110)	0.85	(0-10)	SW846 9060	04/16/01	1106473
		Dilution Factor: 1					
		Analysis Time..: 08:00					
Total Sulfide		WO#: DXPFP1AC-MS/DXPFP1AD-MSD				MS Lot-Sample #: D1C210168-007	
	69 N	(70 - 130)			SW846 9030B/9034	03/22/01	1081298
	67 N	(70 - 130)	1.7	(0-20)	SW846 9030B/9034	03/22/01	1081298
		Dilution Factor: 1					
		Analysis Time..: 12:00					

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: D1C210269 **Matrix.....:** WATER
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate			WO#: DXTJP1CL-MS/DXTJP1CM-MSD				MS Lot-Sample #: D1C220263-006		
	19.9	100	115	ug/L	95		EPA 314.0	03/26/01	1086178
	19.9	100	117	ug/L	97	1.4	EPA 314.0	03/26/01	1086178
			Dilution Factor: 1						
			Analysis Time..: 11:14						
Total Cyanide			WO#: DXT0P1AF-MS/DXT0P1AG-MSD				MS Lot-Sample #: D1C220316-005		
	0.0047	0.100	0.0948	mg/L	90		SW846 9012A	03/29-04/02/01	1092472
	0.0047	0.100	0.0971	mg/L	92	2.4	SW846 9012A	03/29-04/02/01	1092472
			Dilution Factor: 1						
			Analysis Time..: 13:00						
Total Organic Halogens			WO#: DXTJP1EC-MS/DXTJP1ED-MSD				MS Lot-Sample #: D1C220263-006		
	ND	100	106	ug/L	106		SW846 9020B	04/10/01	1102313
	ND	100	107	ug/L	107	0.93	SW846 9020B	04/10/01	1102313
			Dilution Factor: 1						
			Analysis Time..: 12:00						
›tal Organic Carbon			WO#: EAE431AN-MS/EAE431AP-MSD				MS Lot-Sample #: D1D040302-001		
	21.2	25.0	46.0	mg/L	99		SW846 9060	04/16/01	1106473
	21.2	25.0	45.6	mg/L	98	0.85	SW846 9060	04/16/01	1106473
			Dilution Factor: 1						
			Analysis Time..: 08:00						
Total Sulfide			WO#: DXPFP1AC-MS/DXPFP1AD-MSD				MS Lot-Sample #: D1C210168-007		
	ND	20.0	14.0 N	mg/L	69		SW846 9030B/9	03/22/01	1081298
	ND	20.0	13.7 N	mg/L	67	1.7	SW846 9030B/9	03/22/01	1081298
			Dilution Factor: 1						
			Analysis Time..: 12:00						

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

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

2.3 3/21

Project Name & Number	PACKING AND SHIPPING DETAILS	
Cannon Air Force Base, Ground Water Sampling 463536004	Packed and Sealed for Shipping by R.K. DeWees	Seal Number 156384
Sampling Location: Landfill-5, Cannon Air Force Base, NM	Delivered to Shipper by R.K. DeWees	Airbill Number 8169 9322 6400
Team Leader: Project chief -- Fred Gebhardt	Sampling Status ☒ Done ☐ Continuing	

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
03 20 2001	1425	CAFB - 5	Ground-water	17	All Apx-IX: SW8260B, SW8270C, SW8280, SW8310, SW8081, SW8082, SW8151, Total-METALS: SW6010 (Al,Ba,Be, Ca, Co, Cu, Fe, Mg, Mn, Mo, Ni, K, Na, Sn, V, Zn), SW6020-ICP-MS (Sb, Ag, Cd, As, Cr, Pb, Se, Tl), SW7470 (Hg), SW9012, SW9030, SW9060 ,SW9020. Pechlorate-EPA 314.0	Environmental Sample
03-20-01	1425	CAFB-5-TB	ULTRA PURE	3	VOC SW5030/SW 8260B	" "

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 ☐ Yes ☐ No
R.K. D	TO FEDEX	03-20-01	1600	Quanterra Environmental 4955 Yarrow Street Arvada, CO 80002 ph: (303) 736-0184 Attention: Karen Kuoppala	Condition of Contents
	Chris Ness	3/21/01	0800		Contents Temperature
					Laboratory Project Number

STL Denver

Sample Receiving Checklist

Lot #: D1C210269 Date/Time Received: 3/21/01 - 0800

Company Name & Sampling Site: USGS-Cannon AFB

*Cooler #(s): 1

Temperatures (°C): 2.3°

PM to Complete This Section: *Yes* *No*

Residual chlorine check required: ☐ ☐

Special instruction to Sample Receiving staff:

Unpacking & Labeling Check Points:

N/A	Yes	No		Initials
☐	☑	☐	1. Cooler seals intact. (N/A if hand delivered)	CR
	☑	☐	2. Chain of custody present.	
	☐	☑	3. Bottles broken and/or are leaking, comment if yes.	
			PHOTOGRAPH BROKEN BOTTLES	
	☑	☐	4. Containers labeled, comment if no.	
☐	☑	☐	5. pH of all samples checked and meet requirements, note exceptions.	
	☑	☐	6. Chain of custody includes "received by" and "relinquished" by signatures, dates, and times.	
	☐	☑	7. Receipt date(s) > 48 hours past the collection date(s)? If yes, notify PA/PM.	
	☑	☐	8. Chain of custody agrees with bottle count, comment if no.	
	☑	☐	9. Chain of custody agrees with labels, comment if no.	
☑	☑	☐	10. VOA samples filled completely, comment if no.	
☐	☑	☐	11. VOA vials preserved, check label. Preservative ☐HCl ☑4±2°C ☐Sodium Thiosulfate	
	☐	☑	12. Did samples require preservation with sodium thiosulfate?	
☑	☐	☐	13. If yes to #12, did the samples contain residual chlorine?	
☑	☐	☐	14. Sediment present in dissolved/filtered bottles.	
	☐	☑	15. Are analyses with short holding times requested?	
☑	☐	☐	16. Is extra sample volume provided for MS, MSD or matrix duplicates?	
	☐	☑	17. Multiphase samples present? If yes, comment below.	
	☐	☑	18. Any subsampling for volatiles? If yes, list samples.	
			PHOTOGRAPH MULTIPHASE SAMPLES	
☑	☐	☐	19. Subcontract COC signed and sent with samples to bottle prep?	
	☐	☐	20. Was sample labeling double checked by a second person?	
☑	☐	☐	21. Were sample bottles, COC and paperwork double checked for dissolved/filtered metals by a second person?	CR

Document any problems or discrepancies and the actions taken to resolve them on a Condition Upon Receipt Anomaly Report (CUR).

COPY FOR YOUR INFORMATION

CONTRACT LABORATORY DATA-REVIEW WORKSHEET

1.0 GENERAL INFORMATION Laboratory Lot Number: 01C220263

Data reviewer: Richard Waddow Review date: 5/7/01

District, Project, & Account #: NM Cannon AFB 4635-36004

Sample collection date: 3/21/01 Sample matrix/no.: Water

No. of sample types in lot: Environmental 6 Trip blank 2 Equip. blank ____

MS/MSD 2 Other: ____

2.0 INVOICE STATUS FOR LOT: OK Invoice copy attached X

3.0 DATA REPORTS and FILES

Date of Lab analytical report: 4/20/01 Number of copies: bound 1 unbound 2

No. of volumes of raw-data report: ____ No. of CD copies of raw-data report: 1

Raw-data report reviewed? Yes ___ No X Electronic data files on CD? Yes X No ____

EDD file format: NWIS X STL standard ____ ERPIMS ____ DODEC ____

Comments—Data Reports ____

4.0 SAMPLE ANALYSES *(Page numbers listed in worksheet refer to lab analytical report)*

4.1 Were accelerated turn-around times (TATs) requested for analyses? Yes ___ No X

If yes, list TAT period and if completed: ____

4.2 Were analyses on chain-of-custody (COC) form performed by lab? YES X NO ____

If **no**, list missing or cancelled analyses and reason for non-performance: ____

4.3 Were the samples properly preserved, labeled, no lab log-in problems, and(or) at appropriate temperature (<6 deg. C) upon receipt by the laboratory: Yes X No ____

If **no**, list sample/lab IDs, and associated problems with when delivered at laboratory:

Laboratory Lot No: 01C220263

4.4 Were preparation (extraction) and(or) analysis holding times met? Yes X No ____

If **no**, list analytical methods and sample/lab IDs for samples that exceeded holding-time limits:

4.5 Did surrogate recoveries meet QC acceptance criteria? Yes X No ____ NA ____

If **no**, list methods, surrogates, associated sample/lab IDs, lab report page #s: ____

4.6 Were dilution factors greater than 1 for ***organic*** analyses? Yes ____ No X NA ____

If **yes**, list analytical method, lab/sample IDs, and reason for raised dilution factors: dilution ____ high-analyte levels ____ matrix interferences ____ other ____

4.7 Were dilution factors greater than 1 for **inorganic** analyses? Yes ____ No X NA ____

If **yes**, list analytical method, lab/sample IDs, and reason for raised dilution factors: dilution ____ high-analyte levels ____ matrix interferences ____ other ____

4.8 Additional comments about sample analyses: ____

Laboratory Lot No: 01C220263

5.0 QUALITY CONTROL (QC) ANALYSES and RESULTS

5.1 Did lab control samples (LCS/LSCD) meet percent recoveries (%R) criteria? Yes___ No X

If **no**, list method, analytes, LCS/LCSD, and report page #s:

~~8260~~ 8270C 4-Nitrophenol LCS/LCSD (p. 130)

5.2 Were any target analytes detected in the **Laboratory Method Blanks**? Yes X No___

If **yes**, list method, analytes, report page #s:

6010B Mn, Na (p. 170-171) 6020 Cr, Tl (p. 171-172)
9020B TOX (p. 189)

5.3 Did the **MS/MSD** results meet %R or RPD acceptance criteria? Yes___ No X NA___

Note: matrix spike and matrix spike duplicate (MS/MSD) data are used to evaluate the effect of sample matrix on the analytical process and should be only used in conjunction with other available lab QC data. In some cases, MS samples not directly associated with this lot may be used by the laboratory.

List analytical method and if MS samples are associated with this lot.

If did not meet acceptance criteria also list analytes; MS, MSD or RPD; and lab report page #:

8260B, 8270C, 8081A, 8082 associated MS lot # yes X no___
8151A, 8310, 8280, 9012A, 314 associated MS lot # yes X no___
6010B Al, Ca, Fe, Na MS/MSD (p. 173-174) associated MS lot # yes ~~X~~ no X
6010B, 7470A, 9020A, 9060 associated MS lot # yes X no___
6020 (Sb, Ag) MS/MSD (p. 180) associated MS lot # yes X no___
9030 Sulfide MS/MSD (p. 190) associated MS lot # yes X no___

No MS results reported for method(s):

5.4 Additional comments about QC results:

Laboratory Lot No: 01C220263

6.0 ANALYTICAL METHODS USED in this LABORATORY LOT NUMBER

X VOCs by GC/MS--method 8260B app. IX *[water (W) or solids (S) analysis holding-time (HT) of 14 days]*

___ Gasoline Range Organics (GRO) + BTEX--method 8015M-GRO *[W and S: analysis HT 14 days]*

___ Diesel Range Organics-method 8015M-DRO *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*

X Pesticides by GC--method 8081A *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*

X PCBs by GC--method 8082 *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

___ Pesticides by GC--method 8141A *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*

X Herbicides by GC--method 8151A *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

X SVOCs by GC/MS--method 8270C *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

X Dioxins and Furans--methods 8280 or 8290 *[W and S: prep HT 30 days; analysis HT 45 days]*

X PAHs by HPLC method 8310 *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

___ Explosives by HPLC method 8330 *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

___ Hexane extractable materials (HEM and SGT-HEM)--method 1664 *[W: analysis HT 28 days]*

X Total organic carbon (TOC)--methods 415.1 or 9060 *[W: analysis HT 28 days]*

___ Dissolved organic carbon (DOC)--methods 415.1 or 9060 *[W: analysis HT 28 days]*

X Total organic halides (TOX)--method 9020 *[W: analysis HT 28 days]*

X Metals by ICP--method 6010B/200.7 Dissolved ___ Total X *[W and S: analysis HT 180 days]*

X Metals by ICP/MS--method 6020/200.8 Dissolved ___ Total X *[W and S: analysis HT 180 days]*

___ Metals by GFAA methods *[W and S: analysis HT 180 days]* Methods:Sb-7041, As-7060, Cd-7131 Cr-7191, Pb-7421, Se-7740, Tl-7841 List GFAA metals: ___

___ Hexavalent chromium--method 7196 *[W: analysis HT **24-48 hours**]*

X Mercury by CVAA--method 7470A (W) and 7471A (S) *[W and S: analysis HT 28 days]*

___ Inorganic anions--method 300 *[W: analysis HT **48 hours**- NO_2, NO_3, ortho-P; HT 28 days--Br,Cl ,F, SO_4]*

___ Total dissolved solids (TDS)--method 160.1 and(or) TSS--method 160.2 *[W: analysis HT 7 days]*

___ Total alkalinity--method 310.1 *[W: analysis HT 14 days]*

___ Nitrogen, ammonia--method 350.1 *[W: analysis HT 28 days]*

___ Nitrogen, TKN--method 351.2 *[W: analysis HT 28 days]*

___ Nitrogen, nitrate + nitrite--method 353.2 *[W: analysis HT 28 days]* NO_3 or NO_2 only *[HT **48 hours**]*

___ Nitrogen, nitrite--method 354.1 *[W: analysis HT **48 hours**]*

___ Total phosphorus--method 365.3 *[W: analysis HT 28 days]*

X Cyanide, total and amenable--methods 9010B or 9012A *[W and S: analysis HT 14 days]*

___ Other analyses: 9030B - Total Sulfides 314 - Perchlorate

QC DATA ASSOCIATION SUMMARY

D1C220263

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WG	SW846 9060		1107405	1107185
	WG	SW846 6020		1089265	1089103
	WG	SW846 9020B		1102313	1102126
	WG	SW846 7470A		1082356	1082180
	WG	SW846 8082		1085201	1085077
	WG	SW846 8081A		1085198	1085076
	WG	SW846 8260B		1094154	1094052
	WG	SW846 8270C		1082235	1082098
	WG	SW846 6010B		1085289	1085144
	WG	SW846 9012A		1093368	1093200
	WG	SW846 8151A		1085329	1085170
	WG	SW846 8280A		1086405	1086229
	WG	SW846 8310		1086277	1086128
	WG	SW846 9030B/9034		1085382	1085197
	WG	EPA 314.0		1086178	1086052
002	WG	SW846 9060		1107405	1107185
	WG	SW846 6020		1089265	1089103
	WG	SW846 9020B		1102313	1102126
	WG	SW846 7470A		1082356	1082180
	WG	SW846 8082		1085201	1085077
	WG	SW846 8081A		1085198	1085076
	WG	SW846 8260B		1094154	1094052
	WG	SW846 8270C		1082235	1082098
	WG	SW846 6010B		1085289	1085144
	WG	SW846 9012A		1093368	1093200
	WG	SW846 8151A		1085329	1085170
	WG	SW846 8280A		1086405	1086229
	WG	SW846 8310		1086277	1086128
	WG	SW846 9030B/9034		1085382	1085197
	WG	EPA 314.0		1086178	1086052
003	WG	SW846 9060		1107405	1107185
	WG	SW846 6020		1089265	1089103
	WG	SW846 9020B		1102313	1102126
	WG	SW846 7470A		1082356	1082180
	WG	SW846 8082		1085201	1085077
	WG	SW846 8081A		1085198	1085076
	WG	SW846 8260B		1094154	1094052
	WG	SW846 8270C		1085169	
	WG	SW846 6010B		1085289	1085144
	WG	SW846 9012A		1093368	1093200
	WG	SW846 8151A		1085329	1085170
	WG	SW846 8280A		1086405	1086229

(Continued on next page)

QC DATA ASSOCIATION SUMMARY

D1C220263

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
003	WG	SW846 8310		1086277	1086128
	WG	SW846 9030B/9034		1085382	1085197
004	WQ	SW846 8260B		1094154	1094052
005	WG	SW846 9060		1107405	1107185
	WG	SW846 6020		1089265	1089103
	WG	SW846 9020B		1102313	1102126
	WG	SW846 7470A		1082356	1082180
	WG	SW846 8082		1085201	1085077
	WG	SW846 8081A		1085198	1085076
	WG	SW846 8260B		1094154	1094052
	WG	SW846 8270C		1085169	
	WG	SW846 6010B		1085289	1085144
	WG	SW846 9012A		1093368	1093200
	WG	SW846 8151A		1085329	1085170
	WG	SW846 8280A		1086405	1086229
	WG	SW846 8310		1086277	1086128
	WG	SW846 9030B/9034		1085382	1085197
006	WG	SW846 9060		1107405	1107185
	WG	SW846 6020		1089265	1089103
	WG	SW846 9020B		1102313	1102126
	WG	SW846 7470A		1082356	1082180
	WG	SW846 8082		1085201	1085077
	WG	SW846 8081A		1085198	1085076
	WG	SW846 8260B		1094154	1094052
	WG	SW846 8270C		1082235	1082098
	WG	SW846 6010B		1085289	1085144
	WG	SW846 9012A		1093368	1093200
	WG	SW846 8151A		1085329	1085170
	WG	SW846 8280A		1086405	1086229
	WG	SW846 8310		1086277	1086128
	WG	SW846 9030B/9034		1085382	1085197
	WG	EPA 314.0		1086178	1086052
007	WG	SW846 9060		1107405	1107185
	WG	SW846 6020		1089265	1089103
	WG	SW846 9020B		1102313	1102126
	WG	SW846 7470A		1082356	1082180
	WG	SW846 8082		1085201	1085077
	WG	SW846 8081A		1085198	1085076
	WG	SW846 8260B		1094154	1094052
	WG	SW846 8270C		1085169	

(Continued on next page)

QC DATA ASSOCIATION SUMMARY

D1C220263

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
007	WG	SW846 6010B		1085289	1085144
	WG	SW846 9012A		1093368	1093200
	WG	SW846 8151A		1085329	1085170
	WG	SW846 8280A		1086405	1086229
	WG	SW846 8310		1086277	1086128
	WG	SW846 9030B/9034		1085382	1085197
008	WQ	SW846 8260B		1094154	1094052

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D1C220263 **Work Order #...:** EADMR1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1D040000-154 EADMR1AD-LCSD
Prep Date.....: 04/03/01 **Analysis Date..:** 04/03/01
Prep Batch #...: 1094154 **Analysis Time..:** 10:04
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**87**	**(79 - 119)**			**SW846 8260B**
	94	**(79 - 119)**	**8.2**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**84**	**(76 - 116)**			**SW846 8260B**
	88	**(76 - 116)**	**4.3**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**86**	**(79 - 119)**			**SW846 8260B**
	88	**(79 - 119)**	**2.3**	**(0-20)**	**SW846 8260B**
Toluene	**89**	**(75 - 122)**			**SW846 8260B**
	91	**(75 - 122)**	**2.4**	**(0-20)**	**SW846 8260B**
Trichloroethene	**91**	**(81 - 121)**			**SW846 8260B**
	98	**(81 - 121)**	**6.9**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(80 - 120)
	86	(80 - 120)
1,2-Dichloroethane-d4	93	(72 - 127)
	98	(72 - 127)
4-Bromofluorobenzene	102	(79 - 119)
	101	(79 - 119)
Toluene-d8	103	(79 - 119)
	100	(79 - 119)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: D1C220263 **Work Order #...:** EADMR1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1D040000-154 EADMR1AD-LCSD
Prep Date.....: 04/03/01 **Analysis Date..:** 04/03/01
Prep Batch #...: 1094154 **Analysis Time..:** 10:04
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	**10.0**	**8.66**	**ug/L**	**87**		**SW846 8260B**
	10.0	**9.40**	**ug/L**	**94**	**8.2**	**SW846 8260B**
Chlorobenzene	**10.0**	**8.43**	**ug/L**	**84**		**SW846 8260B**
	10.0	**8.80**	**ug/L**	**88**	**4.3**	**SW846 8260B**
1,1-Dichloroethene	**10.0**	**8.61**	**ug/L**	**86**		**SW846 8260B**
	10.0	**8.81**	**ug/L**	**88**	**2.3**	**SW846 8260B**
Toluene	**10.0**	**8.87**	**ug/L**	**89**		**SW846 8260B**
	10.0	**9.09**	**ug/L**	**91**	**2.4**	**SW846 8260B**
Trichloroethene	**10.0**	**9.11**	**ug/L**	**91**		**SW846 8260B**
	10.0	**9.76**	**ug/L**	**98**	**6.9**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(80 - 120)
	86	(80 - 120)
1,2-Dichloroethane-d4	93	(72 - 127)
	98	(72 - 127)
4-Bromofluorobenzene	102	(79 - 119)
	101	(79 - 119)
Toluene-d8	103	(79 - 119)
	100	(79 - 119)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: D1C220263 **Work Order #...:** EADMR1AA **Matrix.....:** WATER
MB Lot-Sample #: D1D040000-154

Prep Date.....: 04/03/01 **Analysis Time..:** 10:55

Analysis Date..: 04/03/01 **Prep Batch #...:** 1094154
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	10	ug/L	SW846 8260B
Acetonitrile	ND	20	ug/L	SW846 8260B
Acrylonitrile	ND	20	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
Carbon disulfide	ND	1.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroprene	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	2.0	ug/L	SW846 8260B
Allyl chloride	ND	2.0	ug/L	SW846 8260B
Dibromomethane	ND	1.0	ug/L	SW846 8260B
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	2.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
1,4-Dioxane	ND	200	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Iodomethane	ND	1.0	ug/L	SW846 8260B
Isobutyl alcohol	ND	50	ug/L	SW846 8260B
Methacrylonitrile	ND	10	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
Methyl methacrylate	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Propionitrile	ND	4.0	ug/L	SW846 8260B

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: D1C220263 **Work Order #...:** EADMR1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
1,2,3-Trichloropropane	ND	1.0	ug/L	SW846 8260B
Vinyl acetate	ND	2.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	SW846 8260B
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	SW846 8260B
2-Butanone (MEK)	ND	5.0	ug/L	SW846 8260B
Acrolein	ND	20	ug/L	SW846 8260B
Ethyl methacrylate	ND	1.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(80 - 120)
1,2-Dichloroethane-d4	95	(72 - 127)
4-Bromofluorobenzene	102	(79 - 119)
Toluene-d8	103	(79 - 119)

NOTE(S):

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

US GEOLOGICAL SURVEY

Method Blank Report

GC/MS Volatiles

Lot-Sample #: D1D040000-154 B **Work Order #:** EADMR1AA **Matrix:** WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		3.4 J	M	15.03	ug/L
Unknown		4.1 J	M	16.933	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D1C220263 **Work Order #...:** DXTJP1DV-MS **Matrix.....:** WG
MS Lot-Sample #: D1C220263-006 DXTJP1DW-MSD
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 04/03/01 **Analysis Date..:** 04/03/01
Prep Batch #...: 1094154 **Analysis Time..:** 14:52
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**95**	**(79 - 119)**			**SW846 8260B**
	92	**(79 - 119)**	**3.0**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**91**	**(76 - 116)**			**SW846 8260B**
	88	**(76 - 116)**	**3.4**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**94**	**(79 - 119)**			**SW846 8260B**
	93	**(79 - 119)**	**0.93**	**(0-20)**	**SW846 8260B**
Toluene	**94**	**(75 - 122)**			**SW846 8260B**
	92	**(75 - 122)**	**2.1**	**(0-20)**	**SW846 8260B**
Trichloroethene	**98**	**(81 - 121)**			**SW846 8260B**
	93	**(81 - 121)**	**5.6**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(80 - 120)
	86	(80 - 120)
1,2-Dichloroethane-d4	97	(72 - 127)
	96	(72 - 127)
4-Bromofluorobenzene	102	(79 - 119)
	104	(79 - 119)
Toluene-d8	99	(79 - 119)
	101	(79 - 119)

NOTE(S):

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

Bold pr :t denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: D1C220263 **Work Order #...:** DXTJP1DV-MS **Matrix.....:** WG
MS Lot-Sample #: D1C220263-006 DXTJP1DW-MSD
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 04/03/01 **Analysis Date..:** 04/03/01
Prep Batch #...: 1094154 **Analysis Time..:** 14:52
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	**ND**	**10.0**	**9.51**	**ug/L**	**95**		**SW846 8260B**
	ND	**10.0**	**9.23**	**ug/L**	**92**	**3.0**	**SW846 8260B**
Chlorobenzene	**ND**	**10.0**	**9.13**	**ug/L**	**91**		**SW846 8260B**
	ND	**10.0**	**8.83**	**ug/L**	**88**	**3.4**	**SW846 8260B**
1,1-Dichloroethene	**ND**	**10.0**	**9.37**	**ug/L**	**94**		**SW846 8260B**
	ND	**10.0**	**9.28**	**ug/L**	**93**	**0.93**	**SW846 8260B**
Toluene	**ND**	**10.0**	**9.35**	**ug/L**	**94**		**SW846 8260B**
	ND	**10.0**	**9.16**	**ug/L**	**92**	**2.1**	**SW846 8260B**
Trichloroethene	**ND**	**10.0**	**9.79**	**ug/L**	**98**		**SW846 8260B**
	ND	**10.0**	**9.25**	**ug/L**	**93**	**5.6**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
ibromofluoromethane	87	(80 - 120)
	86	(80 - 120)
1,2-Dichloroethane-d4	97	(72 - 127)
	96	(72 - 127)
4-Bromofluorobenzene	102	(79 - 119)
	104	(79 - 119)
Toluene-d8	99	(79 - 119)
	101	(79 - 119)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: D1C220263 Work Order #...: DXVTG1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: D1C230000-235 DXVTG1AD-LCSD
Prep Date.....: 03/23/01 Analysis Date..: 03/26/01
Prep Batch #...: 1082235 Analysis Time..: 19:17
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Phenol	74	(50 - 90)			SW846 8270C
	80	(50 - 90)	6.9	(0-31)	SW846 8270C
2-Chlorophenol	77	(52 - 92)			SW846 8270C
	81	(52 - 92)	5.9	(0-33)	SW846 8270C
1,4-Dichlorobenzene	56	(38 - 87)			SW846 8270C
	67	(38 - 87)	19	(0-37)	SW846 8270C
N-Nitrosodi-n-propyl-amine	72	(48 - 88)			SW846 8270C
	77	(48 - 88)	6.8	(0-33)	SW846 8270C
1,2,4-Trichloro-benzene	60	(43 - 88)			SW846 8270C
	70	(43 - 88)	15	(0-35)	SW846 8270C
Acenaphthene	73	(52 - 93)			SW846 8270C
	76	(52 - 93)	4.8	(0-28)	SW846 8270C
4-Nitrophenol	54	(41 - 108)			SW846 8270C
	64	(41 - 108)	16	(0-40)	SW846 8270C
2,4-Dinitrotoluene	77	(56 - 107)			SW846 8270C
	83	(56 - 107)	6.8	(0-30)	SW846 8270C
Pentachlorophenol	69	(42 - 105)			SW846 8270C
	78	(42 - 105)	12	(0-34)	SW846 8270C
Pyrene	63	(54 - 104)			SW846 8270C
	64	(54 - 104)	0.67	(0-31)	SW846 8270C
4-Chloro-3-methylphenol	76	(55 - 95)			SW846 8270C
	77	(55 - 95)	0.79	(0-34)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	75	(37 - 90)
	80	(37 - 90)
Phenol-d5	76	(41 - 91)
	80	(41 - 91)
Nitrobenzene-d5	74	(43 - 94)
	79	(43 - 94)
2-Fluorobiphenyl	74	(33 - 90)
	76	(33 - 90)
2,4,6-Tribromophenol	77	(42 - 103)
	80	(42 - 103)
Terphenyl-d14	68	(29 - 112)
	68	(29 - 112)

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXVTG1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C230000-235 DXVTG1AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: D1C220263 Work Order #...: DXVTG1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: D1C230000-235 DXVTG1AD-LCSD
Prep Date.....: 03/23/01 Analysis Date..: 03/26/01
Prep Batch #...: 1082235 Analysis Time..: 19:17
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Phenol	150	111	ug/L	74		SW846 8270C
	150	119	ug/L	80	6.9	SW846 8270C
2-Chlorophenol	150	115	ug/L	77		SW846 8270C
	150	122	ug/L	81	5.9	SW846 8270C
1,4-Dichlorobenzene	100	55.6	ug/L	56		SW846 8270C
	100	67.1	ug/L	67	19	SW846 8270C
N-Nitrosodi-n-propyl-amine	100	71.7	ug/L	72		SW846 8270C
	100	76.8	ug/L	77	6.8	SW846 8270C
1,2,4-Trichloro-benzene	100	60.4	ug/L	60		SW846 8270C
	100	69.9	ug/L	70	15	SW846 8270C
Acenaphthene	100	72.9	ug/L	73		SW846 8270C
	100	76.5	ug/L	76	4.8	SW846 8270C
4-Nitrophenol	150	81.5	ug/L	54		SW846 8270C
	150	95.6	ug/L	64	16	SW846 8270C
2,4-Dinitrotoluene	100	77.4	ug/L	77		SW846 8270C
	100	82.9	ug/L	83	6.8	SW846 8270C
Pentachlorophenol	150	104	ug/L	69		SW846 8270C
	150	117	ug/L	78	12	SW846 8270C
Pyrene	100	63.3	ug/L	63		SW846 8270C
	100	63.7	ug/L	64	0.67	SW846 8270C
4-Chloro-3-methylphenol	150	114	ug/L	76		SW846 8270C
	150	115	ug/L	77	0.79	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	75	(37 - 90)
	80	(37 - 90)
Phenol-d5	76	(41 - 91)
	80	(41 - 91)
Nitrobenzene-d5	74	(43 - 94)
	79	(43 - 94)
2-Fluorobiphenyl	74	(33 - 90)
	76	(33 - 90)
2,4,6-Tribromophenol	77	(42 - 103)
	80	(42 - 103)
Terphenyl-d14	68	(29 - 112)
	68	(29 - 112)

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXVTG1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C230000-235 DXVTG1AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXVTG1AA **Matrix.....:** WATER
MB Lot-Sample #: D1C230000-235

Prep Date.....: 03/23/01 **Analysis Time..:** 18:49

Analysis Date..: 03/26/01 **Prep Batch #...:** 1082235
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Di-n-butyl phthalate	ND	10	ug/L	SW846 8270C
1,3-Dichlorobenzene	ND	10	ug/L	SW846 8270C
Acenaphthylene	ND	10	ug/L	SW846 8270C
Phenol	ND	10	ug/L	SW846 8270C
2-Chlorophenol	ND	10	ug/L	SW846 8270C
bis(2-Chloroethyl)-ether	ND	10	ug/L	SW846 8270C
bis(2-Chloroethoxy) methane	ND	10	ug/L	SW846 8270C
1,4-Dichlorobenzene	ND	10	ug/L	SW846 8270C
1,2-Dichlorobenzene	ND	10	ug/L	SW846 8270C
2-Methylphenol	ND	10	ug/L	SW846 8270C
bis(2-Ethylhexyl) phthalate	ND	10	ug/L	SW846 8270C
2,2'-oxybis(1-Chloropropa	ND	10	ug/L	SW846 8270C
4-Methylphenol	ND	10	ug/L	SW846 8270C
N-Nitrosodi-n-propyl-amine	ND	10	ug/L	SW846 8270C
Hexachloroethane	ND	10	ug/L	SW846 8270C
Nitrobenzene	ND	10	ug/L	SW846 8270C
Isophorone	ND	10	ug/L	SW846 8270C
2-Nitrophenol	ND	10	ug/L	SW846 8270C
2,4-Dimethylphenol	ND	10	ug/L	SW846 8270C
2,4-Dichlorophenol	ND	10	ug/L	SW846 8270C
1,2,4-Trichloro-benzene	ND	10	ug/L	SW846 8270C
Naphthalene	ND	10	ug/L	SW846 8270C
4-Chloroaniline	ND	10	ug/L	SW846 8270C
Hexachlorobutadiene	ND	10	ug/L	SW846 8270C
2-Methylnaphthalene	ND	10	ug/L	SW846 8270C
Hexachlorocyclopenta-diene	ND	50	ug/L	SW846 8270C
2,4,5-Trichloro-phenol	ND	10	ug/L	SW846 8270C
2,4,6-Trichloro-phenol	ND	10	ug/L	SW846 8270C
2-Chloronaphthalene	ND	10	ug/L	SW846 8270C
Dimethyl phthalate	ND	10	ug/L	SW846 8270C
Acenaphthene	ND	10	ug/L	SW846 8270C
3-Nitroaniline	ND	50	ug/L	SW846 8270C
2,4-Dinitrophenol	ND	50	ug/L	SW846 8270C

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXVTG1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
4-Nitrophenol	ND	50	ug/L	SW846 8270C
Dibenzofuran	ND	10	ug/L	SW846 8270C
2,4-Dinitrotoluene	ND	10	ug/L	SW846 8270C
2,6-Dinitrotoluene	ND	10	ug/L	SW846 8270C
Diethyl phthalate	ND	10	ug/L	SW846 8270C
4-Chlorophenyl phenyl ether	ND	10	ug/L	SW846 8270C
Fluorene	ND	10	ug/L	SW846 8270C
4-Nitroaniline	ND	50	ug/L	SW846 8270C
4,6-Dinitro-2-methylphenol	ND	50	ug/L	SW846 8270C
N-Nitrosodiphenylamine	ND	10	ug/L	SW846 8270C
4-Bromophenyl phenyl ether	ND	10	ug/L	SW846 8270C
Hexachlorobenzene	ND	10	ug/L	SW846 8270C
Pentachlorophenol	ND	50	ug/L	SW846 8270C
Phenanthrene	ND	10	ug/L	SW846 8270C
Anthracene	ND	10	ug/L	SW846 8270C
Fluoranthene	ND	10	ug/L	SW846 8270C
Pyrene	ND	10	ug/L	SW846 8270C
Butyl benzyl phthalate	ND	10	ug/L	SW846 8270C
3,3'-Dichlorobenzidine	ND	50	ug/L	SW846 8270C
Benzo(a)anthracene	ND	10	ug/L	SW846 8270C
Chrysene	ND	10	ug/L	SW846 8270C
Di-n-octyl phthalate	ND	10	ug/L	SW846 8270C
Benzo(b)fluoranthene	ND	10	ug/L	SW846 8270C
Benzo(k)fluoranthene	ND	10	ug/L	SW846 8270C
Benzo(a)pyrene	ND	10	ug/L	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	SW846 8270C
Dibenz(a,h)anthracene	ND	10	ug/L	SW846 8270C
Benzo(ghi)perylene	ND	10	ug/L	SW846 8270C
4-Chloro-3-methylphenol	ND	10	ug/L	SW846 8270C
2-Nitroaniline	ND	50	ug/L	SW846 8270C
Acetophenone	ND	10	ug/L	SW846 8270C
2-Acetylaminofluorene	ND	100	ug/L	SW846 8270C
4-Aminobiphenyl	ND	50	ug/L	SW846 8270C
Aniline	ND	10	ug/L	SW846 8270C
Aramite	ND	20	ug/L	SW846 8270C
Benzyl alcohol	ND	10	ug/L	SW846 8270C
2-sec-Butyl-4,6-dinitro-phenol	ND	20	ug/L	SW846 8270C
2,6-Dichlorophenol	ND	10	ug/L	SW846 8270C
4-Dimethylaminoazobenzene	ND	20	ug/L	SW846 8270C
7,12-Dimethylbenz(a)-anthracene	ND	20	ug/L	SW846 8270C

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXVTG1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
3,3'-Dimethylbenzidine	ND	20	ug/L	SW846 8270C
alpha,alpha-Dimethylphene	ND	50	ug/L	SW846 8270C
1,3-Dinitrobenzene	ND	10	ug/L	SW846 8270C
Diphenylamine	ND	10	ug/L	SW846 8270C
Ethyl methanesulfonate	ND	10	ug/L	SW846 8270C
Hexachloropropene	ND	100	ug/L	SW846 8270C
Isosafrole	ND	20	ug/L	SW846 8270C
Methapyrilene	ND	50	ug/L	SW846 8270C
3-Methylcholanthrene	ND	20	ug/L	SW846 8270C
Methyl methanesulfonate	ND	10	ug/L	SW846 8270C
3-Methylphenol	ND	10	ug/L	SW846 8270C
1,4-Naphthoquinone	ND	50	ug/L	SW846 8270C
1-Naphthylamine	ND	10	ug/L	SW846 8270C
2-Naphthylamine	ND	10	ug/L	SW846 8270C
N-Nitrosodi-n-butylamine	ND	10	ug/L	SW846 8270C
N-Nitrosodiethylamine	ND	10	ug/L	SW846 8270C
N-Nitrosodimethylamine	ND	10	ug/L	SW846 8270C
N-Nitrosomethylethylamine	ND	10	ug/L	SW846 8270C
N-Nitrosomorpholine	ND	10	ug/L	SW846 8270C
N-Nitrosopiperidine	ND	10	ug/L	SW846 8270C
N-Nitrosopyrrolidine	ND	10	ug/L	SW846 8270C
5-Nitro-o-toluidine	ND	20	ug/L	SW846 8270C
Pentachlorobenzene	ND	10	ug/L	SW846 8270C
Pentachloroethane	ND	50	ug/L	SW846 8270C
Pentachloronitrobenzene	ND	50	ug/L	SW846 8270C
Phenacetin	ND	20	ug/L	SW846 8270C
2-Picoline	ND	20	ug/L	SW846 8270C
Pronamide	ND	20	ug/L	SW846 8270C
Pyridine	ND	20	ug/L	SW846 8270C
Safrole	ND	20	ug/L	SW846 8270C
1,2,4,5-Tetrachloro-benzene	ND	10	ug/L	SW846 8270C
2,3,4,6-Tetrachlorophenol	ND	50	ug/L	SW846 8270C
2-Toluidine	ND	10	ug/L	SW846 8270C
1,3,5-Trinitrobenzene	ND	50	ug/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	76	(37 - 90)
Phenol-d5	76	(41 - 91)
Nitrobenzene-d5	74	(43 - 94)
2-Fluorobiphenyl	70	(33 - 90)
2,4,6-Tribromophenol	71	(42 - 103)
Terphenyl-d14	65	(29 - 112)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D1C220263 Work Order #...: DXVTG1AA Matrix.....: WATER

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: D1C220263 Work Order #...: DXTJP1DX-MS Matrix.....: WG
MS Lot-Sample #: D1C220263-006 DXTJP1D0-MSD
Date Sampled...: 03/21/01 11:50 Date Received..: 03/22/01
Prep Date.....: 03/23/01 Analysis Date..: 03/27/01
Prep Batch #...: 1082235 Analysis Time..: 05:02
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Phenol	72	(50 - 90)			SW846 8270C
	73	(50 - 90)	1.7	(0-31)	SW846 8270C
2-Chlorophenol	76	(52 - 92)			SW846 8270C
	75	(52 - 92)	0.30	(0-33)	SW846 8270C
1,4-Dichlorobenzene	69	(38 - 87)			SW846 8270C
	70	(38 - 87)	2.4	(0-37)	SW846 8270C
N-Nitrosodi-n-propyl-amine	68	(48 - 88)			SW846 8270C
	67	(48 - 88)	0.18	(0-33)	SW846 8270C
1,2,4-Trichloro-benzene	72	(43 - 88)			SW846 8270C
	75	(43 - 88)	3.4	(0-35)	SW846 8270C
Acenaphthene	74	(52 - 93)			SW846 8270C
	75	(52 - 93)	1.4	(0-28)	SW846 8270C
4-Nitrophenol	56	(41 - 108)			SW846 8270C
	65	(41 - 108)	16	(0-40)	SW846 8270C
2,4-Dinitrotoluene	82	(56 - 107)			SW846 8270C
	87	(56 - 107)	6.2	(0-30)	SW846 8270C
Pentachlorophenol	75	(42 - 105)			SW846 8270C
	81	(42 - 105)	7.7	(0-34)	SW846 8270C
Pyrene	63	(54 - 104)			SW846 8270C
	69	(54 - 104)	10	(0-31)	SW846 8270C
4-Chloro-3-methylphenol	76	(55 - 95)			SW846 8270C
	75	(55 - 95)	1.5	(0-34)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	76	(37 - 90)
	74	(37 - 90)
Phenol-d5	75	(41 - 91)
	74	(41 - 91)
Nitrobenzene-d5	74	(43 - 94)
	73	(43 - 94)
2-Fluorobiphenyl	75	(33 - 90)
	74	(33 - 90)
2,4,6-Tribromophenol	83	(42 - 103)
	82	(42 - 103)

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXTJP1DX-MS **Matrix.....:** WG
MS Lot-Sample #: D1C220263-006 DXTJP1D0-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	67	(29 - 112)
	73	(29 - 112)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: D1C220263 Work Order #...: DXTJP1DX-MS Matrix.....: WG
MS Lot-Sample #: D1C220263-006 DXTJP1D0-MSD
Date Sampled...: 03/21/01 11:50 Date Received..: 03/22/01
Prep Date.....: 03/23/01 Analysis Date..: 03/27/01
Prep Batch #...: 1082235 Analysis Time..: 05:02
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Phenol	ND	146	105	ug/L	72		SW846 8270C
	ND	145	106	ug/L	73	1.7	SW846 8270C
2-Chlorophenol	ND	146	111	ug/L	76		SW846 8270C
	ND	145	109	ug/L	75	0.30	SW846 8270C
1,4-Dichlorobenzene	ND	97.6	67.0	ug/L	69		SW846 8270C
	ND	96.5	67.8	ug/L	70	2.4	SW846 8270C
N-Nitrosodi-n-propyl-amine	ND	97.6	65.9	ug/L	68		SW846 8270C
	ND	96.5	65.0	ug/L	67	0.18	SW846 8270C
1,2,4-Trichloro-benzene	ND	97.6	70.4	ug/L	72		SW846 8270C
	ND	96.5	72.1	ug/L	75	3.4	SW846 8270C
Acenaphthene	ND	97.6	71.9	ug/L	74		SW846 8270C
	ND	96.5	72.2	ug/L	75	1.4	SW846 8270C
4-Nitrophenol	ND	146	81.2	ug/L	56		SW846 8270C
	ND	145	94.5	ug/L	65	16	SW846 8270C
2,4-Dinitrotoluene	ND	97.6	80.1	ug/L	82		SW846 8270C
	ND	96.5	84.3	ug/L	87	6.2	SW846 8270C
Pentachlorophenol	ND	146	109	ug/L	75		SW846 8270C
	ND	145	117	ug/L	81	7.7	SW846 8270C
Pyrene	ND	97.6	61.1	ug/L	63		SW846 8270C
	ND	96.5	67.0	ug/L	69	10	SW846 8270C
4-Chloro-3-methylphenol	ND	146	112	ug/L	76		SW846 8270C
	ND	145	109	ug/L	75	1.5	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	76	(37 - 90)
	74	(37 - 90)
Phenol-d5	75	(41 - 91)
	74	(41 - 91)
Nitrobenzene-d5	74	(43 - 94)
	73	(43 - 94)
2-Fluorobiphenyl	75	(33 - 90)
	74	(33 - 90)
2,4,6-Tribromophenol	83	(42 - 103)
	82	(42 - 103)

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXTJP1DX-MS **Matrix.....:** WG
MS Lot-Sample #: D1C220263-006 DXTJP1D0-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	67	(29 - 112)
	73	(29 - 112)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: D1C220263 Work Order #...: DXX7Q1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: D1C260000-169 DXX7Q1AD-LCSD
Prep Date.....: 03/26/01 Analysis Date..: 03/28/01
Prep Batch #...: 1085169 Analysis Time..: 17:35
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Phenol	80	(50 - 90)			SW846 8270C
	81	(50 - 90)	1.0	(0-31)	SW846 8270C
2-Chlorophenol	79	(52 - 92)			SW846 8270C
	80	(52 - 92)	2.1	(0-33)	SW846 8270C
1,4-Dichlorobenzene	63	(38 - 87)			SW846 8270C
	57	(38 - 87)	10	(0-37)	SW846 8270C
N-Nitrosodi-n-propyl-amine	77	(48 - 88)			SW846 8270C
	83	(48 - 88)	8.5	(0-33)	SW846 8270C
1,2,4-Trichloro-benzene	65	(43 - 88)			SW846 8270C
	59	(43 - 88)	10	(0-35)	SW846 8270C
Acenaphthene	76	(52 - 93)			SW846 8270C
	76	(52 - 93)	0.25	(0-28)	SW846 8270C
4-Nitrophenol	122 a	(41 - 108)			SW846 8270C
	114 a	(41 - 108)	6.9	(0-40)	SW846 8270C
2,4-Dinitrotoluene	96	(56 - 107)			SW846 8270C
	102	(56 - 107)	6.2	(0-30)	SW846 8270C
Pentachlorophenol	100	(42 - 105)			SW846 8270C
	103	(42 - 105)	2.5	(0-34)	SW846 8270C
Pyrene	79	(54 - 104)			SW846 8270C
	83	(54 - 104)	5.0	(0-31)	SW846 8270C
4-Chloro-3-methylphenol	90	(55 - 95)			SW846 8270C
	92	(55 - 95)	2.4	(0-34)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	80	(37 - 90)
	83	(37 - 90)
Phenol-d5	83	(41 - 91)
	85	(41 - 91)
Nitrobenzene-d5	82	(43 - 94)
	85	(43 - 94)
2-Fluorobiphenyl	68	(33 - 90)
	71	(33 - 90)
2,4,6-Tribromophenol	96	(42 - 103)
	92	(42 - 103)
Terphenyl-d14	82	(29 - 112)
	85	(29 - 112)

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXX7Q1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C260000-169 DXX7Q1AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: D1C220263 Work Order #...: DXX7Q1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: D1C260000-169 DXX7Q1AD-LCSD
Prep Date.....: 03/26/01 Analysis Date..: 03/28/01
Prep Batch #...: 1085169 Analysis Time..: 17:35
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Phenol	150	120	ug/L	80		SW846 8270C
	150	121	ug/L	81	1.0	SW846 8270C
2-Chlorophenol	150	118	ug/L	79		SW846 8270C
	150	120	ug/L	80	2.1	SW846 8270C
1,4-Dichlorobenzene	100	63.1	ug/L	63		SW846 8270C
	100	56.9	ug/L	57	10	SW846 8270C
N-Nitrosodi-n-propyl-amine	100	76.5	ug/L	77		SW846 8270C
	100	83.3	ug/L	83	8.5	SW846 8270C
1,2,4-Trichloro-benzene	100	65.3	ug/L	65		SW846 8270C
	100	59.0	ug/L	59	10	SW846 8270C
Acenaphthene	100	76.0	ug/L	76		SW846 8270C
	100	75.9	ug/L	76	0.25	SW846 8270C
4-Nitrophenol	150	184 a	ug/L	122		SW846 8270C
	150	171 a	ug/L	114	6.9	SW846 8270C
2,4-Dinitrotoluene	100	96.1	ug/L	96		SW846 8270C
	100	102	ug/L	102	6.2	SW846 8270C
Pentachlorophenol	150	150	ug/L	100		SW846 8270C
	150	154	ug/L	103	2.5	SW846 8270C
Pyrene	100	78.6	ug/L	79		SW846 8270C
	100	82.6	ug/L	83	5.0	SW846 8270C
4-Chloro-3-methylphenol	150	135	ug/L	90		SW846 8270C
	150	138	ug/L	92	2.4	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	80	(37 - 90)
	83	(37 - 90)
Phenol-d5	83	(41 - 91)
	85	(41 - 91)
Nitrobenzene-d5	82	(43 - 94)
	85	(43 - 94)
2-Fluorobiphenyl	68	(33 - 90)
	71	(33 - 90)
2,4,6-Tribromophenol	96	(42 - 103)
	92	(42 - 103)
Terphenyl-d14	82	(29 - 112)
	85	(29 - 112)

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXX7Q1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C260000-169 DXX7Q1AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXX7Q1AA **Matrix.....:** WATER
MB Lot-Sample #: D1C260000-169

Prep Date.....: 03/26/01 **Analysis Time..:** 17:12

Analysis Date..: 03/28/01 **Prep Batch #...:** 1085169
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Di-n-butyl phthalate	ND	10	ug/L	SW846 8270C
1,3-Dichlorobenzene	ND	10	ug/L	SW846 8270C
Acenaphthylene	ND	10	ug/L	SW846 8270C
Phenol	ND	10	ug/L	SW846 8270C
2-Chlorophenol	ND	10	ug/L	SW846 8270C
bis(2-Chloroethyl)-ether	ND	10	ug/L	SW846 8270C
bis(2-Chloroethoxy) methane	ND	10	ug/L	SW846 8270C
1,4-Dichlorobenzene	ND	10	ug/L	SW846 8270C
1,2-Dichlorobenzene	ND	10	ug/L	SW846 8270C
2-Methylphenol	ND	10	ug/L	SW846 8270C
bis(2-Ethylhexyl) phthalate	ND	10	ug/L	SW846 8270C
2,2'-oxybis(1-Chloropropa	ND	10	ug/L	SW846 8270C
4-Methylphenol	ND	10	ug/L	SW846 8270C
N-Nitrosodi-n-propyl-amine	ND	10	ug/L	SW846 8270C
Hexachloroethane	ND	10	ug/L	SW846 8270C
Nitrobenzene	ND	10	ug/L	SW846 8270C
Isophorone	ND	10	ug/L	SW846 8270C
2-Nitrophenol	ND	10	ug/L	SW846 8270C
2,4-Dimethylphenol	ND	10	ug/L	SW846 8270C
2,4-Dichlorophenol	ND	10	ug/L	SW846 8270C
1,2,4-Trichloro-benzene	ND	10	ug/L	SW846 8270C
Naphthalene	ND	10	ug/L	SW846 8270C
4-Chloroaniline	ND	10	ug/L	SW846 8270C
Hexachlorobutadiene	ND	10	ug/L	SW846 8270C
2-Methylnaphthalene	ND	10	ug/L	SW846 8270C
Hexachlorocyclopenta-diene	ND	50	ug/L	SW846 8270C
2,4,5-Trichloro-phenol	ND	10	ug/L	SW846 8270C
2,4,6-Trichloro-phenol	ND	10	ug/L	SW846 8270C
2-Chloronaphthalene	ND	10	ug/L	SW846 8270C
Dimethyl phthalate	ND	10	ug/L	SW846 8270C
Acenaphthene	ND	10	ug/L	SW846 8270C
3-Nitroaniline	ND	50	ug/L	SW846 8270C
2,4-Dinitrophenol	ND	50	ug/L	SW846 8270C

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXX7Q1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
4-Nitrophenol	ND	50	ug/L	SW846 8270C
Dibenzofuran	ND	10	ug/L	SW846 8270C
2,4-Dinitrotoluene	ND	10	ug/L	SW846 8270C
2,6-Dinitrotoluene	ND	10	ug/L	SW846 8270C
Diethyl phthalate	ND	10	ug/L	SW846 8270C
4-Chlorophenyl phenyl ether	ND	10	ug/L	SW846 8270C
Fluorene	ND	10	ug/L	SW846 8270C
4-Nitroaniline	ND	50	ug/L	SW846 8270C
4,6-Dinitro-2-methylphenol	ND	50	ug/L	SW846 8270C
N-Nitrosodiphenylamine	ND	10	ug/L	SW846 8270C
4-Bromophenyl phenyl ether	ND	10	ug/L	SW846 8270C
Hexachlorobenzene	ND	10	ug/L	SW846 8270C
Pentachlorophenol	ND	50	ug/L	SW846 8270C
Phenanthrene	ND	10	ug/L	SW846 8270C
Anthracene	ND	10	ug/L	SW846 8270C
Fluoranthene	ND	10	ug/L	SW846 8270C
Pyrene	ND	10	ug/L	SW846 8270C
Butyl benzyl phthalate	ND	10	ug/L	SW846 8270C
3,3'-Dichlorobenzidine	ND	50	ug/L	SW846 8270C
Benzo(a)anthracene	ND	10	ug/L	SW846 8270C
Chrysene	ND	10	ug/L	SW846 8270C
Di-n-octyl phthalate	ND	10	ug/L	SW846 8270C
Benzo(b)fluoranthene	ND	10	ug/L	SW846 8270C
Benzo(k)fluoranthene	ND	10	ug/L	SW846 8270C
Benzo(a)pyrene	ND	10	ug/L	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	SW846 8270C
Dibenz(a,h)anthracene	ND	10	ug/L	SW846 8270C
Benzo(ghi)perylene	ND	10	ug/L	SW846 8270C
4-Chloro-3-methylphenol	ND	10	ug/L	SW846 8270C
2-Nitroaniline	ND	50	ug/L	SW846 8270C
Acetophenone	ND	10	ug/L	SW846 8270C
2-Acetylaminofluorene	ND	100	ug/L	SW846 8270C
4-Aminobiphenyl	ND	50	ug/L	SW846 8270C
Aniline	ND	10	ug/L	SW846 8270C
Aramite	ND	20	ug/L	SW846 8270C
Benzyl alcohol	ND	10	ug/L	SW846 8270C
2-sec-Butyl-4,6-dinitro-phenol	ND	20	ug/L	SW846 8270C
2,6-Dichlorophenol	ND	10	ug/L	SW846 8270C
4-Dimethylaminoazobenzene	ND	20	ug/L	SW846 8270C
7,12-Dimethylbenz(a)-anthracene	ND	20	ug/L	SW846 8270C

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXX7Q1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
3,3'-Dimethylbenzidine	ND	20	ug/L	SW846 8270C
alpha,alpha-Dimethylphene	ND	50	ug/L	SW846 8270C
1,3-Dinitrobenzene	ND	10	ug/L	SW846 8270C
Diphenylamine	ND	10	ug/L	SW846 8270C
Ethyl methanesulfonate	ND	10	ug/L	SW846 8270C
Hexachloropropene	ND	100	ug/L	SW846 8270C
Isosafrole	ND	20	ug/L	SW846 8270C
Methapyrilene	ND	50	ug/L	SW846 8270C
3-Methylcholanthrene	ND	20	ug/L	SW846 8270C
Methyl methanesulfonate	ND	10	ug/L	SW846 8270C
3-Methylphenol	ND	10	ug/L	SW846 8270C
1,4-Naphthoquinone	ND	50	ug/L	SW846 8270C
1-Naphthylamine	ND	10	ug/L	SW846 8270C
2-Naphthylamine	ND	10	ug/L	SW846 8270C
N-Nitrosodi-n-butylamine	ND	10	ug/L	SW846 8270C
N-Nitrosodiethylamine	ND	10	ug/L	SW846 8270C
N-Nitrosodimethylamine	ND	10	ug/L	SW846 8270C
N-Nitrosomethylethylamine	ND	10	ug/L	SW846 8270C
N-Nitrosomorpholine	ND	10	ug/L	SW846 8270C
N-Nitrosopiperidine	ND	10	ug/L	SW846 8270C
N-Nitrosopyrrolidine	ND	10	ug/L	SW846 8270C
5-Nitro-o-toluidine	ND	20	ug/L	SW846 8270C
Pentachlorobenzene	ND	10	ug/L	SW846 8270C
Pentachloroethane	ND	50	ug/L	SW846 8270C
Pentachloronitrobenzene	ND	50	ug/L	SW846 8270C
Phenacetin	ND	20	ug/L	SW846 8270C
2-Picoline	ND	20	ug/L	SW846 8270C
Pronamide	ND	20	ug/L	SW846 8270C
Pyridine	ND	20	ug/L	SW846 8270C
Safrole	ND	20	ug/L	SW846 8270C
1,2,4,5-Tetrachloro-benzene	ND	10	ug/L	SW846 8270C
2,3,4,6-Tetrachlorophenol	ND	50	ug/L	SW846 8270C
2-Toluidine	ND	10	ug/L	SW846 8270C
1,3,5-Trinitrobenzene	ND	50	ug/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	85	(37 - 90)
Phenol-d5	82	(41 - 91)
Nitrobenzene-d5	86	(43 - 94)
2-Fluorobiphenyl	76	(33 - 90)
2,4,6-Tribromophenol	93	(42 - 103)
Terphenyl-d14	84	(29 - 112)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXX7Q1AA **Matrix.....:** WATER

NOTE(S):

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

US GEOLOGICAL SURVEY

Method Blank Report

GC/MS Semivolatiles

Lot-Sample #: D1C260000-169 B **Work Order #:** DXX7Q1AA **Matrix:** WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/L

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXX851AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C260000-198 DXX851AD-LCSD
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085198 **Analysis Time..:** 08:58
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aldrin	**89**	**(55 - 137)**			**SW846 8081A**
	87	**(55 - 137)**	**2.1**	**(0-30)**	**SW846 8081A**
gamma-BHC (Lindane)	**99**	**(68 - 142)**			**SW846 8081A**
	94	**(68 - 142)**	**5.2**	**(0-30)**	**SW846 8081A**
4,4'-DDT	**97**	**(68 - 147)**			**SW846 8081A**
	91	**(68 - 147)**	**5.8**	**(0-30)**	**SW846 8081A**
Dieldrin	**100**	**(68 - 146)**			**SW846 8081A**
	95	**(68 - 146)**	**5.6**	**(0-30)**	**SW846 8081A**
Endrin	**99**	**(66 - 143)**			**SW846 8081A**
	93	**(66 - 143)**	**6.1**	**(0-30)**	**SW846 8081A**
Heptachlor	**89**	**(59 - 143)**			**SW846 8081A**
	87	**(59 - 143)**	**2.3**	**(0-30)**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	110	(15 - 162)
	106	(15 - 162)
Tetrachloro-m-xylene	92	(49 - 133)
	93	(49 - 133)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXX851AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C260000-198 DXX851AD-LCSD
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085198 **Analysis Time..:** 08:58
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Aldrin	**0.500**	**0.444**	**ug/L**	**89**		**SW846 8081A**
	0.500	**0.434**	**ug/L**	**87**	**2.1**	**SW846 8081A**
gamma-BHC (Lindane)	**0.500**	**0.497**	**ug/L**	**99**		**SW846 8081A**
	0.500	**0.472**	**ug/L**	**94**	**5.2**	**SW846 8081A**
4,4'-DDT	**0.500**	**0.483**	**ug/L**	**97**		**SW846 8081A**
	0.500	**0.456**	**ug/L**	**91**	**5.8**	**SW846 8081A**
Dieldrin	**0.500**	**0.501**	**ug/L**	**100**		**SW846 8081A**
	0.500	**0.473**	**ug/L**	**95**	**5.6**	**SW846 8081A**
Endrin	**0.500**	**0.495**	**ug/L**	**99**		**SW846 8081A**
	0.500	**0.465**	**ug/L**	**93**	**6.1**	**SW846 8081A**
Heptachlor	**0.500**	**0.447**	**ug/L**	**89**		**SW846 8081A**
	0.500	**0.437**	**ug/L**	**87**	**2.3**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	110	(15 - 162)
	106	(15 - 162)
Tetrachloro-m-xylene	92	(49 - 133)
	93	(49 - 133)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXX851AA **Matrix.....:** WATER
MB Lot-Sample #: D1C260000-198

Prep Date.....: 03/26/01 **Analysis Time..:** 08:29

Analysis Date..: 03/28/01 **Prep Batch #...:** 1085198
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Diallate	ND	1.0	ug/L	SW846 8081A
Isodrin	ND	0.10	ug/L	SW846 8081A
Kepone	ND	1.0	ug/L	SW846 8081A
Aldrin	ND	0.050	ug/L	SW846 8081A
alpha-BHC	ND	0.050	ug/L	SW846 8081A
beta-BHC	ND	0.050	ug/L	SW846 8081A
delta-BHC	ND	0.050	ug/L	SW846 8081A
gamma-BHC (Lindane)	ND	0.050	ug/L	SW846 8081A
alpha-Chlordane	ND	0.050	ug/L	SW846 8081A
gamma-Chlordane	ND	0.050	ug/L	SW846 8081A
4,4'-DDD	ND	0.050	ug/L	SW846 8081A
4,4'-DDE	ND	0.050	ug/L	SW846 8081A
4,4'-DDT	ND	0.050	ug/L	SW846 8081A
Dieldrin	ND	0.050	ug/L	SW846 8081A
Endosulfan I	ND	0.050	ug/L	SW846 8081A
Endosulfan II	ND	0.050	ug/L	SW846 8081A
Endosulfan sulfate	ND	0.050	ug/L	SW846 8081A
Endrin	ND	0.050	ug/L	SW846 8081A
Endrin aldehyde	ND	0.050	ug/L	SW846 8081A
Heptachlor	ND	0.050	ug/L	SW846 8081A
Heptachlor epoxide	ND	0.050	ug/L	SW846 8081A
Methoxychlor	ND	0.10	ug/L	SW846 8081A
Toxaphene	ND	2.0	ug/L	SW846 8081A
Endrin ketone	ND	0.050	ug/L	SW846 8081A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	104	(15 - 162)
Tetrachloro-m-xylene	85	(49 - 133)

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: D1C220263 Work Order #...: DXTJP1D1-MS Matrix.....: WG
MS Lot-Sample #: D1C220263-006 DXTJP1D2-MSD
Date Sampled...: 03/21/01 11:50 Date Received..: 03/22/01
Prep Date.....: 03/26/01 Analysis Date..: 03/28/01
Prep Batch #...: 1085198 Analysis Time..: 13:25
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aldrin	**95**	**(55 - 137)**			**SW846 8081A**
	83	**(55 - 137)**	**13**	**(0-30)**	**SW846 8081A**
gamma-BHC (Lindane)	**106**	**(68 - 142)**			**SW846 8081A**
	95	**(68 - 142)**	**11**	**(0-30)**	**SW846 8081A**
4,4'-DDT	**100**	**(68 - 147)**			**SW846 8081A**
	92	**(68 - 147)**	**7.9**	**(0-30)**	**SW846 8081A**
Dieldrin	**101**	**(68 - 146)**			**SW846 8081A**
	90	**(68 - 146)**	**11**	**(0-30)**	**SW846 8081A**
Endrin	**98**	**(66 - 143)**			**SW846 8081A**
	84	**(66 - 143)**	**16**	**(0-30)**	**SW846 8081A**
Heptachlor	**93**	**(59 - 143)**			**SW846 8081A**
	83	**(59 - 143)**	**11**	**(0-30)**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	111	(15 - 162)
	101	(15 - 162)
Tetrachloro-m-xylene	101	(49 - 133)
	84	(49 - 133)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: D1C220263 Work Order #...: DXTJP1D1-MS Matrix.....: WG
MS Lot-Sample #: D1C220263-006 DXTJP1D2-MSD
Date Sampled...: 03/21/01 11:50 Date Received..: 03/22/01
Prep Date.....: 03/26/01 Analysis Date..: 03/28/01
Prep Batch #...: 1085198 Analysis Time..: 13:25
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Aldrin	ND	0.504	0.476	ug/L	95		SW846 8081A
	ND	0.496	0.414	ug/L	83	13	SW846 8081A
gamma-BHC (Lindane)	ND	0.504	0.534	ug/L	106		SW846 8081A
	ND	0.496	0.473	ug/L	95	11	SW846 8081A
4,4'-DDT	ND	0.504	0.503	ug/L	100		SW846 8081A
	ND	0.496	0.458	ug/L	92	7.9	SW846 8081A
Dieldrin	ND	0.504	0.508	ug/L	101		SW846 8081A
	ND	0.496	0.447	ug/L	90	11	SW846 8081A
Endrin	ND	0.504	0.493	ug/L	98		SW846 8081A
	ND	0.496	0.416	ug/L	84	16	SW846 8081A
Heptachlor	ND	0.504	0.468	ug/L	93		SW846 8081A
	ND	0.496	0.412	ug/L	83	11	SW846 8081A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	111	(15 - 162)
	101	(15 - 162)
Tetrachloro-m-xylene	101	(49 - 133)
	84	(49 - 133)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXX881AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C260000-201 DXX881AD-LCSD
Prep Date.....: 03/26/01 **Analysis Date..:** 03/27/01
Prep Batch #...: 1085201 **Analysis Time..:** 21:09
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aroclor 1016	**105**	**(73 - 123)**			**SW846 8082**
	97	**(73 - 123)**	**7.4**	**(0-20)**	**SW846 8082**
Aroclor 1260	**107**	**(77 - 120)**			**SW846 8082**
	100	**(77 - 120)**	**6.4**	**(0-20)**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	100	(52 - 129)
	96	(52 - 129)
Tetrachloro-m-xylene	99	(54 - 113)
	91	(54 - 113)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXX881AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C260000-201 DXX881AD-LCSD
Prep Date.....: 03/26/01 **Analysis Date..:** 03/27/01
Prep Batch #...: 1085201 **Analysis Time..:** 21:09
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Aroclor 1016	**2.00**	**2.09**	**ug/L**	**105**		**SW846 8082**
	2.00	**1.94**	**ug/L**	**97**	**7.4**	**SW846 8082**
Aroclor 1260	**2.00**	**2.14**	**ug/L**	**107**		**SW846 8082**
	2.00	**2.00**	**ug/L**	**100**	**6.4**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	100	(52 - 129)
	96	(52 - 129)
Tetrachloro-m-xylene	99	(54 - 113)
	91	(54 - 113)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXX881AA **Matrix.....:** WATER
MB Lot-Sample #: D1C260000-201

Prep Date.....: 03/26/01 **Analysis Time..:** 20:36

Analysis Date..: 03/27/01 **Prep Batch #...:** 1085201
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Aroclor 1016	ND	1.0	ug/L	SW846 8082
Aroclor 1221	ND	1.0	ug/L	SW846 8082
Aroclor 1232	ND	1.0	ug/L	SW846 8082
Aroclor 1242	ND	1.0	ug/L	SW846 8082
Aroclor 1248	ND	1.0	ug/L	SW846 8082
Aroclor 1254	ND	1.0	ug/L	SW846 8082
Aroclor 1260	ND	1.0	ug/L	SW846 8082

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	98	(52 - 129)
Tetrachloro-m-xylene	83	(54 - 113)

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXTJP1D3-MS **Matrix.....:** WG
MS Lot-Sample #: D1C220263-006 DXTJP1D4-MSD
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085201 **Analysis Time..:** 01:39
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aroclor 1016	**109**	**(73 - 123)**			**SW846 8082**
	105	**(73 - 123)**	**4.3**	**(0-20)**	**SW846 8082**
Aroclor 1260	**106**	**(77 - 120)**			**SW846 8082**
	111	**(77 - 120)**	**4.0**	**(0-20)**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	99	(52 - 129)
	105	(52 - 129)
Tetrachloro-m-xylene	98	(54 - 113)
	101	(54 - 113)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXTJP1D3-MS **Matrix.....:** WG
MS Lot-Sample #: D1C220263-006 DXTJP1D4-MSD
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085201 **Analysis Time..:** 01:39
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Aroclor 1016	**ND**	**2.16**	**2.36**	**ug/L**	**109**		**SW846 8082**
	ND	**2.25**	**2.36**	**ug/L**	**105**	**4.3**	**SW846 8082**
Aroclor 1260	**ND**	**2.16**	**2.30**	**ug/L**	**106**		**SW846 8082**
	ND	**2.25**	**2.49**	**ug/L**	**111**	**4.0**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	99	(52 - 129)
	105	(52 - 129)
Tetrachloro-m-xylene	98	(54 - 113)
	101	(54 - 113)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DX0NR1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C260000-329 DX0NR1AD-LCSD
Prep Date.....: 03/26/01 **Analysis Date..:** 03/29/01
Prep Batch #...: 1085329 **Analysis Time..:** 01:11
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2,4-D	**80**	**(20 - 133)**			**SW846 8151A**
	79	**(20 - 133)**	**1.4**	**(0-30)**	**SW846 8151A**
2,4,5-T	**85**	**(20 - 155)**			**SW846 8151A**
	83	**(20 - 155)**	**2.3**	**(0-30)**	**SW846 8151A**
2,4,5-TP (Silvex)	**88**	**(23 - 146)**			**SW846 8151A**
	85	**(23 - 146)**	**4.2**	**(0-30)**	**SW846 8151A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	87	(20 - 150)
	101	(20 - 150)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DX0NR1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C260000-329 DX0NR1AD-LCSD
Prep Date.....: 03/26/01 **Analysis Date..:** 03/29/01
Prep Batch #...: 1085329 **Analysis Time..:** 01:11
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
2,4-D	**8.00**	**6.43**	**ug/L**	**80**		**SW846 8151A**
	8.00	**6.34**	**ug/L**	**79**	**1.4**	**SW846 8151A**
2,4,5-T	**2.00**	**1.70**	**ug/L**	**85**		**SW846 8151A**
	2.00	**1.66**	**ug/L**	**83**	**2.3**	**SW846 8151A**
2,4,5-TP (Silvex)	**2.00**	**1.77**	**ug/L**	**88**		**SW846 8151A**
	2.00	**1.70**	**ug/L**	**85**	**4.2**	**SW846 8151A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	87	(20 - 150)
	101	(20 - 150)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DX0NR1AA **Matrix.....:** WATER
MB Lot-Sample #: D1C260000-329

Prep Date.....: 03/26/01 **Analysis Time..:** 00:36
Analysis Date..: 03/29/01 **Prep Batch #...:** 1085329
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
2,4-D	ND	4.0	ug/L	SW846 8151A
2,4,5-T	ND	1.0	ug/L	SW846 8151A
2,4,5-TP (Silvex)	ND	1.0	ug/L	SW846 8151A
Dinoseb	ND	0.60	ug/L	SW846 8151A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	80	(20 - 150)

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXTJP1D5-MS **Matrix.....:** WG
MS Lot-Sample #: D1C220263-006 DXTJP1D6-MSD
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/29/01
Prep Batch #...: 1085329 **Analysis Time..:** 05:51
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2,4-D	**66**	**(20 - 133)**			**SW846 8151A**
	78	**(20 - 133)**	**17**	**(0-30)**	**SW846 8151A**
2,4,5-T	**66**	**(20 - 155)**			**SW846 8151A**
	82	**(20 - 155)**	**21**	**(0-30)**	**SW846 8151A**
2,4,5-TP (Silvex)	**75**	**(23 - 146)**			**SW846 8151A**
	89	**(23 - 146)**	**16**	**(0-30)**	**SW846 8151A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	72	(20 - 150)
	102	(20 - 150)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: D1C220263 **Work Order #...:** DXTJP1D5-MS **Matrix.....:** WG
MS Lot-Sample #: D1C220263-006 DXTJP1D6-MSD
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/29/01
Prep Batch #...: 1085329 **Analysis Time..:** 05:51
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
2,4-D	**ND**	**8.48**	**5.57**	**ug/L**	**66**		**SW846 8151A**
	ND	**8.50**	**6.62**	**ug/L**	**78**	**17**	**SW846 8151A**
2,4,5-T	**ND**	**2.12**	**1.41**	**ug/L**	**66**		**SW846 8151A**
	ND	**2.13**	**1.74**	**ug/L**	**82**	**21**	**SW846 8151A**
2,4,5-TP (Silvex)	**ND**	**2.12**	**1.60**	**ug/L**	**75**		**SW846 8151A**
	ND	**2.13**	**1.88**	**ug/L**	**89**	**16**	**SW846 8151A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	72	(20 - 150)
	102	(20 - 150)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: D1C220263 Work Order #...: DX1031AC-LCS Matrix.....: WATER
LCS Lot-Sample#: D1C270000-277 DX1031AD-LCSD
Prep Date.....: 03/27/01 Analysis Date..: 03/31/01
Prep Batch #...: 1086277 Analysis Time..: 00:48
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzo(a)pyrene	**80**	**(65 - 121)**			**SW846 8310**
	86	**(65 - 121)**	**6.2**	**(0-20)**	**SW846 8310**
Fluorene	**80**	**(59 - 106)**			**SW846 8310**
	85	**(59 - 106)**	**6.1**	**(0-40)**	**SW846 8310**
Indeno(1,2,3-cd)pyrene	**66**	**(57 - 114)**			**SW846 8310**
	74	**(57 - 114)**	**12**	**(0-30)**	**SW846 8310**
Naphthalene	**77**	**(45 - 101)**			**SW846 8310**
	81	**(45 - 101)**	**5.3**	**(0-40)**	**SW846 8310**
Pyrene	**79**	**(64 - 119)**			**SW846 8310**
	84	**(64 - 119)**	**6.2**	**(0-40)**	**SW846 8310**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	80	(54 - 126)
	86	(54 - 126)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

HPLC

Client Lot #...: D1C220263 **Work Order #...:** DX1031AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C270000-277 DX1031AD-LCSD
Prep Date.....: 03/27/01 **Analysis Date..:** 03/31/01
Prep Batch #...: 1086277 **Analysis Time..:** 00:48
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzo(a)pyrene	**4.00**	**3.22**	**ug/L**	**80**		**SW846 8310**
	4.00	**3.42**	**ug/L**	**86**	**6.2**	**SW846 8310**
Fluorene	**4.00**	**3.21**	**ug/L**	**80**		**SW846 8310**
	4.00	**3.41**	**ug/L**	**85**	**6.1**	**SW846 8310**
Indeno(1,2,3-cd)pyrene	**4.00**	**2.64**	**ug/L**	**66**		**SW846 8310**
	4.00	**2.98**	**ug/L**	**74**	**12**	**SW846 8310**
Naphthalene	**4.00**	**3.08**	**ug/L**	**77**		**SW846 8310**
	4.00	**3.25**	**ug/L**	**81**	**5.3**	**SW846 8310**
Pyrene	**4.00**	**3.15**	**ug/L**	**79**		**SW846 8310**
	4.00	**3.35**	**ug/L**	**84**	**6.2**	**SW846 8310**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	80	(54 - 126)
	86	(54 - 126)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

HPLC

Client Lot #...: D1C220263 **Work Order #...:** DX1031AA **Matrix.....:** WATER
MB Lot-Sample #: D1C270000-277

Prep Date.....: 03/27/01 **Analysis Time..:** 00:19

Analysis Date..: 03/31/01 **Prep Batch #...:** 1086277
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acenaphthene	ND	1.0	ug/L	SW846 8310
Acenaphthylene	ND	1.0	ug/L	SW846 8310
Anthracene	ND	0.10	ug/L	SW846 8310
Benzo(a)anthracene	ND	0.10	ug/L	SW846 8310
Benzo(a)pyrene	ND	0.10	ug/L	SW846 8310
Benzo(b)fluoranthene	ND	0.10	ug/L	SW846 8310
Benzo(ghi)perylene	ND	0.20	ug/L	SW846 8310
Benzo(k)fluoranthene	ND	0.10	ug/L	SW846 8310
Chrysene	ND	0.20	ug/L	SW846 8310
Dibenzo(a,h)anthracene	ND	0.20	ug/L	SW846 8310
Fluoranthene	ND	0.20	ug/L	SW846 8310
Fluorene	ND	0.20	ug/L	SW846 8310
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L	SW846 8310
1-Methylnaphthalene	ND	1.0	ug/L	SW846 8310
2-Methylnaphthalene	ND	1.0	ug/L	SW846 8310
Naphthalene	ND	1.0	ug/L	SW846 8310
Phenanthrene	ND	0.20	ug/L	SW846 8310
Pyrene	ND	0.20	ug/L	SW846 8310

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	85	(54 - 126)

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: D1C220263 **Work Order #...:** DXTJP1D7-MS **Matrix.....:** WG
MS Lot-Sample #: D1C220263-006 DXTJP1D8-MSD
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 03/27/01 **Analysis Date..:** 04/02/01
Prep Batch #...: 1086277 **Analysis Time..:** 16:07
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzo(a)pyrene	**92**	**(65 - 121)**			**SW846 8310**
	85	**(65 - 121)**	**8.4**	**(0-20)**	**SW846 8310**
Fluorene	**80**	**(59 - 106)**			**SW846 8310**
	81	**(59 - 106)**	**0.75**	**(0-40)**	**SW846 8310**
Indeno(1,2,3-cd)pyrene	**77**	**(57 - 114)**			**SW846 8310**
	75	**(57 - 114)**	**3.0**	**(0-30)**	**SW846 8310**
Naphthalene	**79**	**(45 - 101)**			**SW846 8310**
	81	**(45 - 101)**	**1.7**	**(0-40)**	**SW846 8310**
Pyrene	**80**	**(64 - 119)**			**SW846 8310**
	82	**(64 - 119)**	**2.5**	**(0-40)**	**SW846 8310**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
erphenyl-d14	86	(54 - 126)
	83	(54 - 126)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

HPLC

Client Lot #...: D1C220263 **Work Order #...:** DXTJP1D7-MS **Matrix.....:** WG
MS Lot-Sample #: D1C220263-006 DXTJP1D8-MSD
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 03/27/01 **Analysis Date..:** 04/02/01
Prep Batch #...: 1086277 **Analysis Time..:** 16:07
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzo(a)pyrene	**ND**	**3.97**	**3.66**	**ug/L**	**92**		**SW846 8310**
	ND	**3.91**	**3.31**	**ug/L**	**85**	**8.4**	**SW846 8310**
Fluorene	**ND**	**3.97**	**3.17**	**ug/L**	**80**		**SW846 8310**
	ND	**3.91**	**3.14**	**ug/L**	**81**	**0.75**	**SW846 8310**
Indeno(1,2,3-cd)pyrene	**ND**	**3.97**	**3.05**	**ug/L**	**77**		**SW846 8310**
	ND	**3.91**	**2.92**	**ug/L**	**75**	**3.0**	**SW846 8310**
Naphthalene	**ND**	**3.97**	**3.15**	**ug/L**	**79**		**SW846 8310**
	ND	**3.91**	**3.16**	**ug/L**	**81**	**1.7**	**SW846 8310**
Pyrene	**ND**	**3.97**	**3.19**	**ug/L**	**80**		**SW846 8310**
	ND	**3.91**	**3.22**	**ug/L**	**82**	**2.5**	**SW846 8310**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	86	(54 - 126)
	83	(54 - 126)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

Trace Level Organic Compounds

Client Lot #...: D1C220263 **Work Order #...:** DX2DP1AC **Matrix.....:** WATER
LCS Lot-Sample#: G1C270000-405
Prep Date.....: 03/27/01 **Analysis Date..:** 03/29/01
Prep Batch #...: 1086405 **Analysis Time..:** 04:10
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
2,3,7,8-TCDD	**92**	**(50 - 150)**	**SW846 8280A**
1,2,3,7,8-PeCDD	**94**	**(50 - 150)**	**SW846 8280A**
1,2,3,6,7,8-HxCDD	**86**	**(50 - 150)**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDD	**83**	**(50 - 150)**	**SW846 8280A**
OCDD	**91**	**(50 - 150)**	**SW846 8280A**
2,3,7,8-TCDF	**92**	**(50 - 150)**	**SW846 8280A**
1,2,3,7,8-PeCDF	**104**	**(50 - 150)**	**SW846 8280A**
1,2,3,6,7,8-HxCDF	**90**	**(50 - 150)**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDF	**93**	**(50 - 150)**	**SW846 8280A**
OCDF	**89**	**(50 - 150)**	**SW846 8280A**

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	81	(25 - 150)
13C-2,3,7,8-TCDF	78	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	94	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	90	(25 - 150)
13C-OCDD	87	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	99	(25 - 150)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: D1C220263 Work Order #...: DX2DP1AC Matrix.....: WATER
LCS Lot-Sample#: G1C270000-405
Prep Date.....: 03/27/01 Analysis Date..: 03/29/01
Prep Batch #...: 1086405 Analysis Time..: 04:10
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
2,3,7,8-TCDD	**25.0**	**23.0**	**ng/L**	**92**	**SW846 8280A**
1,2,3,7,8-PeCDD	**62.5**	**58.9**	**ng/L**	**94**	**SW846 8280A**
1,2,3,6,7,8-HxCDD	**62.5**	**53.9**	**ng/L**	**86**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDD	**62.5**	**52.1**	**ng/L**	**83**	**SW846 8280A**
OCDD	**125**	**114**	**ng/L**	**91**	**SW846 8280A**
2,3,7,8-TCDF	**25.0**	**22.9**	**ng/L**	**92**	**SW846 8280A**
1,2,3,7,8-PeCDF	**62.5**	**65.0**	**ng/L**	**104**	**SW846 8280A**
1,2,3,6,7,8-HxCDF	**62.5**	**56.0**	**ng/L**	**90**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDF	**62.5**	**58.2**	**ng/L**	**93**	**SW846 8280A**
OCDF	**125**	**112**	**ng/L**	**89**	**SW846 8280A**

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	81	(25 - 150)
13C-2,3,7,8-TCDF	78	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	94	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	90	(25 - 150)
13C-OCDD	87	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	99	(25 - 150)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

Trace Level Organic Compounds

Client Lot #...: D1C220263 **Work Order #...:** DX2DP1AA **Matrix.....:** WATER
MB Lot-Sample #: G1C270000-405
Prep Date.....: 03/27/01 **Analysis Time..:** 03:23
Analysis Date..: 03/29/01 **Prep Batch #...:** 1086405
Dilution Factor: 1

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	1.1	ng/L	SW846 8280A
Total TCDD	ND	1.1	ng/L	SW846 8280A
Total PeCDD	ND	3.4	ng/L	SW846 8280A
Total HxCDD	ND	1.6	ng/L	SW846 8280A
Total TCDF	ND	1.6	ng/L	SW846 8280A
Total PeCDF	ND	3.3	ng/L	SW846 8280A
Total HxCDF	ND	1.7	ng/L	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	78	(25 - 150)
13C-2,3,7,8-TCDF	78	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	91	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	93	(25 - 150)
13C-OCDD	82	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	94	(25 - 150)

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

Trace Level Organic Compounds

Client Lot #...: D1C220263 Work Order #...: DXTJP1CJ-MS Matrix.....: WG
MS Lot-Sample #: D1C220263-006 DXTJP1CK-MSD
Date Sampled...: 03/21/01 11:50 Date Received..: 03/22/01
Prep Date.....: 03/27/01 Analysis Date..: 03/29/01
Prep Batch #...: 1086405 Analysis Time..: 08:55
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2,3,7,8-TCDD	**94**	**(50 - 150)**			**SW846 8280A**
	93	**(50 - 150)**	**1.0**	**(0-50)**	**SW846 8280A**
1,2,3,7,8-PeCDD	**89**	**(50 - 150)**			**SW846 8280A**
	90	**(50 - 150)**	**0.26**	**(0-50)**	**SW846 8280A**
1,2,3,6,7,8-HxCDD	**88**	**(50 - 150)**			**SW846 8280A**
	87	**(50 - 150)**	**1.3**	**(0-50)**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDD	**82**	**(50 - 150)**			**SW846 8280A**
	86	**(50 - 150)**	**4.3**	**(0-50)**	**SW846 8280A**
OCDD	**91**	**(50 - 150)**			**SW846 8280A**
	91	**(50 - 150)**	**0.12**	**(0-50)**	**SW846 8280A**
2,3,7,8-TCDF	**87**	**(50 - 150)**			**SW846 8280A**
	84	**(50 - 150)**	**3.9**	**(0-50)**	**SW846 8280A**
1,2,3,7,8-PeCDF	**93**	**(50 - 150)**			**SW846 8280A**
	89	**(50 - 150)**	**4.4**	**(0-50)**	**SW846 8280A**
1,2,3,6,7,8-HxCDF	**88**	**(50 - 150)**			**SW846 8280A**
	86	**(50 - 150)**	**2.6**	**(0-50)**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDF	**91**	**(50 - 150)**			**SW846 8280A**
	89	**(50 - 150)**	**2.0**	**(0-50)**	**SW846 8280A**
OCDF	**91**	**(50 - 150)**			**SW846 8280A**
	90	**(50 - 150)**	**0.59**	**(0-50)**	**SW846 8280A**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	90	(25 - 150)
	90	(25 - 150)
13C-2,3,7,8-TCDF	92	(25 - 150)
	93	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	96	(25 - 150)
	96	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	93	(25 - 150)
	90	(25 - 150)
13C-OCDD	89	(25 - 150)
	90	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	103	(25 - 150)
	97	(25 - 150)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: D1C220263 Work Order #...: DXTJP1CJ-MS Matrix.....: WG
MS Lot-Sample #: D1C220263-006 DXTJP1CK-MSD
Date Sampled...: 03/21/01 11:50 Date Received..: 03/22/01
Prep Date.....: 03/27/01 Analysis Date..: 03/29/01
Prep Batch #...: 1086405 Analysis Time..: 08:55
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
2,3,7,8-TCDD	ND	25.3	23.8	ng/L	94		SW846 8280A
	ND	24.2	22.6	ng/L	93	1.0	SW846 8280A
1,2,3,7,8-PeCDD	ND	63.2	56.5	ng/L	89		SW846 8280A
	ND	60.5	54.2	ng/L	90	0.26	SW846 8280A
1,2,3,6,7,8-HxCDD	ND	63.2	55.5	ng/L	88		SW846 8280A
	ND	60.5	52.5	ng/L	87	1.3	SW846 8280A
1,2,3,4,6,7,8-HpCDD	ND	63.2	52.0	ng/L	82		SW846 8280A
	ND	60.5	52.0	ng/L	86	4.3	SW846 8280A
OCDD	ND	126	115	ng/L	91		SW846 8280A
	ND	121	110	ng/L	91	0.12	SW846 8280A
2,3,7,8-TCDF	ND	25.3	22.0	ng/L	87		SW846 8280A
	ND	24.2	20.3	ng/L	84	3.9	SW846 8280A
1,2,3,7,8-PeCDF	ND	63.2	59.1	ng/L	93		SW846 8280A
	ND	60.5	54.2	ng/L	89	4.4	SW846 8280A
1,2,3,6,7,8-HxCDF	ND	63.2	55.9	ng/L	88		SW846 8280A
	ND	60.5	52.2	ng/L	86	2.6	SW846 8280A
1,2,3,4,6,7,8-HpCDF	ND	63.2	57.5	ng/L	91		SW846 8280A
	ND	60.5	54.0	ng/L	89	2.0	SW846 8280A
OCDF	ND	126	115	ng/L	91		SW846 8280A
	ND	121	109	ng/L	90	0.59	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	90	(25 - 150)
	90	(25 - 150)
13C-2,3,7,8-TCDF	92	(25 - 150)
	93	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	96	(25 - 150)
	96	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	93	(25 - 150)
	90	(25 - 150)
13C-OCDD	89	(25 - 150)
	90	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	103	(25 - 150)
	97	(25 - 150)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D1C220263 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Mercury	105	(78 - 118)			SW846 7470A	03/26-03/27/01	1082356
	98	(78 - 118)	6.7	(0-10)	SW846 7470A	03/26-03/27/01	1082356
		Dilution Factor: 1					
Aluminum	95	(89 - 109)			SW846 6010B	03/27-03/28/01	1085289
	95	(89 - 109)	0.47	(0-20)	SW846 6010B	03/27-03/28/01	1085289
		Dilution Factor: 1					
Barium	111	(92 - 115)			SW846 6010B	03/27-03/28/01	1085289
	108	(92 - 115)	2.5	(0-20)	SW846 6010B	03/27-03/28/01	1085289
		Dilution Factor: 1					
Beryllium	104	(91 - 117)			SW846 6010B	03/27-03/28/01	1085289
	101	(91 - 117)	2.6	(0-20)	SW846 6010B	03/27-03/28/01	1085289
		Dilution Factor: 1					
Calcium	99	(88 - 108)			SW846 6010B	03/27-03/28/01	1085289
	99	(88 - 108)	0.39	(0-20)	SW846 6010B	03/27-03/28/01	1085289
		Dilution Factor: 1					
Cobalt	103	(91 - 111)			SW846 6010B	03/27-03/28/01	1085289
	101	(91 - 111)	2.7	(0-20)	SW846 6010B	03/27-03/28/01	1085289
		Dilution Factor: 1					
Copper	108	(93 - 113)			SW846 6010B	03/27-03/28/01	1085289
	106	(93 - 113)	1.8	(0-20)	SW846 6010B	03/27-03/28/01	1085289
		Dilution Factor: 1					
Iron	102	(92 - 114)			SW846 6010B	03/27-03/28/01	1085289
	103	(92 - 114)	0.90	(0-20)	SW846 6010B	03/27-03/28/01	1085289
		Dilution Factor: 1					
Magnesium	103	(93 - 113)			SW846 6010B	03/27-03/28/01	1085289
	102	(93 - 113)	0.19	(0-20)	SW846 6010B	03/27-03/28/01	1085289
		Dilution Factor: 1					
Manganese	104	(89 - 114)			SW846 6010B	03/27-03/28/01	1085289
	101	(89 - 114)	2.8	(0-20)	SW846 6010B	03/27-03/28/01	1085289
		Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D1C220263 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Nickel	105	(89 - 109)			SW846 6010B	03/27-03/28/01	1085289
	102	(89 - 109)	2.6	(0-20)	SW846 6010B	03/27-03/28/01	1085289
		Dilution Factor: 1					
Potassium	94	(87 - 110)			SW846 6010B	03/27-03/28/01	1085289
	93	(87 - 110)	0.80	(0-20)	SW846 6010B	03/27-03/28/01	1085289
		Dilution Factor: 1					
Sodium	99	(91 - 111)			SW846 6010B	03/27-03/28/01	1085289
	99	(91 - 111)	0.14	(0-20)	SW846 6010B	03/27-03/28/01	1085289
		Dilution Factor: 1					
Tin	101	(89 - 109)			SW846 6010B	03/27-03/28/01	1085289
	99	(89 - 109)	1.9	(0-20)	SW846 6010B	03/27-03/28/01	1085289
		Dilution Factor: 1					
Vanadium	106	(88 - 115)			SW846 6010B	03/27-03/28/01	1085289
	103	(88 - 115)	3.0	(0-20)	SW846 6010B	03/27-03/28/01	1085289
		Dilution Factor: 1					
Zinc	98	(83 - 111)			SW846 6010B	03/27-03/28/01	1085289
	96	(83 - 111)	2.3	(0-20)	SW846 6010B	03/27-03/28/01	1085289
		Dilution Factor: 1					
Molybdenum	102	(90 - 110)			SW846 6010B	03/27-03/28/01	1085289
	100	(90 - 110)	2.4	(0-20)	SW846 6010B	03/27-03/28/01	1085289
		Dilution Factor: 1					
Antimony	105	(86 - 119)			SW846 6020	04/05-04/11/01	1089265
	110	(86 - 119)	3.8	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					
Arsenic	104	(86 - 114)			SW846 6020	04/05-04/11/01	1089265
	106	(86 - 114)	1.3	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					
Cadmium	101	(85 - 115)			SW846 6020	04/05-04/11/01	1089265
	104	(85 - 115)	2.5	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D1C220263 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Chromium	106	(85 - 115)			SW846 6020	04/05-04/11/01	1089265
	111	(85 - 115)	4.1	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					
Lead	101	(85 - 115)			SW846 6020	04/05-04/11/01	1089265
	104	(85 - 115)	2.0	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					
Selenium	102	(85 - 115)			SW846 6020	04/05-04/11/01	1089265
	104	(85 - 115)	2.2	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					
Silver	97	(85 - 114)			SW846 6020	04/05-04/11/01	1089265
	96	(85 - 114)	0.59	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					
Thallium	101	(85 - 115)			SW846 6020	04/05-04/11/01	1089265
	104	(85 - 115)	3.2	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D1C220263 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Mercury	5.00	5.24	ug/L	105		SW846 7470A	03/26-03/27/01	1082356
	5.00	4.90	ug/L	98	6.7	SW846 7470A	03/26-03/27/01	1082356
			Dilution Factor: 1					
Aluminum	2000	1900	ug/L	95		SW846 6010B	03/27-03/28/01	1085289
	2000	1890	ug/L	95	0.47	SW846 6010B	03/27-03/28/01	1085289
			Dilution Factor: 1					
Barium	2000	2220	ug/L	111		SW846 6010B	03/27-03/28/01	1085289
	2000	2160	ug/L	108	2.5	SW846 6010B	03/27-03/28/01	1085289
			Dilution Factor: 1					
Beryllium	50.0	52.0	ug/L	104		SW846 6010B	03/27-03/28/01	1085289
	50.0	50.6	ug/L	101	2.6	SW846 6010B	03/27-03/28/01	1085289
			Dilution Factor: 1					
Calcium	50000	49700	ug/L	99		SW846 6010B	03/27-03/28/01	1085289
	50000	49500	ug/L	99	0.39	SW846 6010B	03/27-03/28/01	1085289
			Dilution Factor: 1					
Cobalt	500	516	ug/L	103		SW846 6010B	03/27-03/28/01	1085289
	500	503	ug/L	101	2.7	SW846 6010B	03/27-03/28/01	1085289
			Dilution Factor: 1					
Copper	250	271	ug/L	108		SW846 6010B	03/27-03/28/01	1085289
	250	266	ug/L	106	1.8	SW846 6010B	03/27-03/28/01	1085289
			Dilution Factor: 1					
Iron	1000	1020	ug/L	102		SW846 6010B	03/27-03/28/01	1085289
	1000	1030	ug/L	103	0.90	SW846 6010B	03/27-03/28/01	1085289
			Dilution Factor: 1					
Magnesium	50000	51300	ug/L	103		SW846 6010B	03/27-03/28/01	1085289
	50000	51200	ug/L	102	0.19	SW846 6010B	03/27-03/28/01	1085289
			Dilution Factor: 1					
Manganese	500	518	ug/L	104		SW846 6010B	03/27-03/28/01	1085289
	500	504	ug/L	101	2.8	SW846 6010B	03/27-03/28/01	1085289
			Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D1C220263 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nickel	500	523	ug/L	105		SW846 6010B	03/27-03/28/01	1085289
	500	509	ug/L	102	2.6	SW846 6010B	03/27-03/28/01	1085289
			Dilution Factor: 1					
Potassium	50000	47000	ug/L	94		SW846 6010B	03/27-03/28/01	1085289
	50000	46600	ug/L	93	0.80	SW846 6010B	03/27-03/28/01	1085289
			Dilution Factor: 1					
Sodium	50000	49600	ug/L	99		SW846 6010B	03/27-03/28/01	1085289
	50000	49600	ug/L	99	0.14	SW846 6010B	03/27-03/28/01	1085289
			Dilution Factor: 1					
Tin	2000	2020	ug/L	101		SW846 6010B	03/27-03/28/01	1085289
	2000	1980	ug/L	99	1.9	SW846 6010B	03/27-03/28/01	1085289
			Dilution Factor: 1					
Vanadium	500	531	ug/L	106		SW846 6010B	03/27-03/28/01	1085289
	500	516	ug/L	103	3.0	SW846 6010B	03/27-03/28/01	1085289
			Dilution Factor: 1					
Zinc	500	490	ug/L	98		SW846 6010B	03/27-03/28/01	1085289
	500	479	ug/L	96	2.3	SW846 6010B	03/27-03/28/01	1085289
			Dilution Factor: 1					
Molybdenum	1000	1020	ug/L	102		SW846 6010B	03/27-03/28/01	1085289
	1000	1000	ug/L	100	2.4	SW846 6010B	03/27-03/28/01	1085289
			Dilution Factor: 1					
Antimony	200	211	ug/L	105		SW846 6020	04/05-04/11/01	1089265
	200	219	ug/L	110	3.8	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					
Arsenic	200	208	ug/L	104		SW846 6020	04/05-04/11/01	1089265
	200	211	ug/L	106	1.3	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					
Cadmium	200	202	ug/L	101		SW846 6020	04/05-04/11/01	1089265
	200	207	ug/L	104	2.5	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D1C220263 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chromium	200	213	ug/L	106		SW846 6020	04/05-04/11/01	1089265
	200	222	ug/L	111	4.1	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					
Lead	200	203	ug/L	101		SW846 6020	04/05-04/11/01	1089265
	200	207	ug/L	104	2.0	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					
Selenium	200	204	ug/L	102		SW846 6020	04/05-04/11/01	1089265
	200	209	ug/L	104	2.2	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					
Silver	200	194	ug/L	97		SW846 6020	04/05-04/11/01	1089265
	200	193	ug/L	96	0.59	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					
Thallium	200	202	ug/L	101		SW846 6020	04/05-04/11/01	1089265
	200	209	ug/L	104	3.2	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					

NOTE(S):

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

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D1C220263 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: D1C230000-356 **Prep Batch #...:** 1082356						
Mercury	ND	0.20	ug/L	SW846 7470A	03/26-03/27/01	DXWMK1AA
		Dilution Factor: 1				
		Analysis Time..: 11:21				
MB Lot-Sample #: D1C260000-289 **Prep Batch #...:** 1085289						
Aluminum	ND	100	ug/L	SW846 6010B	03/27-03/28/01	DX0H31AT
		Dilution Factor: 1				
		Analysis Time..: 15:36				
Barium	ND	10.0	ug/L	SW846 6010B	03/27-03/28/01	DX0H31AU
		Dilution Factor: 1				
		Analysis Time..: 11:28				
Beryllium	ND	2.0	ug/L	SW846 6010B	03/27-03/28/01	DX0H31AV
		Dilution Factor: 1				
		Analysis Time..: 11:28				
Calcium	ND	200	ug/L	SW846 6010B	03/27-03/28/01	DX0H31A6
		Dilution Factor: 1				
		Analysis Time..: 15:36				
Cobalt	ND	10.0	ug/L	SW846 6010B	03/27-03/28/01	DX0H31A3
		Dilution Factor: 1				
		Analysis Time..: 11:28				
Copper	ND	20.0	ug/L	SW846 6010B	03/27-03/28/01	DX0H31AW
		Dilution Factor: 1				
		Analysis Time..: 11:28				
Iron	ND	100	ug/L	SW846 6010B	03/27-03/28/01	DX0H31AA
		Dilution Factor: 1				
		Analysis Time..: 15:36				
Magnesium	ND	200	ug/L	SW846 6010B	03/27-03/28/01	DX0H31A7
		Dilution Factor: 1				
		Analysis Time..: 15:36				
Manganese	**0.88 B**	**10.0**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DX0H31AX**
		Dilution Factor: 1				
		Analysis Time..: 11:28				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D1C220263 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Nickel	ND	40.0	ug/L	SW846 6010B	03/27-03/28/01	DX0H31A0
		Dilution Factor: 1				
		Analysis Time..: 11:28				
Potassium	ND	3000	ug/L	SW846 6010B	03/27-03/28/01	DX0H31A8
		Dilution Factor: 1				
		Analysis Time..: 15:36				
Sodium	**730 B**	**5000**	**ug/L**	**SW846 6010B**	**03/27-03/28/01**	**DX0H31AC**
		Dilution Factor: 1				
		Analysis Time..: 15:36				
Tin	ND	100	ug/L	SW846 6010B	03/27-03/28/01	DX0H31A4
		Dilution Factor: 1				
		Analysis Time..: 11:28				
Vanadium	ND	10.0	ug/L	SW846 6010B	03/27-03/28/01	DX0H31A1
		Dilution Factor: 1				
		Analysis Time..: 11:28				
Zinc	ND	20.0	ug/L	SW846 6010B	03/27-03/28/01	DX0H31A2
		Dilution Factor: 1				
		Analysis Time..: 11:28				
Molybdenum	ND	20.0	ug/L	SW846 6010B	03/27-03/28/01	DX0H31A5
		Dilution Factor: 1				
		Analysis Time..: 11:28				

MB Lot-Sample #: D1C300000-265 **Prep Batch #...:** 1089265

Antimony	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DX7PK1AA
		Dilution Factor: 1				
		Analysis Time..: 17:01				
Arsenic	ND	5.0	ug/L	SW846 6020	04/05-04/11/01	DX7PK1AC
		Dilution Factor: 1				
		Analysis Time..: 17:01				
Cadmium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DX7PK1AD
		Dilution Factor: 1				
		Analysis Time..: 17:01				
Chromium	**0.86 B**	**1.0**	**ug/L**	**SW846 6020**	**04/05-04/11/01**	**DX7PK1AJ**
		Dilution Factor: 1				
		Analysis Time..: 17:01				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D1C220263 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Lead	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DX7PK1AE
		Dilution Factor: 1				
		Analysis Time..: 17:01				
Selenium	ND	5.0	ug/L	SW846 6020	04/05-04/11/01	DX7PK1AF
		Dilution Factor: 1				
		Analysis Time..: 17:01				
Silver	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DX7PK1AG
		Dilution Factor: 1				
		Analysis Time..: 17:01				
Thallium	**0.027 B**	**1.0**	**ug/L**	**SW846 6020**	**04/05-04/11/01**	**DX7PK1AH**
		Dilution Factor: 1				
		Analysis Time..: 17:01				

NOTE(S):

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

B Estimated result. Result is less than RL.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D1C220263 **Matrix.....:** WATER
Date Sampled...: 03/21/01 11:30 **Date Received..:** 03/21/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D1C220101-002 **Prep Batch #...:** 1085289							
Aluminum	138 N	(89 - 109)			SW846 6010B	03/27-03/28/01	DXQR81EX
	131 N	(89 - 109)	3.3	(0-20)	SW846 6010B	03/27-03/28/01	DXQR81E0
		Dilution Factor: 1					
		Analysis Time..: 16:03					
Barium	100	(92 - 115)			SW846 6010B	03/27-03/28/01	DXQR81E2
	101	(92 - 115)	0.76	(0-20)	SW846 6010B	03/27-03/28/01	DXQR81E3
		Dilution Factor: 1					
		Analysis Time..: 12:28					
Beryllium	92	(91 - 117)			SW846 6010B	03/27-03/28/01	DXQR81E5
	94	(91 - 117)	1.4	(0-20)	SW846 6010B	03/27-03/28/01	DXQR81E6
		Dilution Factor: 1					
		Analysis Time..: 12:28					
Calcium	91	(88 - 108)			SW846 6010B	03/27-03/28/01	DXQR81F2
	85 N	(88 - 108)	3.7	(0-20)	SW846 6010B	03/27-03/28/01	DXQR81F3
		Dilution Factor: 1					
		Analysis Time..: 16:03					
Cobalt	93	(91 - 111)			SW846 6010B	03/27-03/28/01	DXQR81FQ
	94	(91 - 111)	1.1	(0-20)	SW846 6010B	03/27-03/28/01	DXQR81FR
		Dilution Factor: 1					
		Analysis Time..: 12:28					
Copper	101	(93 - 113)			SW846 6010B	03/27-03/28/01	DXQR81E8
	102	(93 - 113)	0.71	(0-20)	SW846 6010B	03/27-03/28/01	DXQR81E9
		Dilution Factor: 1					
		Analysis Time..: 12:28					
Iron	125 N	(92 - 114)			SW846 6010B	03/27-03/28/01	DXQR81A4
	117 N	(92 - 114)	3.8	(0-20)	SW846 6010B	03/27-03/28/01	DXQR81A5
		Dilution Factor: 1					
		Analysis Time..: 16:03					
Magnesium	99	(93 - 113)			SW846 6010B	03/27-03/28/01	DXQR81F5
	95	(93 - 113)	3.6	(0-20)	SW846 6010B	03/27-03/28/01	DXQR81F6
		Dilution Factor: 1					
		Analysis Time..: 16:03					
Manganese	92	(89 - 114)			SW846 6010B	03/27-03/28/01	DXQR81FC
	93	(89 - 114)	0.85	(0-20)	SW846 6010B	03/27-03/28/01	DXQR81FD
		Dilution Factor: 1					
		Analysis Time..: 12:28					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D1C220263 **Matrix.....:** WATER
Date Sampled...: 03/21/01 11:30 **Date Received..:** 03/21/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Nickel	94	(89 - 109)			SW846 6010B	03/27-03/28/01	DXQR81FF
	95	(89 - 109)	1.0	(0-20)	SW846 6010B	03/27-03/28/01	DXQR81FG
		Dilution Factor: 1					
		Analysis Time..: 12:28					
Potassium	93	(87 - 110)			SW846 6010B	03/27-03/28/01	DXQR81F8
	90	(87 - 110)	3.2	(0-20)	SW846 6010B	03/27-03/28/01	DXQR81F9
		Dilution Factor: 1					
		Analysis Time..: 16:03					
Sodium	83 N	(91 - 111)			SW846 6010B	03/27-03/28/01	DXQR81A6
	70 N	(91 - 111)	3.6	(0-20)	SW846 6010B	03/27-03/28/01	DXQR81A7
		Dilution Factor: 1					
		Analysis Time..: 16:03					
Tin	95	(89 - 109)			SW846 6010B	03/27-03/28/01	DXQR81FU
	96	(89 - 109)	0.58	(0-20)	SW846 6010B	03/27-03/28/01	DXQR81FV
		Dilution Factor: 1					
		Analysis Time..: 12:28					
Vanadium	94	(88 - 115)			SW846 6010B	03/27-03/28/01	DXQR81FJ
	95	(88 - 115)	0.91	(0-20)	SW846 6010B	03/27-03/28/01	DXQR81FK
		Dilution Factor: 1					
		Analysis Time..: 12:28					
Zinc	87	(83 - 111)			SW846 6010B	03/27-03/28/01	DXQR81FM
	88	(83 - 111)	1.0	(0-20)	SW846 6010B	03/27-03/28/01	DXQR81FN
		Dilution Factor: 1					
		Analysis Time..: 12:28					
Molybdenum	93	(90 - 110)			SW846 6010B	03/27-03/28/01	DXQR81FX
	94	(90 - 110)	1.0	(0-20)	SW846 6010B	03/27-03/28/01	DXQR81F0
		Dilution Factor: 1					
		Analysis Time..: 12:28					

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1C220263 **Matrix.....:** WATER
Date Sampled...: 03/21/01 11:30 **Date Received..:** 03/21/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT		UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D1C220101-002 **Prep Batch #...:** 1085289										
Aluminum										
	1800	2000	4580	N	ug/L	138		SW846 6010B	03/27-03/28/01	DXQR81EX
	1800	2000	4430	N	ug/L	131	3.3	SW846 6010B	03/27-03/28/01	DXQR81E0
			Dilution Factor: 1							
			Analysis Time..: 16:03							
Barium										
	10.0	2000	2010		ug/L	100		SW846 6010B	03/27-03/28/01	DXQR81E2
	10.0	2000	2030		ug/L	101	0.76	SW846 6010B	03/27-03/28/01	DXQR81E3
			Dilution Factor: 1							
			Analysis Time..: 12:28							
Beryllium										
	ND	50.0	46.1		ug/L	92		SW846 6010B	03/27-03/28/01	DXQR81E5
	ND	50.0	46.8		ug/L	94	1.4	SW846 6010B	03/27-03/28/01	DXQR81E6
			Dilution Factor: 1							
			Analysis Time..: 12:28							
Calcium										
	34300	50000	79600		ug/L	91		SW846 6010B	03/27-03/28/01	DXQR81F2
	34300	50000	76700	N	ug/L	85	3.7	SW846 6010B	03/27-03/28/01	DXQR81F3
			Dilution Factor: 1							
			Analysis Time..: 16:03							
Cobalt										
	ND	500	465		ug/L	93		SW846 6010B	03/27-03/28/01	DXQR81FQ
	ND	500	470		ug/L	94	1.1	SW846 6010B	03/27-03/28/01	DXQR81FR
			Dilution Factor: 1							
			Analysis Time..: 12:28							
Copper										
	9.4	250	261		ug/L	101		SW846 6010B	03/27-03/28/01	DXQR81E8
	9.4	250	263		ug/L	102	0.71	SW846 6010B	03/27-03/28/01	DXQR81E9
			Dilution Factor: 1							
			Analysis Time..: 12:28							
Iron										
	1000	1000	2270	N	ug/L	125		SW846 6010B	03/27-03/28/01	DXQR81A4
	1000	1000	2190	N	ug/L	117	3.8	SW846 6010B	03/27-03/28/01	DXQR81A5
			Dilution Factor: 1							
			Analysis Time..: 16:03							

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1C220263 **Matrix.....:** WATER
Date Sampled...: 03/21/01 11:30 **Date Received..:** 03/21/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Magnesium									
	5200	50000	54700	ug/L	99		SW846 6010B	03/27-03/28/01	DXQR81F5
	5200	50000	52800	ug/L	95	3.6	SW846 6010B	03/27-03/28/01	DXQR81F6
			Dilution Factor: 1						
			Analysis Time..: 16:03						
Manganese									
	55.0	500	514	ug/L	92		SW846 6010B	03/27-03/28/01	DXQR81FC
	55.0	500	519	ug/L	93	0.85	SW846 6010B	03/27-03/28/01	DXQR81FD
			Dilution Factor: 1						
			Analysis Time..: 12:28						
Nickel									
	ND	500	472	ug/L	94		SW846 6010B	03/27-03/28/01	DXQR81FF
	ND	500	477	ug/L	95	1.0	SW846 6010B	03/27-03/28/01	DXQR81FG
			Dilution Factor: 1						
			Analysis Time..: 12:28						
Potassium									
	970	50000	47400	ug/L	93		SW846 6010B	03/27-03/28/01	DXQR81F8
	970	50000	45900	ug/L	90	3.2	SW846 6010B	03/27-03/28/01	DXQR81F9
			Dilution Factor: 1						
			Analysis Time..: 16:03						
Sodium									
	138000	50000	180000 N	ug/L	83		SW846 6010B	03/27-03/28/01	DXQR81A6
	138000	50000	173000 N	ug/L	70	3.6	SW846 6010B	03/27-03/28/01	DXQR81A7
			Dilution Factor: 1						
			Analysis Time..: 16:03						
Tin									
	ND	2000	1900	ug/L	95		SW846 6010B	03/27-03/28/01	DXQR81FU
	ND	2000	1910	ug/L	96	0.58	SW846 6010B	03/27-03/28/01	DXQR81FV
			Dilution Factor: 1						
			Analysis Time..: 12:28						
Vanadium									
	2.2	500	474	ug/L	94		SW846 6010B	03/27-03/28/01	DXQR81FJ
	2.2	500	479	ug/L	95	0.91	SW846 6010B	03/27-03/28/01	DXQR81FK
			Dilution Factor: 1						
			Analysis Time..: 12:28						
Zinc									
	9.9	500	445	ug/L	87		SW846 6010B	03/27-03/28/01	DXQR81FM
	9.9	500	449	ug/L	88	1.0	SW846 6010B	03/27-03/28/01	DXQR81FN
			Dilution Factor: 1						
			Analysis Time..: 12:28						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1C220263 **Matrix.....:** WATER
Date Sampled...: 03/21/01 11:30 **Date Received..:** 03/21/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Molybdenum									
	ND	1000	927	ug/L	93		SW846 6010B	03/27-03/28/01	DXQR81FX
	ND	1000	937	ug/L	94	1.0	SW846 6010B	03/27-03/28/01	DXQR81F0

Dilution Factor: 1
Analysis Time..: 12:28

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D1C220263 **Matrix.....:** WG
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D1C220263-006 **Prep Batch #...:** 1082356							
Mercury	92	(78 - 118)			SW846 7470A	03/26-03/27/01	DXTJP1DT
	102	(78 - 118)	9.9	(0-10)	SW846 7470A	03/26-03/27/01	DXTJP1DU
		Dilution Factor: 1					
		Analysis Time..: 11:58					
MS Lot-Sample #: D1C220263-006 **Prep Batch #...:** 1085289							
Aluminum	94	(89 - 109)			SW846 6010B	03/27-03/28/01	DXTJP1CN
	98	(89 - 109)	4.0	(0-20)	SW846 6010B	03/27-03/28/01	DXTJP1CP
		Dilution Factor: 1					
		Analysis Time..: 17:12					
Barium	106	(92 - 115)			SW846 6010B	03/27-03/28/01	DXTJP1CQ
	109	(92 - 115)	2.7	(0-20)	SW846 6010B	03/27-03/28/01	DXTJP1CR
		Dilution Factor: 1					
		Analysis Time..: 13:47					
Beryllium	99	(91 - 117)			SW846 6010B	03/27-03/28/01	DXTJP1CT
	102	(91 - 117)	3.3	(0-20)	SW846 6010B	03/27-03/28/01	DXTJP1CU
		Dilution Factor: 1					
		Analysis Time..: 13:47					
Calcium	94	(88 - 108)			SW846 6010B	03/27-03/28/01	DXTJP1EQ
	100	(88 - 108)	3.0	(0-20)	SW846 6010B	03/27-03/28/01	DXTJP1ER
		Dilution Factor: 1					
		Analysis Time..: 17:12					
Cobalt	98	(91 - 111)			SW846 6010B	03/27-03/28/01	DXTJP1EJ
	101	(91 - 111)	2.8	(0-20)	SW846 6010B	03/27-03/28/01	DXTJP1EK
		Dilution Factor: 1					
		Analysis Time..: 13:47					
Copper	106	(93 - 113)			SW846 6010B	03/27-03/28/01	DXTJP1CV
	108	(93 - 113)	2.4	(0-20)	SW846 6010B	03/27-03/28/01	DXTJP1CW
		Dilution Factor: 1					
		Analysis Time..: 13:47					
Iron	98	(92 - 114)			SW846 6010B	03/27-03/28/01	DXTJP1CX
	102	(92 - 114)	3.2	(0-20)	SW846 6010B	03/27-03/28/01	DXTJP1C0
		Dilution Factor: 1					
		Analysis Time..: 17:12					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D1C220263 **Matrix.....:** WG
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Magnesium	100	(93 - 113)			SW846 6010B	03/27-03/28/01	DXTJP1ET
	107	(93 - 113)	3.3	(0-20)	SW846 6010B	03/27-03/28/01	DXTJP1EU
		Dilution Factor: 1					
		Analysis Time..: 17:12					
Manganese	98	(89 - 114)			SW846 6010B	03/27-03/28/01	DXTJP1C1
	101	(89 - 114)	2.8	(0-20)	SW846 6010B	03/27-03/28/01	DXTJP1C2
		Dilution Factor: 1					
		Analysis Time..: 13:47					
Nickel	98	(89 - 109)			SW846 6010B	03/27-03/28/01	DXTJP1C3
	101	(89 - 109)	2.7	(0-20)	SW846 6010B	03/27-03/28/01	DXTJP1C4
		Dilution Factor: 1					
		Analysis Time..: 13:47					
Potassium	93	(87 - 110)			SW846 6010B	03/27-03/28/01	DXTJP1EV
	96	(87 - 110)	2.6	(0-20)	SW846 6010B	03/27-03/28/01	DXTJP1EW
		Dilution Factor: 1					
		Analysis Time..: 17:12					
Sodium	95	(91 - 111)			SW846 6010B	03/27-03/28/01	DXTJP1EX
	101	(91 - 111)	2.8	(0-20)	SW846 6010B	03/27-03/28/01	DXTJP1E0
		Dilution Factor: 1					
		Analysis Time..: 17:12					
Tin	100	(89 - 109)			SW846 6010B	03/27-03/28/01	DXTJP1EL
	102	(89 - 109)	2.2	(0-20)	SW846 6010B	03/27-03/28/01	DXTJP1EM
		Dilution Factor: 1					
		Analysis Time..: 13:47					
Vanadium	101	(88 - 115)			SW846 6010B	03/27-03/28/01	DXTJP1C5
	104	(88 - 115)	2.7	(0-20)	SW846 6010B	03/27-03/28/01	DXTJP1C6
		Dilution Factor: 1					
		Analysis Time..: 13:47					
Zinc	91	(83 - 111)			SW846 6010B	03/27-03/28/01	DXTJP1C7
	95	(83 - 111)	4.1	(0-20)	SW846 6010B	03/27-03/28/01	DXTJP1C8
		Dilution Factor: 1					
		Analysis Time..: 13:47					
Molybdenum	98	(90 - 110)			SW846 6010B	03/27-03/28/01	DXTJP1EN
	101	(90 - 110)	3.0	(0-20)	SW846 6010B	03/27-03/28/01	DXTJP1EP
		Dilution Factor: 1					
		Analysis Time..: 13:47					

S Lot-Sample #: D1C220263-006 **Prep Batch #...:** 1089265

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D1C220263 **Matrix.....:** WG
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Antimony	123 N	(86 - 119)			SW846 6020	04/05-04/11/01	DXTJP1C9
	120 N	(86 - 119)	2.7	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DA
		Dilution Factor: 1					
		Analysis Time..: 18:48					
Arsenic	108	(86 - 114)			SW846 6020	04/05-04/11/01	DXTJP1DC
	106	(86 - 114)	1.9	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DD
		Dilution Factor: 1					
		Analysis Time..: 18:48					
Cadmium	103	(85 - 115)			SW846 6020	04/05-04/11/01	DXTJP1DE
	104	(85 - 115)	1.2	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DF
		Dilution Factor: 1					
		Analysis Time..: 18:48					
Chromium	106	(85 - 115)			SW846 6020	04/05-04/11/01	DXTJP1DQ
	101	(85 - 115)	4.7	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DR
		Dilution Factor: 1					
		Analysis Time..: 18:48					
Lead	102	(85 - 115)			SW846 6020	04/05-04/11/01	DXTJP1DG
	104	(85 - 115)	2.4	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DH
		Dilution Factor: 1					
		Analysis Time..: 18:48					
Selenium	106	(85 - 115)			SW846 6020	04/05-04/11/01	DXTJP1DJ
	108	(85 - 115)	2.4	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DK
		Dilution Factor: 1					
		Analysis Time..: 18:48					
Silver	25 N	(85 - 114)			SW846 6020	04/05-04/11/01	DXTJP1DL
	31 N	(85 - 114)	20	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DM
		Dilution Factor: 1					
		Analysis Time..: 18:48					
Thallium	101	(85 - 115)			SW846 6020	04/05-04/11/01	DXTJP1DN
	103	(85 - 115)	1.4	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DP
		Dilution Factor: 1					
		Analysis Time..: 18:48					

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1C220263 **Matrix.....:** WG
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D1C220263-006 **Prep Batch #...:** 1082356									
Mercury									
	ND	5.00	4.62	ug/L	92		SW846 7470A	03/26-03/27/01	DXTJP1DT
	ND	5.00	5.10	ug/L	102	9.9	SW846 7470A	03/26-03/27/01	DXTJP1DU
			Dilution Factor: 1						
			Analysis Time..: 11:58						
MS Lot-Sample #: D1C220263-006 **Prep Batch #...:** 1085289									
Aluminum									
	83.2	2000	1970	ug/L	94		SW846 6010B	03/27-03/28/01	DXTJP1CN
	83.2	2000	2050	ug/L	98	4.0	SW846 6010B	03/27-03/28/01	DXTJP1CP
			Dilution Factor: 1						
			Analysis Time..: 17:12						
Barium									
	35.4	2000	2150	ug/L	106		SW846 6010B	03/27-03/28/01	DXTJP1CQ
	35.4	2000	2210	ug/L	109	2.7	SW846 6010B	03/27-03/28/01	DXTJP1CR
			Dilution Factor: 1						
			Analysis Time..: 13:47						
Beryllium									
	ND	50.0	49.5	ug/L	99		SW846 6010B	03/27-03/28/01	DXTJP1CT
	ND	50.0	51.2	ug/L	102	3.3	SW846 6010B	03/27-03/28/01	DXTJP1CU
			Dilution Factor: 1						
			Analysis Time..: 13:47						
Calcium									
	47800	50000	94800	ug/L	94		SW846 6010B	03/27-03/28/01	DXTJP1EQ
	47800	50000	97700	ug/L	100	3.0	SW846 6010B	03/27-03/28/01	DXTJP1ER
			Dilution Factor: 1						
			Analysis Time..: 17:12						
Cobalt									
	ND	500	491	ug/L	98		SW846 6010B	03/27-03/28/01	DXTJP1EJ
	ND	500	505	ug/L	101	2.8	SW846 6010B	03/27-03/28/01	DXTJP1EK
			Dilution Factor: 1						
			Analysis Time..: 13:47						
Copper									
	ND	250	265	ug/L	106		SW846 6010B	03/27-03/28/01	DXTJP1CV
	ND	250	271	ug/L	108	2.4	SW846 6010B	03/27-03/28/01	DXTJP1CW
			Dilution Factor: 1						
			Analysis Time..: 13:47						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1C220263 **Matrix.....:** WG
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron									
	158	1000	1140	ug/L	98		SW846 6010B	03/27-03/28/01	DXTJP1CX
	158	1000	1180	ug/L	102	3.2	SW846 6010B	03/27-03/28/01	DXTJP1C0
			Dilution Factor: 1						
			Analysis Time..: 17:12						
Magnesium									
	44200	50000	94400	ug/L	100		SW846 6010B	03/27-03/28/01	DXTJP1ET
	44200	50000	97600	ug/L	107	3.3	SW846 6010B	03/27-03/28/01	DXTJP1EU
			Dilution Factor: 1						
			Analysis Time..: 17:12						
Manganese									
	3.2	500	494	ug/L	98		SW846 6010B	03/27-03/28/01	DXTJP1C1
	3.2	500	508	ug/L	101	2.8	SW846 6010B	03/27-03/28/01	DXTJP1C2
			Dilution Factor: 1						
			Analysis Time..: 13:47						
Nickel									
	ND	500	491	ug/L	98		SW846 6010B	03/27-03/28/01	DXTJP1C3
	ND	500	504	ug/L	101	2.7	SW846 6010B	03/27-03/28/01	DXTJP1C4
			Dilution Factor: 1						
			Analysis Time..: 13:47						
Potassium									
	6180	50000	52800	ug/L	93		SW846 6010B	03/27-03/28/01	DXTJP1EV
	6180	50000	54200	ug/L	96	2.6	SW846 6010B	03/27-03/28/01	DXTJP1EW
			Dilution Factor: 1						
			Analysis Time..: 17:12						
Sodium									
	54400	50000	102000	ug/L	95		SW846 6010B	03/27-03/28/01	DXTJP1EX
	54400	50000	105000	ug/L	101	2.8	SW846 6010B	03/27-03/28/01	DXTJP1E0
			Dilution Factor: 1						
			Analysis Time..: 17:12						
Tin									
	ND	2000	2000	ug/L	100		SW846 6010B	03/27-03/28/01	DXTJP1EL
	ND	2000	2040	ug/L	102	2.2	SW846 6010B	03/27-03/28/01	DXTJP1EM
			Dilution Factor: 1						
			Analysis Time..: 13:47						
Vanadium									
	28.4	500	536	ug/L	101		SW846 6010B	03/27-03/28/01	DXTJP1C5
	28.4	500	551	ug/L	104	2.7	SW846 6010B	03/27-03/28/01	DXTJP1C6
			Dilution Factor: 1						
			Analysis Time..: 13:47						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1C220263 **Matrix.....:** WG
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc									
	17.9	500	473	ug/L	91		SW846 6010B	03/27-03/28/01	DXTJP1C7
	17.9	500	492	ug/L	95	4.1	SW846 6010B	03/27-03/28/01	DXTJP1C8
			Dilution Factor: 1						
			Analysis Time..: 13:47						
Molybdenum									
	4.6	1000	981	ug/L	98		SW846 6010B	03/27-03/28/01	DXTJP1EN
	4.6	1000	1010	ug/L	101	3.0	SW846 6010B	03/27-03/28/01	DXTJP1EP
			Dilution Factor: 1						
			Analysis Time..: 13:47						

MS Lot-Sample #: D1C220263-006 **Prep Batch #...:** 1089265

Antimony									
	ND	200	247 N	ug/L	123		SW846 6020	04/05-04/11/01	DXTJP1C9
	ND	200	240 N	ug/L	120	2.7	SW846 6020	04/05-04/11/01	DXTJP1DA
			Dilution Factor: 1						
			Analysis Time..: 18:48						
Arsenic									
	4.9	200	221	ug/L	108		SW846 6020	04/05-04/11/01	DXTJP1DC
	4.9	200	217	ug/L	106	1.9	SW846 6020	04/05-04/11/01	DXTJP1DD
			Dilution Factor: 1						
			Analysis Time..: 18:48						
Cadmium									
	ND	200	206	ug/L	103		SW846 6020	04/05-04/11/01	DXTJP1DE
	ND	200	208	ug/L	104	1.2	SW846 6020	04/05-04/11/01	DXTJP1DF
			Dilution Factor: 1						
			Analysis Time..: 18:48						
Chromium									
	3.5	200	215	ug/L	106		SW846 6020	04/05-04/11/01	DXTJP1DQ
	3.5	200	205	ug/L	101	4.7	SW846 6020	04/05-04/11/01	DXTJP1DR
			Dilution Factor: 1						
			Analysis Time..: 18:48						
Lead									
	ND	200	204	ug/L	102		SW846 6020	04/05-04/11/01	DXTJP1DG
	ND	200	209	ug/L	104	2.4	SW846 6020	04/05-04/11/01	DXTJP1DH
			Dilution Factor: 1						
			Analysis Time..: 18:48						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1C220263 **Matrix.....:** WG
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Selenium									
	8.4	200	219	ug/L	106		SW846 6020	04/05-04/11/01	DXTJP1DJ
	8.4	200	225	ug/L	108	2.4	SW846 6020	04/05-04/11/01	DXTJP1DK
			Dilution Factor: 1						
			Analysis Time..: 18:48						
Silver									
	ND	200	50.1 N	ug/L	25		SW846 6020	04/05-04/11/01	DXTJP1DL
	ND	200	61.3 N	ug/L	31	20	SW846 6020	04/05-04/11/01	DXTJP1DM
			Dilution Factor: 1						
			Analysis Time..: 18:48						
Thallium									
	ND	200	202	ug/L	101		SW846 6020	04/05-04/11/01	DXTJP1DN
	ND	200	205	ug/L	103	1.4	SW846 6020	04/05-04/11/01	DXTJP1DP
			Dilution Factor: 1						
			Analysis Time..: 18:48						

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: D1C220263 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Sulfide		Work Order #: DX0T41AC	LCS Lot-Sample#: D1C260000-382		
	75	(70 - 130)	SW846 9030B/9034	03/26/01	1085382
		Dilution Factor: 1			
		Analysis Time..: 12:00			

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: D1C220263 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Sulfide			Work Order #:	DX0T41AC	LCS Lot-Sample#:	D1C260000-382	
	15.0	11.2	mg/L	75	SW846 9030B/9034	03/26/01	1085382
			Dilution Factor: 1				
			Analysis Time..: 12:00				

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: D1C220263 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total		WO#:EACXV1AC-LCS/EACXV1AD-LCSD				LCS Lot-Sample#: D1D030000-368	
	94	(90 - 110)			SW846 9012A	04/03/01	1093368
	97	(90 - 110)	2.7	(0-18)	SW846 9012A	04/03/01	1093368
		Dilution Factor: 1					
Perchlorate		WO#:DX1G51AC-LCS/DX1G51AD-LCSD				LCS Lot-Sample#: D1C270000-178	
	97	(80 - 120)			EPA 314.0	03/26/01	1086178
	98	(80 - 120)	1.1	(0-20)	EPA 314.0	03/26/01	1086178
		Dilution Factor: 1					
Total Organic Halogens		WO#:EAQ1M1AD-LCS/EAQ1M1AE-LCSD				LCS Lot-Sample#: D1D120000-313	
	106	(79 - 115)			SW846 9020B	04/10/01	1102313
	110	(79 - 115)	3.7	(0-18)	SW846 9020B	04/10/01	1102313
		Dilution Factor: 2					
Total Organic Carbon		WO#:EAXPD1AC-LCS/EAXPD1AD-LCSD				LCS Lot-Sample#: D1D170000-405	
	105	(90 - 110)			SW846 9060	04/16/01	1107405
	101	(90 - 110)	4.3	(0-10)	SW846 9060	04/16/01	1107405
		Dilution Factor: 1					

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: D1C220263 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total			WO#:EACXV1AC-LCS/EACXV1AD-LCSD				LCS Lot-Sample#: D1D030000-368	
	0.200	0.189	mg/L	94		SW846 9012A	04/03/01	1093368
	0.200	0.194	mg/L	97	2.7	SW846 9012A	04/03/01	1093368
			Dilution Factor: 1					
Perchlorate			WO#:DX1G51AC-LCS/DX1G51AD-LCSD				LCS Lot-Sample#: D1C270000-178	
	200	193	ug/L	97		EPA 314.0	03/26/01	1086178
	200	195	ug/L	98	1.1	EPA 314.0	03/26/01	1086178
			Dilution Factor: 1					
Total Organic Halogens			WO#:EAQ1M1AD-LCS/EAQ1M1AE-LCSD				LCS Lot-Sample#: D1D120000-313	
	100	106	ug/L	106		SW846 9020B	04/10/01	1102313
	100	110	ug/L	110	3.7	SW846 9020B	04/10/01	1102313
			Dilution Factor: 2					
Total Organic Carbon			WO#:EAXPD1AC-LCS/EAXPD1AD-LCSD				LCS Lot-Sample#: D1D170000-405	
	25.0	26.4	mg/L	105		SW846 9060	04/16/01	1107405
	25.0	25.2	mg/L	101	4.3	SW846 9060	04/16/01	1107405
			Dilution Factor: 1					

NOTE(S):

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

METHOD BLANK REPORT

General Chemistry

Client Lot #...: D1C220263 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total		Work Order #: EACXV1AA		MB Lot-Sample #:	D1D030000-368	
	ND	0.010	mg/L	SW846 9012A	04/03/01	1093368
		Dilution Factor: 1				
		Analysis Time..: 13:00				
Perchlorate		Work Order #: DX1G51AA		MB Lot-Sample #:	D1C270000-178	
	ND	20.0	ug/L	EPA 314.0	03/26/01	1086178
		Dilution Factor: 1				
		Analysis Time..: 10:01				
Total Organic Halogens		Work Order #: EAQ1M1AA		MB Lot-Sample #:	D1D120000-313	
	3.9 B	**30.0**	**ug/L**	**SW846 9020B**	**04/10/01**	**1102313**
		Dilution Factor: 1				
		Analysis Time..: 12:00				
Total Organic Carbon		Work Order #: EAXPD1AA		MB Lot-Sample #:	D1D170000-405	
	ND	1.0	mg/L	SW846 9060	04/16/01	1107405
		Dilution Factor: 1				
		Analysis Time..: 12:00				
Total Sulfide		Work Order #: DX0T41AA		MB Lot-Sample #:	D1C260000-382	
	ND	4.0	mg/L	SW846 9030B/9034	03/26/01	1085382
		Dilution Factor: 1				
		Analysis Time..: 12:00				

NOTE(S):

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

B Estimated result. Result is less than RL.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: D1C220263 **Matrix.....:** WG
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total			WO#: DXTJP1D9-MS/DXTJP1EA-MSD			MS Lot-Sample #: D1C220263-006	
	98	(90 - 110)			SW846 9012A	04/03/01	1093368
	98	(90 - 110)	0.40	(0-18)	SW846 9012A	04/03/01	1093368
		Dilution Factor: 1					
		Analysis Time..: 13:00					
Perchlorate			WO#: DXTJP1CL-MS/DXTJP1CM-MSD			MS Lot-Sample #: D1C220263-006	
	95	(80 - 120)			EPA 314.0	03/26/01	1086178
	97	(80 - 120)	1.4	(0-20)	EPA 314.0	03/26/01	1086178
		Dilution Factor: 1					
		Analysis Time..: 11:14					
Total Organic Halogens			WO#: DXTJP1EC-MS/DXTJP1ED-MSD			MS Lot-Sample #: D1C220263-006	
	106	(79 - 115)			SW846 9020B	04/10/01	1102313
	107	(79 - 115)	0.93	(0-18)	SW846 9020B	04/10/01	1102313
		Dilution Factor: 1					
		Analysis Time..: 12:00					
Total Organic Carbon			WO#: DXTJP1EG-MS/DXTJP1EH-MSD			MS Lot-Sample #: D1C220263-006	
	100	(90 - 110)			SW846 9060	04/16/01	1107405
	99	(90 - 110)	1.4	(0-10)	SW846 9060	04/16/01	1107405
		Dilution Factor: 1					
		Analysis Time..: 12:00					
Total Sulfide			WO#: DXTJP1EE-MS/DXTJP1EF-MSD			MS Lot-Sample #: D1C220263-006	
	60 N	(70 - 130)			SW846 9030B/9034	03/26/01	1085382
	54 N	(70 - 130)	10	(0-20)	SW846 9030B/9034	03/26/01	1085382
		Dilution Factor: 1					
		Analysis Time..: 12:00					

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: D1C220263 **Matrix.....:** WG
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total			WO#: DXTJP1D9-MS/DXTJP1EA-MSD				MS Lot-Sample #: D1C220263-006		
	ND	0.100	0.0976	mg/L	98		SW846 9012A	04/03/01	1093368
	ND	0.100	0.0980	mg/L	98	0.40	SW846 9012A	04/03/01	1093368
			Dilution Factor: 1						
			Analysis Time..: 13:00						
Perchlorate			WO#: DXTJP1CL-MS/DXTJP1CM-MSD				MS Lot-Sample #: D1C220263-006		
	19.9	100	115	ug/L	95		EPA 314.0	03/26/01	1086178
	19.9	100	117	ug/L	97	1.4	EPA 314.0	03/26/01	1086178
			Dilution Factor: 1						
			Analysis Time..: 11:14						
Total Organic Halogens			WO#: DXTJP1EC-MS/DXTJP1ED-MSD				MS Lot-Sample #: D1C220263-006		
	ND	100	106	ug/L	106		SW846 9020B	04/10/01	1102313
	ND	100	107	ug/L	107	0.93	SW846 9020B	04/10/01	1102313
			Dilution Factor: 1						
			Analysis Time..: 12:00						
Total Organic Carbon			WO#: DXTJP1EG-MS/DXTJP1EH-MSD				MS Lot-Sample #: D1C220263-006		
	ND	25.0	25.2	mg/L	100		SW846 9060	04/16/01	1107405
	ND	25.0	24.8	mg/L	99	1.4	SW846 9060	04/16/01	1107405
			Dilution Factor: 1						
			Analysis Time..: 12:00						
Total Sulfide			WO#: DXTJP1EE-MS/DXTJP1EF-MSD				MS Lot-Sample #: D1C220263-006		
	0.61	15.0	9.66 N	mg/L	60		SW846 9030B/9	03/26/01	1085382
	0.61	15.0	8.72 N	mg/L	54	10	SW846 9030B/9	03/26/01	1085382
			Dilution Factor: 1						
			Analysis Time..: 12:00						

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

U-3'C Jan 3/22

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
Sampling Location: Landfill-5, Cannon Air Force Base, NM	Packed and Sealed for Shipping by: R.K. DeWees — Seal Number: 156394
Team Leader: Project chief -- Fred Gebhardt	Delivered to Shipper by: R.K. DeWees — Airbill Number: 816793226410
	Sampling Status: [X] Done [ ] Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
03 21 - 2001	1150	CAFB -- TT	Ground-water	[redacted] 14	[redacted] Apx-IX: [redacted], SW8270C, SW8280, SW8310, SW8081, SW8082, SW8151, Total-METALS: SW6010 (Al,Ba,Be, Ca, Co, Cu, Fe, Mg, Mn, Mo, Ni, K, Na, Sn, V, Zn), SW6020-ICP-MS (Sb, Ag, Cd, As, Cr, Pb, Se, Tl), SW7470 (Hg), SW9012, SW9030, SW9060 ,SW9020. Perchlorate EPA 314.0	Environmental Sample
		NOTE: CAFB-TT VOC SAMPLES (SW8260B) ARE IN THE COOLER WITH CAFB-C SAMPLES				

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 [ ] Yes [ ] No
[signature]	TO FEDEX	03 21-01	1600	Quanterra Environmental 4955 Yarrow Street Arvada, CO 80002 ph: (303) 736-0184 Attention: Karen Kuoppala	Condition of Contents
	Jennifer Brown	03/22/01	0800		Contents Temperature
					Laboratory Project Number

U.S. GEOLOGICAL SURVEY, WATER R[illegible]URCES DIVISION, NEW MEXICO DISTRICT
ANALYTICAL REQUEST/CHAIN OF CUSTODY

Project Name & Number	PACKING AND SHIPPING DETAILS	
Cannon Air Force Base, Ground Water Sampling 463536004	Packed and Sealed for Shipping by R.K. DeWees	Seal Number 135616
Sampling Location: Landfill 5, Cannon Air Force Base, NM	Delivered to Shipper by R.K. DeWees	Airbill Number 816993226721
Team Leader: Project chief -- Fred Gebhardt	Sampling Status: [X] Done [ ] Continuing	

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
03 21 -- 2001	1455	CAFB - U	Ground-water	14	Apx-IX: [redacted], SW8270C, SW8280, SW8310, SW8081, SW8082, SW8151, Total-METALS: SW6010 (Al,Ba,Be, Ca, Co, Cu, Fe, Mg, Mn, Mo, Ni, K, Na, Sn, V, Zn), SW6020 ICP-MS (Sb, Ag, Cd, As, Cr, Pb, Se, Tl), SW7470 (Hg), SW9012, SW9030, SW9060, SW9020, PERCHLORATE-EPA 314.0	Environmental Sample
		NOTE: CAFB-U VOC SAMPLES (SW8260B) ARE IN THE COOLER WITH CAFB-D SAMPLES.				

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 [ ] Yes [ ] No
[signature]	TO FEDEX	03 21-01	1600	Quanterra Environmental 4955 Yarrow Street Arvada, CO 80002 ph: (303) 736-0184 Attention: Karen Kuoppala	Condition of Contents
	Jennifer Brown	03/22/01	0800		Contents Temperature
					Laboratory Project Number

2.12 [illegible]

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
Sampling Location: Landfill 5, Cannon Air Force Base, NM	Packed and Sealed for Shipping by: R.K. DeWees — Seal Number: 135614
Team Leader: Project chief -- Fred Gebhardt	Delivered to Shipper by: R.K. DeWees — Airbill Number: 816993276421
	Sampling Status: [X] Done [ ] Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
03 21 - 2001	1345	CAFB - B	Ground-water	~~5~~ 13	[redacted] Apx-IX: [redacted], SW8270C, SW8280, SW8310, SW8081, SW8082, SW8151, Total-METALS: SW6010 (Al,Ba,Be, Ca, Co, Cu, Fe, Mg, Mn, Mo, Ni, K, Na, Sn, V, Zn), SW6020 ICP-MS (Sb, Ag, Cd, As, Cr, Pb, Se, Tl), SW7470 (Hg), SW9012, SW9030, SW9060, SW9020	Environmental Sample
		NOTE: CAFB-B VOC SAMPLES (SW8260B) ARE IN THE COOLER WITH CAFB-D SAMPLES.				

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 [ ] Yes [ ] No
[signature]	TO FEDEX	03 21 01	1600	Quanterra Environmental 4955 Yarrow Street Arvada, CO 80002 ph: (303) 736-0184 Attention: Karen Kuoppala	Condition of Contents
	Jennifer Brown	03/22/01	0800		Contents Temperature
					Laboratory Project Number

1.49 [illegible] 3/22

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
Sampling Location: Landfill-5, Cannon Air Force Base, NM	Packed and Sealed for Shipping by: R.K. DeWees — Seal Number: 156424
Team Leader: Project Chief -- Fred Gebhardt	Delivered to Shipper by: R.K. DeWees — Airbill Number: 816993226410
	Sampling Status: [X] Done [ ] Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
03 21 - 2001	1020	CAFB - C	Ground-water	16	All Apx-IX: SW8260B, SW8270C, SW8280, SW8310, SW8081, SW8082, SW8151, Total-METALS: SW6010 (Al,Ba,Be, Ca, Co, Cu, Fe, Mg, Mn, Mo, Ni, K, Na, Sn, V, Zn), SW6020 ICP-MS (Sb, Ag, Cd, As, Cr, Pb, Se, Tl), SW7470 (Hg), SW9012, SW9030, SW9060 ,SW9020	Environmental Sample
"	1150	CAFB-T	"	3	NOTE: REMAINING SAMPLE BOTTLES FOR VOC: SW5030/SW8260B	CAFB-T, TT, MS, AND MSD ARE " " IN SEPARATE COOLERS
"	1150	CAFB-TT	"	3	" " "	" "
"	1150	CAFB-T-MS	"	3	" " "	MATRIX SPIKE
"	1150	CAFB-T-MSD	"	3	" " "	MATRIX SPIKE DUPLICATE
Additional "	Comments 1020	CAFB C-TB	PURE WATER	3	TRIP BLANK: VOC SW5030/SW8260B	TRIP BLANK

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 [ ] Yes [ ] No
[signature]	TO FEDEX	03 21-01	1600	Quanterra Environmental 4955 Yarrow Street Arvada, CO 80002 ph: (303) 736-0184 Attention: Karen Kuoppala	Condition of Contents
	[signature]	3/22/01	0800		Contents Temperature
					Laboratory Project Number

1.72 Jan 3/22

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
Sampling Location: Landfill 5, Cannon Air Force Base, NM	Packed and Sealed for Shipping by: R.K. DeWees — Seal Number: 156704
Team Leader: Project chief -- Fred Gelhardt	Delivered to Shipper by: R.K. DeWees — Airbill Number: 816493226410
	Sampling Status: [X] Done [ ] Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
03 21 - 2001	1150	CAFB-T	Ground-water	14	Apx-IX: [redacted], SW8270C, SW8280, SW8310, SW8081, SW8082, SW8151, Total-METALS: SW6010 (Al,Ba,Be, Ca, Co, Cu, Fe, Mg, Mn, Mo, Ni, K, Na, Sn, V, Zn). SW6020-ICP-MS (Sb, Ag, Cd, As, Cr, Pb, Se, Tl), SW7470 (Hg). SW9012, SW9030, SW9060 ,SW9020. Pechlorate-EPA 314.0	Environmental Sample
		NOTE: CAFB-T VOC SAMPLES (SW8260B) ARE IN THE COOLER WITH CAFB-C.				

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 [ ] Yes [ ] No
Jeff Ferguson	TO FEDEX	03-21-01	1600	Quanterra Environmental 4955 Yarrow Street Arvada, CO 80002 ph: (303) 736 0184 Attention: Karen Kuoppala	Condition of Contents
	Jennifer Brown	03/22/01	0800		Contents Temperature
					Laboratory Project Number

3/22

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

Sampling Location: Landfill 5, Cannon Air Force Base, NM

Team Leader: Project chief - Fred Gebhardt

PACKING AND SHIPPING DETAILS

Packed and Sealed for Shipping by: R.K. DeWees

Seal Number: 1576734

Delivered to Shipper by: R.K. DeWees

Airbill Number: 816793226121

Sampling Status: [X] Done [ ] Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
03 21 - 2001	0930	CAFB - D	Ground-water	16	All Apx-IX. SW8260B, SW8270C, SW8280, SW8310, SW8081, SW8082, SW8151, Total-METALS: SW6010 (Al,Ba,Be, Ca, Co, Cu, Fe, Mg, Mn, Mo, Ni, K, Na, Sn, V, Zn), SW6020-ICP-MS (Sb, Ag, Cd, As, Cr, Pb, Se, Tl), SW7470 (Hg), SW9012, SW9030, SW9060, SW9020	Environmental Sample
"	1345	CAFB - B	"	3	VOC: SW5030/SW8260B	" "
"	1455	CAFB - U	"	3	VOC: SW5030/SW8260B	" "
"	0930	CAFB - D - TB	PURE WATER	3	VOC: SW5030/SW8260B	TRIP BLANK

Additional Comments: NOTE: REMAINING SAMPLE SETS FOR CAFB-B AND CAFB-U ARE IN INDIVIDUAL COOLERS

CHAIN OF CUSTODY RECORD

Relinquished by (signed)	Received by (signed)	Date	Time
[signature]	TO FEDEX	03-21-01	1600
	Jennifer Brown	03/22/01	0800

LABORATORY LOG-IN OF SAMPLE SHIPPING CONTAINER

Analytical Laboratory: Quanterra Environmental, 4955 Yarrow Street, Arvada, CO 80002, ph: (303) 736-0184, Attention: Karen Kuoppala

Seal Intact upon Receipt: [ ] Yes [ ] No

Condition of Contents

Contents Temperature

Laboratory Project Number

1-52 JH 3/22

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
Sampling Location: Landfill 5, Cannon Air Force Base, NM	Packed and Sealed for Shipping by: R.K. DeWees — Seal Number: 156564
Team Leader: Project chief -- Fred Gebhardt	Delivered to Shipper by: R.K. DeWees — Airbill Number: 816993226410
	Sampling Status: [X] Done [ ] Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
03-21-2001	1150	CAFB-T-MS	Ground-water	14	[redacted] Apx-IX: [redacted], SW8270C, SW8280, SW8310, SW8081, SW8082, SW8151, Total-METALS: SW6010 (Al,Ba,Be, Ca, Co, Cu, Fe, Mg, Mn, Mo, Ni, K, Na, Sn, V, Zn), SW6020-ICP-MS (Sb, Ag, Cd, As, Cr, Pb, Se, Tl), SW7470 (Hg), SW9012, SW9030, SW9060, SW9020, PERCHLORATE - EPA 314.0	~~Environmental Sample~~ MATRIX SPIKE
		NOTE: CAFB-T-MS VOC SAMPLES (SW8260B) ARE IN THE COOLER WITH CAFB-C SAMPLES.				

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 [ ] Yes [ ] No
[signature]	TO FEDEX	03 21-01	1600	Quanterra Environmental 4955 Yarrow Street Arvada, CO 80002 ph: (303) 736-0184 Attention: Karen Kuoppala	Condition of Contents
	[signature]	03/22/01	0800		Contents Temperature
					Laboratory Project Number

1.7 gm 2

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
Sampling Location: Landfill-5, Cannon Air Force Base, NM	Packed and Sealed for Shipping by: R.K. DeWees — Seal Number: 156414
Team Leader: Project chief -- Fred Gebhardt	Delivered to Shipper by: R.K. DeWees — Airbill Number: 8169932 2640
	Sampling Status: ☐ Done ☐ Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
03-21-2001	1150	CAFB-T-MSD	Ground-water	14	Apx-IX: [redacted], SW8270C, SW8280, SW8310, SW8081, SW8082, SW8151, Total-METALS: SW6010 (Al,Ba,Be, Ca, Co, Cu, Fe, Mg, Mn, Mo, Ni, K, Na, Sn, V, Zn), SW6020-ICP-MS (Sb, Ag, Cd, As, Cr, Pb, Se, Tl), SW7470 (Hg), SW9012, SW9030, SW9060, SW9020, PERCHLORATE - EPA 314.0	~~Environmental Sample~~ MATRIX SPIKE DUPLICATE
		NOTE: CAFB-T-MSD VOC SAMPLES (SW8260B) ARE IN THE COOLER WITH CAFB-C SAMPLE				

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 ☐ Yes ☐ No
[signature]	TO FEDEX	03 21-01	1600	Quanterra Environmental 4955 Yarrow Street Arvada, CO 80002 ph: (303) 736-0184 Attention: Karen Kuoppala	Condition of Contents
	Jennifer Brown	3/22/01	0300		Contents Temperature
					Laboratory Project Number

STL Denver

Sample Receiving Checklist

Lot #: DIC220263 Date/Time Received: 03/22/01 0800

Company Name & Sampling Site: USGS - Cannon Air Force Base

*Cooler #(s):	1	2	3	4	5	6	7	8	9
Temperatures (°C):	0.3	0.5	1.4	2.1	1.9	3.1	1.3	1.7	1.7

PM to Complete This Section: *Yes* *No*

Residual chlorine check required: ☐ ☒

Special instruction to Sample Receiving staff: 25228

Unpacking & Labeling Check Points:

N/A	Yes	No		Initials
☐	☒	☐	1. Cooler seals intact. (N/A if hand delivered)	GS
	☒	☐	2. Chain of custody present.	
	☐	☒	3. Bottles broken and/or are leaking, comment if yes.	
			PHOTOGRAPH BROKEN BOTTLES	
	☒	☐	4. Containers labeled, comment if no.	
☐	☒	☐	5. pH of all samples checked and meet requirements, note exceptions.	
	☒	☐	6. Chain of custody includes "received by" and "relinquished" by signatures, dates, and times.	
	☐	☒	7. Receipt date(s) > 48 hours past the collection date(s)? If yes, notify PA PM.	
	☒	☐	8. Chain of custody agrees with bottle count, comment if no.	
	☒	☐	9. Chain of custody agrees with labels, comment if no.	
☐	☒	☐	10. VOA samples filled completely, comment if no.	
☐	☒	☐	11. VOA vials preserved, check label: Preservative ☒HCl ☒4±2°C ☐Sodium Thiosulfate	
	☐	☒	12. Did samples require preservation with sodium thiosulfate?	
☐	☐	☒	13. If yes to #12, did the samples contain residual chlorine?	
☐	☐	☒	14. Sediment present in dissolved/filtered bottles.	
	☐	☒	15. Are analyses with short holding times requested?	
☐	☒	☐	16. Is extra sample volume provided for MS, MSD or matrix duplicates?	
	☐	☒	17. Multiphase samples present? If yes, comment below.	
	☐	☒	18. Any subsampling for volatiles? If yes, list samples.	
			PHOTOGRAPH MULTIPHASE SAMPLES	
☐	☒	☐	19. Subcontract COC signed and sent with samples to bottle prep?	✓
	☒	☐	20. Was sample labeling double checked by a second person?	PJ
☒	☐	☐	21. Were sample bottles, COC and paperwork double checked for dissolved/filtered metals by a second person?	GS

Document any problems or discrepancies and the actions taken to resolve them on a Condition Upon Receipt Anomaly Report (CUR).

COPY FOR YOUR INFORMATION

CONTRACT LABORATORY DATA-REVIEW WORKSHEET

1.0 GENERAL INFORMATION Laboratory Lot Number: D1C230236

Data reviewer: Richard Daddow Review date: 5/7/01

District, Project, & Account #: NM Cannon AFB 463C-3600F

Sample collection date: 3/22/01 Sample matrix/no.: water

No. of sample types in lot: Environmental 4 Trip blank 2 Equip. blank ____

MS/MSD ____ Other: ____

2.0 INVOICE STATUS FOR LOT: OK Invoice copy attached X

3.0 DATA REPORTS and FILES

Date of Lab analytical report: 4/20/01 Number of copies: bound 1 unbound 2

No. of volumes of raw-data report: ____ No. of CD copies of raw-data report: 1

Raw-data report reviewed? Yes ___ No X Electronic data files on CD? Yes X No ____

EDD file format: NWIS X STL standard ____ ERPIMS ____ DODEC ____

Comments—Data Reports ____

4.0 SAMPLE ANALYSES *(Page numbers listed in worksheet refer to lab analytical report)*

4.1 Were accelerated turn-around times (TATs) requested for analyses? Yes ___ No X

If yes, list TAT period and if completed: ____

4.2 Were analyses on chain-of-custody (COC) form performed by lab? YES X **NO** ____

If **no**, list missing or cancelled analyses and reason for non-performance: ____

4.3 Were the samples properly preserved, labeled, no lab log-in problems, and(or) at appropriate temperature (<6 deg. C) upon receipt by the laboratory: Yes X No ____

If **no**, list sample/lab IDs, and associated problems with when delivered at laboratory:

Laboratory Lot No: DCC230236

4.4 Were preparation (extraction) and(or) analysis holding times met? Yes X No ___

If **no**, list analytical methods and sample/lab IDs for samples that exceeded holding-time limits:

4.5 Did surrogate recoveries meet QC acceptance criteria? Yes X No ___ NA ___

If **no**, list methods, surrogates, associated sample/lab IDs, lab report page #s: ___

4.6 Were dilution factors greater than 1 for ***organic*** analyses? Yes ___ No X NA ___

If **yes**, list analytical method, lab/sample IDs, and reason for raised dilution factors: dilution ___

high-analyte levels ___ matrix interferences ___ other ___

4.7 Were dilution factors greater than 1 for **inorganic** analyses? Yes X No ___ NA ___

If **yes**, list analytical method, lab/sample IDs, and reason for raised dilution factors: dilution ___

high-analyte levels X matrix interferences ___ other ___

300 (SO4) samples CAFB-6 (-001), CAFB-E (-002)

CAFB-H (-003) (p. 50-52)

4.8 Additional comments about sample analyses: ___

Laboratory Lot No: DIC 230236

5.0 QUALITY CONTROL (QC) ANALYSES and RESULTS

5.1 Did lab control samples (LCS/LSCD) meet percent recoveries (%R) criteria? Yes___ No X

If **no**, list method, analytes, LCS/LCSD, and report page #s:

8270C 4-Nitrophenol LCS/LCSD (p. 63)

5.2 Were any target analytes detected in the **Laboratory Method Blanks**? Yes X No___

If **yes**, list method, analytes, report page #s:

6010B Al, Cu, Na, Zn (p. 101-102)
6020 Cr, Tl (p. 102-103)
9020B TOX (p. 119)

5.3 Did the **MS/MSD** results meet %R or RPD acceptance criteria? Yes___ No X NA___

Note: matrix spike and matrix spike duplicate (MS/MSD) data are used to evaluate the effect of sample matrix on the analytical process and should be only used in conjunction with other available lab QC data. In some cases, MS samples not directly associated with this lot may be used by the laboratory.

List analytical method and if MS samples are associated with this lot.

If did not meet acceptance criteria also list analytes; MS, MSD or RPD; and lab report page #:

8260B, 8081A 8082, 8310, 8280 associated MS lot # yes___ no X
7470B, ~~6010~~ 6010B associated MS lot # yes___ no X
6020 Sb, Ag MS/MSD (p. 110) associated MS lot # yes___ no X
314.0, 9012A, 354.1 (NO_3) 353.2 (NO_3) associated MS lot # yes___ no X
300 (SO_4), 9020B (TOX), 9060 (TOC) associated MS lot # yes___ no X
9030B (Total Sulfide) associated MS lot # yes___ no X

No MS results reported for method(s): 8270C, 8151A

5.4 Additional comments about QC results:

Laboratory Lot No: 01C230236

6.0 ANALYTICAL METHODS USED in this LABORATORY LOT NUMBER

X VOCs by GC/MS--method 8260B app IX *[water (W) or solids (S) analysis holding-time (HT) of 14 da*

___ Gasoline Range Organics (GRO) + BTEX--method 8015M-GRO *[W and S: analysis HT 14 days]*

___ Diesel Range Organics-method 8015M-DRO *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*

X Pesticides by GC--method 8081A *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*

X PCBs by GC--method 8082 *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

___ Pesticides by GC--method 8141A *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*

X Herbicides by GC--method 8151A *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

X SVOCs by GC/MS--method 8270C *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

X Dioxins and Furans--methods 8280 or 8290 *[W and S: prep HT 30 days; analysis HT 45 days]*

X PAHs by HPLC method 8310 *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

___ Explosives by HPLC method 8330 *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

___ Hexane extractable materials (HEM and SGT-HEM)--method 1664 *[W: analysis HT 28 days]*

X Total organic carbon (TOC)--methods 415.1 or 9060 *[W: analysis HT 28 days]*

___ Dissolved organic carbon (DOC)--methods 415.1 or 9060 *[W: analysis HT 28 days]*

X Total organic halides (TOX)--method 9020 *[W: analysis HT 28 days]*

X Metals by ICP--method 6010B/200.7 Dissolved ___ Total X *[W and S: analysis HT 180 days]*

X Metals by ICP/MS--method 6020/200.8 Dissolved ___ Total X *[W and S: analysis HT 180 days]*

___ Metals by GFAA methods *[W and S: analysis HT 180 days]* Methods:Sb-7041, As-7060, Cd-7131 Cr-7191, Pb-7421, Se-7740, Tl-7841 List GFAA metals: ___

___ Hexavalent chromium--method 7196 *[W: analysis HT **24-48 hours**]*

X Mercury by CVAA--method 7470A (W) and 7471A (S) *[W and S: analysis HT 28 days]*

X Inorganic anions--method 300 *[W: analysis HT **48 hours**- NO_2, NO_3, ortho-P; HT 28 days--Br,Cl ,F, SO_4]*

X Total dissolved solids (TDS)--method 160.1 and(or) TSS--method 160.2 *[W: analysis HT 7 days]*

___ Total alkalinity--method 310.1 *[W: analysis HT 14 days]*

___ Nitrogen, ammonia--method 350.1 *[W: analysis HT 28 days]*

___ Nitrogen, TKN--method 351.2 *[W: analysis HT 28 days]*

X Nitrogen, nitrate + nitrite--method 353.2 *[W: analysis HT 28 days]* NO_3 or NO_2 only *[HT **48 hours**]*

X Nitrogen, nitrite--method 354.1 *[W: analysis HT **48 hours**]*

___ Total phosphorus--method 365.3 *[W: analysis HT 28 days]*

X Cyanide, total and amenable--methods 9010B or 9012A *[W and S: analysis HT 14 days]*

X Other analyses: 314.0 perchlorate

QC DATA ASSOCIATION SUMMARY

D1C230236

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WG	MCAWW 160.1		1087426	1088146
	WG	MCAWW 353.2		1107364	
	WG	MCAWW 354.1		1085344	1085171
	WG	MCAWW 300.0A		1096449	1096194
	WG	SW846 6020		1089265	1089103
	WG	SW846 7470A		1085190	1085083
	WG	SW846 8082		1085201	1085077
	WG	SW846 8081A		1085198	1085076
	WG	SW846 8260B		1095213	1095220
	WG	SW846 6010B		1087259	1087125
	WG	SW846 9030B/9034		1088250	1088128
	WG	EPA 314.0		1086178	1086052
002	WG	MCAWW 160.1		1087426	1088146
	WG	MCAWW 353.2		1107364	
	WG	MCAWW 354.1		1085344	1085171
	WG	MCAWW 300.0A		1096449	1096194
	WG	SW846 6020		1089265	1089103
	WG	SW846 7470A		1085190	1085083
	WG	SW846 8082		1085201	1085077
	WG	SW846 8081A		1085198	1085076
	WG	SW846 8260B		1095213	1095220
	WG	SW846 6010B		1087259	1087125
	WG	SW846 9030B/9034		1088250	1088128
003	WG	MCAWW 160.1		1087426	1088146
	WG	MCAWW 353.2		1107364	
	WG	MCAWW 354.1		1085344	1085171
	WG	MCAWW 300.0A		1096449	1096194
	WG	SW846 6020		1089265	1089103
	WG	SW846 7470A		1085190	1085083
	WG	SW846 8082		1085201	1085077
	WG	SW846 8081A		1085198	1085076
	WG	SW846 8260B		1095213	1095220
	WG	SW846 6010B		1087259	1087125
	WG	SW846 9030B/9034		1088250	1088128
004	WQ	SW846 8260B		1095213	1095220
005	WG	SW846 9060		1107405	1107185
	WG	SW846 6020		1089265	1089103
	WG	SW846 9020B		1102313	1102126
	WG	SW846 7470A		1085190	1085083
	WG	SW846 8082		1085201	1085077

(Continued on next page)

QC DATA ASSOCIATION SUMMARY

D1C230236

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
005	WG	SW846 8081A		1085198	1085076
	WG	SW846 8260B		1095213	1095220
	WG	SW846 8270C		1085169	
	WG	SW846 6010B		1087259	1087125
	WG	SW846 9012A		1093368	1093200
	WG	SW846 8151A		1087338	
	WG	SW846 8280A		1086405	1086229
	WG	SW846 8310		1086277	1086128
	WG	SW846 9030B/9034		1088250	1088128
	WG	EPA 314.0		1086178	1086052
006	WQ	SW846 8260B		1095213	1095220

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D1C230236 **Work Order #...:** EAFRH1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1D050000-213 EAFRH1AD-LCSD
Prep Date.....: 04/04/01 **Analysis Date..:** 04/04/01
Prep Batch #...: 1095213 **Analysis Time..:** 10:24
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**89**	**(79 - 119)**			**SW846 8260B**
	92	**(79 - 119)**	**3.3**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**91**	**(76 - 116)**			**SW846 8260B**
	93	**(76 - 116)**	**1.8**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**94**	**(79 - 119)**			**SW846 8260B**
	98	**(79 - 119)**	**3.9**	**(0-20)**	**SW846 8260B**
Toluene	**85**	**(75 - 122)**			**SW846 8260B**
	86	**(75 - 122)**	**2.0**	**(0-20)**	**SW846 8260B**
Trichloroethene	**97**	**(81 - 121)**			**SW846 8260B**
	102	**(81 - 121)**	**4.7**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	95	(80 - 120)
	97	(80 - 120)
1,2-Dichloroethane-d4	92	(72 - 127)
	93	(72 - 127)
4-Bromofluorobenzene	100	(79 - 119)
	100	(79 - 119)
Toluene-d8	103	(79 - 119)
	102	(79 - 119)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: D1C230236 **Work Order #...:** EAFRH1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1D050000-213 EAFRH1AD-LCSD
Prep Date.....: 04/04/01 **Analysis Date..:** 04/04/01
Prep Batch #...: 1095213 **Analysis Time..:** 10:24
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	**10.0**	**8.92**	**ug/L**	**89**		**SW846 8260B**
	10.0	**9.22**	**ug/L**	**92**	**3.3**	**SW846 8260B**
Chlorobenzene	**10.0**	**9.12**	**ug/L**	**91**		**SW846 8260B**
	10.0	**9.29**	**ug/L**	**93**	**1.8**	**SW846 8260B**
1,1-Dichloroethene	**10.0**	**9.43**	**ug/L**	**94**		**SW846 8260B**
	10.0	**9.81**	**ug/L**	**98**	**3.9**	**SW846 8260B**
Toluene	**10.0**	**8.46**	**ug/L**	**85**		**SW846 8260B**
	10.0	**8.62**	**ug/L**	**86**	**2.0**	**SW846 8260B**
Trichloroethene	**10.0**	**9.70**	**ug/L**	**97**		**SW846 8260B**
	10.0	**10.2**	**ug/L**	**102**	**4.7**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	95	(80 - 120)
	97	(80 - 120)
1,2-Dichloroethane-d4	92	(72 - 127)
	93	(72 - 127)
4-Bromofluorobenzene	100	(79 - 119)
	100	(79 - 119)
Toluene-d8	103	(79 - 119)
	102	(79 - 119)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: D1C230236 **Work Order #...:** EAFRH1AA **Matrix.....:** WATER
MB Lot-Sample #: D1D050000-213

Prep Date.....: 04/04/01 **Analysis Time..:** 11:16

Analysis Date..: 04/04/01 **Prep Batch #...:** 1095213
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	10	ug/L	SW846 8260B
Acetonitrile	ND	20	ug/L	SW846 8260B
Acrylonitrile	ND	20	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
Carbon disulfide	ND	1.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroprene	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	2.0	ug/L	SW846 8260B
Allyl chloride	ND	2.0	ug/L	SW846 8260B
Dibromomethane	ND	1.0	ug/L	SW846 8260B
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	2.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
1,4-Dioxane	ND	200	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Iodomethane	ND	1.0	ug/L	SW846 8260B
Isobutyl alcohol	ND	50	ug/L	SW846 8260B
Methacrylonitrile	ND	10	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
Methyl methacrylate	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Propionitrile	ND	4.0	ug/L	SW846 8260B

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: D1C230236 **Work Order #...:** EAFRH1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
1,2,3-Trichloropropane	ND	1.0	ug/L	SW846 8260B
Vinyl acetate	ND	2.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	SW846 8260B
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	SW846 8260B
2-Butanone (MEK)	ND	5.0	ug/L	SW846 8260B
Acrolein	ND	20	ug/L	SW846 8260B
Ethyl methacrylate	ND	1.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(80 - 120)
1,2-Dichloroethane-d4	93	(72 - 127)
4-Bromofluorobenzene	98	(79 - 119)
Toluene-d8	103	(79 - 119)

NOTE(S):

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

US GEOLOGICAL SURVEY

Method Blank Report

GC/MS Volatiles

Lot-Sample #: D1D050000-213 B **Work Order #:** EAFRH1AA **Matrix:** WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/L

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D1C230236 **Work Order #...:** DXV9K1CL-MS **Matrix.....:** WATER
MS Lot-Sample #: D1C230220-003 DXV9K1CM-MSD
Date Sampled...: 03/22/01 14:30 **Date Received..:** 03/23/01
Prep Date.....: 04/04/01 **Analysis Date..:** 04/04/01
Prep Batch #...: 1095213 **Analysis Time..:** 13:55
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**95**	**(79 - 119)**			**SW846 8260B**
	95	**(79 - 119)**	**0.58**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**89**	**(76 - 116)**			**SW846 8260B**
	94	**(76 - 116)**	**5.4**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**97**	**(79 - 119)**			**SW846 8260B**
	95	**(79 - 119)**	**2.4**	**(0-20)**	**SW846 8260B**
Toluene	**82**	**(75 - 122)**			**SW846 8260B**
	85	**(75 - 122)**	**3.4**	**(0-20)**	**SW846 8260B**
Trichloroethene	**103**	**(81 - 121)**			**SW846 8260B**
	101	**(81 - 121)**	**2.1**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(80 - 120)
	100	(80 - 120)
1,2-Dichloroethane-d4	99	(72 - 127)
	98	(72 - 127)
4-Bromofluorobenzene	100	(79 - 119)
	102	(79 - 119)
Toluene-d8	99	(79 - 119)
	99	(79 - 119)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: D1C230236 **Work Order #...:** DXV9K1CL-MS **Matrix.....:** WATER
MS Lot-Sample #: D1C230220-003 DXV9K1CM-MSD
Date Sampled...: 03/22/01 14:30 **Date Received..:** 03/23/01
Prep Date.....: 04/04/01 **Analysis Date..:** 04/04/01
Prep Batch #...: 1095213 **Analysis Time..:** 13:55
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	**ND**	**10.0**	**9.54**	**ug/L**	**95**		**SW846 8260B**
	ND	**10.0**	**9.49**	**ug/L**	**95**	**0.58**	**SW846 8260B**
Chlorobenzene	**ND**	**10.0**	**8.88**	**ug/L**	**89**		**SW846 8260B**
	ND	**10.0**	**9.38**	**ug/L**	**94**	**5.4**	**SW846 8260B**
1,1-Dichloroethene	**ND**	**10.0**	**9.70**	**ug/L**	**97**		**SW846 8260B**
	ND	**10.0**	**9.47**	**ug/L**	**95**	**2.4**	**SW846 8260B**
Toluene	**ND**	**10.0**	**8.23**	**ug/L**	**82**		**SW846 8260B**
	ND	**10.0**	**8.51**	**ug/L**	**85**	**3.4**	**SW846 8260B**
Trichloroethene	**ND**	**10.0**	**10.3**	**ug/L**	**103**		**SW846 8260B**
	ND	**10.0**	**10.1**	**ug/L**	**101**	**2.1**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(80 - 120)
	100	(80 - 120)
1,2-Dichloroethane-d4	99	(72 - 127)
	98	(72 - 127)
4-Bromofluorobenzene	100	(79 - 119)
	102	(79 - 119)
Toluene-d8	99	(79 - 119)
	99	(79 - 119)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: D1C230236 **Work Order #...:** DXX7Q1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C260000-169 DXX7Q1AD-LCSD
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085169 **Analysis Time..:** 17:35
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Phenol	80	(50 - 90)			SW846 8270C
	81	(50 - 90)	1.0	(0-31)	SW846 8270C
2-Chlorophenol	79	(52 - 92)			SW846 8270C
	80	(52 - 92)	2.1	(0-33)	SW846 8270C
1,4-Dichlorobenzene	63	(38 - 87)			SW846 8270C
	57	(38 - 87)	10	(0-37)	SW846 8270C
N-Nitrosodi-n-propyl-amine	77	(48 - 88)			SW846 8270C
	83	(48 - 88)	8.5	(0-33)	SW846 8270C
1,2,4-Trichloro-benzene	65	(43 - 88)			SW846 8270C
	59	(43 - 88)	10	(0-35)	SW846 8270C
Acenaphthene	76	(52 - 93)			SW846 8270C
	76	(52 - 93)	0.25	(0-28)	SW846 8270C
4-Nitrophenol	122 a	(41 - 108)			SW846 8270C
	114 a	(41 - 108)	6.9	(0-40)	SW846 8270C
2,4-Dinitrotoluene	96	(56 - 107)			SW846 8270C
	102	(56 - 107)	6.2	(0-30)	SW846 8270C
Pentachlorophenol	100	(42 - 105)			SW846 8270C
	103	(42 - 105)	2.5	(0-34)	SW846 8270C
Pyrene	79	(54 - 104)			SW846 8270C
	83	(54 - 104)	5.0	(0-31)	SW846 8270C
4-Chloro-3-methylphenol	90	(55 - 95)			SW846 8270C
	92	(55 - 95)	2.4	(0-34)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	80	(37 - 90)
	83	(37 - 90)
Phenol-d5	83	(41 - 91)
	85	(41 - 91)
Nitrobenzene-d5	82	(43 - 94)
	85	(43 - 94)
2-Fluorobiphenyl	68	(33 - 90)
	71	(33 - 90)
2,4,6-Tribromophenol	96	(42 - 103)
	92	(42 - 103)
Terphenyl-d14	82	(29 - 112)
	85	(29 - 112)

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: D1C230236 **Work Order #...:** DXX7Q1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C260000-169 DXX7Q1AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: D1C230236 Work Order #...: DXX7Q1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: D1C260000-169 DXX7Q1AD-LCSD
Prep Date.....: 03/26/01 Analysis Date..: 03/28/01
Prep Batch #...: 1085169 Analysis Time..: 17:35
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Phenol	150	120	ug/L	80		SW846 8270C
	150	121	ug/L	81	1.0	SW846 8270C
2-Chlorophenol	150	118	ug/L	79		SW846 8270C
	150	120	ug/L	80	2.1	SW846 8270C
1,4-Dichlorobenzene	100	63.1	ug/L	63		SW846 8270C
	100	56.9	ug/L	57	10	SW846 8270C
N-Nitrosodi-n-propyl-amine	100	76.5	ug/L	77		SW846 8270C
	100	83.3	ug/L	83	8.5	SW846 8270C
1,2,4-Trichloro-benzene	100	65.3	ug/L	65		SW846 8270C
	100	59.0	ug/L	59	10	SW846 8270C
Acenaphthene	100	76.0	ug/L	76		SW846 8270C
	100	75.9	ug/L	76	0.25	SW846 8270C
4-Nitrophenol	150	184 a	ug/L	122		SW846 8270C
	150	171 a	ug/L	114	6.9	SW846 8270C
2,4-Dinitrotoluene	100	96.1	ug/L	96		SW846 8270C
	100	102	ug/L	102	6.2	SW846 8270C
Pentachlorophenol	150	150	ug/L	100		SW846 8270C
	150	154	ug/L	103	2.5	SW846 8270C
Pyrene	100	78.6	ug/L	79		SW846 8270C
	100	82.6	ug/L	83	5.0	SW846 8270C
4-Chloro-3-methylphenol	150	135	ug/L	90		SW846 8270C
	150	138	ug/L	92	2.4	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	80	(37 - 90)
	83	(37 - 90)
Phenol-d5	83	(41 - 91)
	85	(41 - 91)
Nitrobenzene-d5	82	(43 - 94)
	85	(43 - 94)
2-Fluorobiphenyl	68	(33 - 90)
	71	(33 - 90)
2,4,6-Tribromophenol	96	(42 - 103)
	92	(42 - 103)
Terphenyl-d14	82	(29 - 112)
	85	(29 - 112)

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: D1C230236 **Work Order #...:** DXX7Q1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C260000-169 DXX7Q1AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D1C230236 **Work Order #...:** DXX7Q1AA **Matrix.....:** WATER
MB Lot-Sample #: D1C260000-169

Prep Date.....: 03/26/01 **Analysis Time..:** 17:12
Analysis Date..: 03/28/01 **Prep Batch #...:** 1085169
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Di-n-butyl phthalate	ND	10	ug/L	SW846 8270C
1,3-Dichlorobenzene	ND	10	ug/L	SW846 8270C
Acenaphthylene	ND	10	ug/L	SW846 8270C
Phenol	ND	10	ug/L	SW846 8270C
2-Chlorophenol	ND	10	ug/L	SW846 8270C
bis(2-Chloroethyl)-ether	ND	10	ug/L	SW846 8270C
bis(2-Chloroethoxy) methane	ND	10	ug/L	SW846 8270C
1,4-Dichlorobenzene	ND	10	ug/L	SW846 8270C
1,2-Dichlorobenzene	ND	10	ug/L	SW846 8270C
2-Methylphenol	ND	10	ug/L	SW846 8270C
bis(2-Ethylhexyl) phthalate	ND	10	ug/L	SW846 8270C
2,2'-oxybis(1-Chloropropa	ND	10	ug/L	SW846 8270C
4-Methylphenol	ND	10	ug/L	SW846 8270C
N-Nitrosodi-n-propyl-amine	ND	10	ug/L	SW846 8270C
Hexachloroethane	ND	10	ug/L	SW846 8270C
Nitrobenzene	ND	10	ug/L	SW846 8270C
Isophorone	ND	10	ug/L	SW846 8270C
2-Nitrophenol	ND	10	ug/L	SW846 8270C
2,4-Dimethylphenol	ND	10	ug/L	SW846 8270C
2,4-Dichlorophenol	ND	10	ug/L	SW846 8270C
1,2,4-Trichloro-benzene	ND	10	ug/L	SW846 8270C
Naphthalene	ND	10	ug/L	SW846 8270C
4-Chloroaniline	ND	10	ug/L	SW846 8270C
Hexachlorobutadiene	ND	10	ug/L	SW846 8270C
2-Methylnaphthalene	ND	10	ug/L	SW846 8270C
Hexachlorocyclopenta-diene	ND	50	ug/L	SW846 8270C
2,4,5-Trichloro-phenol	ND	10	ug/L	SW846 8270C
2,4,6-Trichloro-phenol	ND	10	ug/L	SW846 8270C
2-Chloronaphthalene	ND	10	ug/L	SW846 8270C
Dimethyl phthalate	ND	10	ug/L	SW846 8270C
Acenaphthene	ND	10	ug/L	SW846 8270C
3-Nitroaniline	ND	50	ug/L	SW846 8270C
2,4-Dinitrophenol	ND	50	ug/L	SW846 8270C

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D1C230236 **Work Order #...:** DXX7Q1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
4-Nitrophenol	ND	50	ug/L	SW846 8270C
Dibenzofuran	ND	10	ug/L	SW846 8270C
2,4-Dinitrotoluene	ND	10	ug/L	SW846 8270C
2,6-Dinitrotoluene	ND	10	ug/L	SW846 8270C
Diethyl phthalate	ND	10	ug/L	SW846 8270C
4-Chlorophenyl phenyl ether	ND	10	ug/L	SW846 8270C
Fluorene	ND	10	ug/L	SW846 8270C
4-Nitroaniline	ND	50	ug/L	SW846 8270C
4,6-Dinitro-2-methylphenol	ND	50	ug/L	SW846 8270C
N-Nitrosodiphenylamine	ND	10	ug/L	SW846 8270C
4-Bromophenyl phenyl ether	ND	10	ug/L	SW846 8270C
Hexachlorobenzene	ND	10	ug/L	SW846 8270C
Pentachlorophenol	ND	50	ug/L	SW846 8270C
Phenanthrene	ND	10	ug/L	SW846 8270C
Anthracene	ND	10	ug/L	SW846 8270C
Fluoranthene	ND	10	ug/L	SW846 8270C
Pyrene	ND	10	ug/L	SW846 8270C
Butyl benzyl phthalate	ND	10	ug/L	SW846 8270C
3,3'-Dichlorobenzidine	ND	50	ug/L	SW846 8270C
Benzo(a)anthracene	ND	10	ug/L	SW846 8270C
Chrysene	ND	10	ug/L	SW846 8270C
Di-n-octyl phthalate	ND	10	ug/L	SW846 8270C
Benzo(b)fluoranthene	ND	10	ug/L	SW846 8270C
Benzo(k)fluoranthene	ND	10	ug/L	SW846 8270C
Benzo(a)pyrene	ND	10	ug/L	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	SW846 8270C
Dibenz(a,h)anthracene	ND	10	ug/L	SW846 8270C
Benzo(ghi)perylene	ND	10	ug/L	SW846 8270C
4-Chloro-3-methylphenol	ND	10	ug/L	SW846 8270C
2-Nitroaniline	ND	50	ug/L	SW846 8270C
Acetophenone	ND	10	ug/L	SW846 8270C
2-Acetylaminofluorene	ND	100	ug/L	SW846 8270C
4-Aminobiphenyl	ND	50	ug/L	SW846 8270C
Aniline	ND	10	ug/L	SW846 8270C
Aramite	ND	20	ug/L	SW846 8270C
Benzyl alcohol	ND	10	ug/L	SW846 8270C
2-sec-Butyl-4,6-dinitrophenol	ND	20	ug/L	SW846 8270C
2,6-Dichlorophenol	ND	10	ug/L	SW846 8270C
4-Dimethylaminoazobenzene	ND	20	ug/L	SW846 8270C
7,12-Dimethylbenz(a)-anthracene	ND	20	ug/L	SW846 8270C

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D1C230236 **Work Order #...:** DXX7Q1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
3,3'-Dimethylbenzidine	ND	20	ug/L	SW846 8270C
alpha,alpha-Dimethylphene	ND	50	ug/L	SW846 8270C
1,3-Dinitrobenzene	ND	10	ug/L	SW846 8270C
Diphenylamine	ND	10	ug/L	SW846 8270C
Ethyl methanesulfonate	ND	10	ug/L	SW846 8270C
Hexachloropropene	ND	100	ug/L	SW846 8270C
Isosafrole	ND	20	ug/L	SW846 8270C
Methapyrilene	ND	50	ug/L	SW846 8270C
3-Methylcholanthrene	ND	20	ug/L	SW846 8270C
Methyl methanesulfonate	ND	10	ug/L	SW846 8270C
3-Methylphenol	ND	10	ug/L	SW846 8270C
1,4-Naphthoquinone	ND	50	ug/L	SW846 8270C
1-Naphthylamine	ND	10	ug/L	SW846 8270C
2-Naphthylamine	ND	10	ug/L	SW846 8270C
N-Nitrosodi-n-butylamine	ND	10	ug/L	SW846 8270C
N-Nitrosodiethylamine	ND	10	ug/L	SW846 8270C
N-Nitrosodimethylamine	ND	10	ug/L	SW846 8270C
N-Nitrosomethylethylamine	ND	10	ug/L	SW846 8270C
N-Nitrosomorpholine	ND	10	ug/L	SW846 8270C
N-Nitrosopiperidine	ND	10	ug/L	SW846 8270C
N-Nitrosopyrrolidine	ND	10	ug/L	SW846 8270C
5-Nitro-o-toluidine	ND	20	ug/L	SW846 8270C
Pentachlorobenzene	ND	10	ug/L	SW846 8270C
Pentachloroethane	ND	50	ug/L	SW846 8270C
Pentachloronitrobenzene	ND	50	ug/L	SW846 8270C
Phenacetin	ND	20	ug/L	SW846 8270C
2-Picoline	ND	20	ug/L	SW846 8270C
Pronamide	ND	20	ug/L	SW846 8270C
Pyridine	ND	20	ug/L	SW846 8270C
Safrole	ND	20	ug/L	SW846 8270C
1,2,4,5-Tetrachloro-benzene	ND	10	ug/L	SW846 8270C
2,3,4,6-Tetrachlorophenol	ND	50	ug/L	SW846 8270C
2-Toluidine	ND	10	ug/L	SW846 8270C
1,3,5-Trinitrobenzene	ND	50	ug/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	85	(37 - 90)
Phenol-d5	82	(41 - 91)
Nitrobenzene-d5	86	(43 - 94)
2-Fluorobiphenyl	76	(33 - 90)
2,4,6-Tribromophenol	93	(42 - 103)
Terphenyl-d14	84	(29 - 112)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D1C230236 **Work Order #...:** DXX7Q1AA **Matrix.....:** WATER

NOTE(S):

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

US GEOLOGICAL SURVEY

Method Blank Report

GC/MS Semivolatiles

Lot-Sample #: D1C260000-169 B **Work Order #:** DXX7Q1AA **Matrix:** WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/L

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: D1C230236 **Work Order #...:** DXX851AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C260000-198 DXX851AD-LCSD
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085198 **Analysis Time..:** 08:58
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aldrin	**89**	**(55 - 137)**			**SW846 8081A**
	87	**(55 - 137)**	**2.1**	**(0-30)**	**SW846 8081A**
gamma-BHC (Lindane)	**99**	**(68 - 142)**			**SW846 8081A**
	94	**(68 - 142)**	**5.2**	**(0-30)**	**SW846 8081A**
4,4'-DDT	**97**	**(68 - 147)**			**SW846 8081A**
	91	**(68 - 147)**	**5.8**	**(0-30)**	**SW846 8081A**
Dieldrin	**100**	**(68 - 146)**			**SW846 8081A**
	95	**(68 - 146)**	**5.6**	**(0-30)**	**SW846 8081A**
Endrin	**99**	**(66 - 143)**			**SW846 8081A**
	93	**(66 - 143)**	**6.1**	**(0-30)**	**SW846 8081A**
Heptachlor	**89**	**(59 - 143)**			**SW846 8081A**
	87	**(59 - 143)**	**2.3**	**(0-30)**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	110	(15 - 162)
	106	(15 - 162)
Tetrachloro-m-xylene	92	(49 - 133)
	93	(49 - 133)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: D1C230236 **Work Order #...:** DXX851AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C260000-198 DXX851AD-LCSD
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085198 **Analysis Time..:** 08:58
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Aldrin	**0.500**	**0.444**	**ug/L**	**89**		**SW846 8081A**
	0.500	**0.434**	**ug/L**	**87**	**2.1**	**SW846 8081A**
gamma-BHC (Lindane)	**0.500**	**0.497**	**ug/L**	**99**		**SW846 8081A**
	0.500	**0.472**	**ug/L**	**94**	**5.2**	**SW846 8081A**
4,4'-DDT	**0.500**	**0.483**	**ug/L**	**97**		**SW846 8081A**
	0.500	**0.456**	**ug/L**	**91**	**5.8**	**SW846 8081A**
Dieldrin	**0.500**	**0.501**	**ug/L**	**100**		**SW846 8081A**
	0.500	**0.473**	**ug/L**	**95**	**5.6**	**SW846 8081A**
Endrin	**0.500**	**0.495**	**ug/L**	**99**		**SW846 8081A**
	0.500	**0.465**	**ug/L**	**93**	**6.1**	**SW846 8081A**
Heptachlor	**0.500**	**0.447**	**ug/L**	**89**		**SW846 8081A**
	0.500	**0.437**	**ug/L**	**87**	**2.3**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	110	(15 - 162)
	106	(15 - 162)
Tetrachloro-m-xylene	92	(49 - 133)
	93	(49 - 133)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: D1C230236 **Work Order #...:** DXX851AA **Matrix.....:** WATER
MB Lot-Sample #: D1C260000-198

Prep Date.....: 03/26/01 **Analysis Time..:** 08:29

Analysis Date..: 03/28/01 **Prep Batch #...:** 1085198
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Diallate	ND	1.0	ug/L	SW846 8081A
Isodrin	ND	0.10	ug/L	SW846 8081A
Kepone	ND	1.0	ug/L	SW846 8081A
Aldrin	ND	0.050	ug/L	SW846 8081A
alpha-BHC	ND	0.050	ug/L	SW846 8081A
beta-BHC	ND	0.050	ug/L	SW846 8081A
delta-BHC	ND	0.050	ug/L	SW846 8081A
gamma-BHC (Lindane)	ND	0.050	ug/L	SW846 8081A
alpha-Chlordane	ND	0.050	ug/L	SW846 8081A
gamma-Chlordane	ND	0.050	ug/L	SW846 8081A
4,4'-DDD	ND	0.050	ug/L	SW846 8081A
4,4'-DDE	ND	0.050	ug/L	SW846 8081A
4,4'-DDT	ND	0.050	ug/L	SW846 8081A
Dieldrin	ND	0.050	ug/L	SW846 8081A
Endosulfan I	ND	0.050	ug/L	SW846 8081A
Endosulfan II	ND	0.050	ug/L	SW846 8081A
Endosulfan sulfate	ND	0.050	ug/L	SW846 8081A
Endrin	ND	0.050	ug/L	SW846 8081A
Endrin aldehyde	ND	0.050	ug/L	SW846 8081A
Heptachlor	ND	0.050	ug/L	SW846 8081A
Heptachlor epoxide	ND	0.050	ug/L	SW846 8081A
Methoxychlor	ND	0.10	ug/L	SW846 8081A
Toxaphene	ND	2.0	ug/L	SW846 8081A
Endrin ketone	ND	0.050	ug/L	SW846 8081A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	104	(15 - 162)
Tetrachloro-m-xylene	85	(49 - 133)

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: D1C230236 **Work Order #...:** DXTJP1D1-MS **Matrix.....:** WATER
MS Lot-Sample #: D1C220263-006 DXTJP1D2-MSD
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085198 **Analysis Time..:** 13:25
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aldrin	**95**	**(55 - 137)**			**SW846 8081A**
	83	**(55 - 137)**	**13**	**(0-30)**	**SW846 8081A**
gamma-BHC (Lindane)	**106**	**(68 - 142)**			**SW846 8081A**
	95	**(68 - 142)**	**11**	**(0-30)**	**SW846 8081A**
4,4'-DDT	**100**	**(68 - 147)**			**SW846 8081A**
	92	**(68 - 147)**	**7.9**	**(0-30)**	**SW846 8081A**
Dieldrin	**101**	**(68 - 146)**			**SW846 8081A**
	90	**(68 - 146)**	**11**	**(0-30)**	**SW846 8081A**
Endrin	**98**	**(66 - 143)**			**SW846 8081A**
	84	**(66 - 143)**	**16**	**(0-30)**	**SW846 8081A**
Heptachlor	**93**	**(59 - 143)**			**SW846 8081A**
	83	**(59 - 143)**	**11**	**(0-30)**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	111	(15 - 162)
	101	(15 - 162)
Tetrachloro-m-xylene	101	(49 - 133)
	84	(49 - 133)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: D1C230236 **Work Order #...:** DXTJP1D1-MS **Matrix.....:** WATER
MS Lot-Sample #: D1C220263-006 DXTJP1D2-MSD
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085198 **Analysis Time..:** 13:25
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Aldrin	**ND**	**0.504**	**0.476**	**ug/L**	**95**		**SW846 8081A**
	ND	**0.496**	**0.414**	**ug/L**	**83**	**13**	**SW846 8081A**
gamma-BHC (Lindane)	**ND**	**0.504**	**0.534**	**ug/L**	**106**		**SW846 8081A**
	ND	**0.496**	**0.473**	**ug/L**	**95**	**11**	**SW846 8081A**
4,4'-DDT	**ND**	**0.504**	**0.503**	**ug/L**	**100**		**SW846 8081A**
	ND	**0.496**	**0.458**	**ug/L**	**92**	**7.9**	**SW846 8081A**
Dieldrin	**ND**	**0.504**	**0.508**	**ug/L**	**101**		**SW846 8081A**
	ND	**0.496**	**0.447**	**ug/L**	**90**	**11**	**SW846 8081A**
Endrin	**ND**	**0.504**	**0.493**	**ug/L**	**98**		**SW846 8081A**
	ND	**0.496**	**0.416**	**ug/L**	**84**	**16**	**SW846 8081A**
Heptachlor	**ND**	**0.504**	**0.468**	**ug/L**	**93**		**SW846 8081A**
	ND	**0.496**	**0.412**	**ug/L**	**83**	**11**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	111	(15 - 162)
	101	(15 - 162)
Tetrachloro-m-xylene	101	(49 - 133)
	84	(49 - 133)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: D1C230236 **Work Order #...:** DXX881AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C260000-201 DXX881AD-LCSD
Prep Date.....: 03/26/01 **Analysis Date..:** 03/27/01
Prep Batch #...: 1085201 **Analysis Time..:** 21:09
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aroclor 1016	**105**	**(73 - 123)**			**SW846 8082**
	97	**(73 - 123)**	**7.4**	**(0-20)**	**SW846 8082**
Aroclor 1260	**107**	**(77 - 120)**			**SW846 8082**
	100	**(77 - 120)**	**6.4**	**(0-20)**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	100	(52 - 129)
	96	(52 - 129)
Tetrachloro-m-xylene	99	(54 - 113)
	91	(54 - 113)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: D1C230236 **Work Order #...:** DXX881AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C260000-201 DXX881AD-LCSD
Prep Date.....: 03/26/01 **Analysis Date..:** 03/27/01
Prep Batch #...: 1085201 **Analysis Time..:** 21:09
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Aroclor 1016	**2.00**	**2.09**	**ug/L**	**105**		**SW846 8082**
	2.00	**1.94**	**ug/L**	**97**	**7.4**	**SW846 8082**
Aroclor 1260	**2.00**	**2.14**	**ug/L**	**107**		**SW846 8082**
	2.00	**2.00**	**ug/L**	**100**	**6.4**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	100	(52 - 129)
	96	(52 - 129)
Tetrachloro-m-xylene	99	(54 - 113)
	91	(54 - 113)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: D1C230236 **Work Order #...:** DXX881AA **Matrix.....:** WATER
MB Lot-Sample #: D1C260000-201

Prep Date.....: 03/26/01 **Analysis Time..:** 20:36
Analysis Date..: 03/27/01 **Prep Batch #...:** 1085201
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Aroclor 1016	ND	1.0	ug/L	SW846 8082
Aroclor 1221	ND	1.0	ug/L	SW846 8082
Aroclor 1232	ND	1.0	ug/L	SW846 8082
Aroclor 1242	ND	1.0	ug/L	SW846 8082
Aroclor 1248	ND	1.0	ug/L	SW846 8082
Aroclor 1254	ND	1.0	ug/L	SW846 8082
Aroclor 1260	ND	1.0	ug/L	SW846 8082

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	98	(52 - 129)
Tetrachloro-m-xylene	83	(54 - 113)

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: D1C230236 **Work Order #...:** DXTJP1D3-MS **Matrix.....:** WATER
MS Lot-Sample #: D1C220263-006 DXTJP1D4-MSD
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085201 **Analysis Time..:** 01:39
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aroclor 1016	**109**	**(73 - 123)**			**SW846 8082**
	105	**(73 - 123)**	**4.3**	**(0-20)**	**SW846 8082**
Aroclor 1260	**106**	**(77 - 120)**			**SW846 8082**
	111	**(77 - 120)**	**4.0**	**(0-20)**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	99	(52 - 129)
	105	(52 - 129)
Tetrachloro-m-xylene	98	(54 - 113)
	101	(54 - 113)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: D1C230236 **Work Order #...:** DXTJP1D3-MS **Matrix.....:** WATER
MS Lot-Sample #: D1C220263-006 DXTJP1D4-MSD
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 03/26/01 **Analysis Date..:** 03/28/01
Prep Batch #...: 1085201 **Analysis Time..:** 01:39
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Aroclor 1016	**ND**	**2.16**	**2.36**	**ug/L**	**109**		**SW846 8082**
	ND	**2.25**	**2.36**	**ug/L**	**105**	**4.3**	**SW846 8082**
Aroclor 1260	**ND**	**2.16**	**2.30**	**ug/L**	**106**		**SW846 8082**
	ND	**2.25**	**2.49**	**ug/L**	**111**	**4.0**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	99	(52 - 129)
	105	(52 - 129)
Tetrachloro-m-xylene	98	(54 - 113)
	101	(54 - 113)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: D1C230236 **Work Order #...:** DX3371AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C280000-338 DX3371AD-LCSD
Prep Date.....: 03/28/01 **Analysis Date..:** 04/02/01
Prep Batch #...: 1087338 **Analysis Time..:** 15:10
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2,4-D	**67**	**(20 - 133)**			**SW846 8151A**
	86	**(20 - 133)**	**24**	**(0-30)**	**SW846 8151A**
2,4,5-T	**76**	**(20 - 155)**			**SW846 8151A**
	93	**(20 - 155)**	**20**	**(0-30)**	**SW846 8151A**
2,4,5-TP (Silvex)	**87**	**(23 - 146)**			**SW846 8151A**
	95	**(23 - 146)**	**9.2**	**(0-30)**	**SW846 8151A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	102	(20 - 150)
	118	(20 - 150)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: D1C230236 **Work Order #...:** DX3371AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C280000-338 DX3371AD-LCSD
Prep Date.....: 03/28/01 **Analysis Date..:** 04/02/01
Prep Batch #...: 1087338 **Analysis Time..:** 15:10
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
2,4-D	**8.00**	**5.39**	**ug/L**	**67**		**SW846 8151A**
	8.00	**6.85**	**ug/L**	**86**	**24**	**SW846 8151A**
2,4,5-T	**2.00**	**1.52**	**ug/L**	**76**		**SW846 8151A**
	2.00	**1.87**	**ug/L**	**93**	**20**	**SW846 8151A**
2,4,5-TP (Silvex)	**2.00**	**1.73**	**ug/L**	**87**		**SW846 8151A**
	2.00	**1.90**	**ug/L**	**95**	**9.2**	**SW846 8151A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	102	(20 - 150)
	118	(20 - 150)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: D1C230236 **Work Order #...:** DX3371AA **Matrix.....:** WATER
MB Lot-Sample #: D1C280000-338

Prep Date.....: 03/28/01 **Analysis Time..:** 14:35
Analysis Date..: 04/02/01 **Prep Batch #...:** 1087338
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
2,4-D	ND	4.0	ug/L	SW846 8151A
2,4,5-T	ND	1.0	ug/L	SW846 8151A
2,4,5-TP (Silvex)	ND	1.0	ug/L	SW846 8151A
Dinoseb	ND	0.60	ug/L	SW846 8151A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	79	(20 - 150)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: D1C230236 **Work Order #...:** DX1031AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C270000-277 DX1031AD-LCSD
Prep Date.....: 03/27/01 **Analysis Date..:** 03/31/01
Prep Batch #...: 1086277 **Analysis Time..:** 00:48
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzo(a)pyrene	**80**	**(65 - 121)**			**SW846 8310**
	86	**(65 - 121)**	**6.2**	**(0-20)**	**SW846 8310**
Fluorene	**80**	**(59 - 106)**			**SW846 8310**
	85	**(59 - 106)**	**6.1**	**(0-40)**	**SW846 8310**
Indeno(1,2,3-cd)pyrene	**66**	**(57 - 114)**			**SW846 8310**
	74	**(57 - 114)**	**12**	**(0-30)**	**SW846 8310**
Naphthalene	**77**	**(45 - 101)**			**SW846 8310**
	81	**(45 - 101)**	**5.3**	**(0-40)**	**SW846 8310**
Pyrene	**79**	**(64 - 119)**			**SW846 8310**
	84	**(64 - 119)**	**6.2**	**(0-40)**	**SW846 8310**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	80	(54 - 126)
	86	(54 - 126)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

HPLC

Client Lot #...: D1C230236 **Work Order #...:** DX1031AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D1C270000-277 DX1031AD-LCSD
Prep Date.....: 03/27/01 **Analysis Date..:** 03/31/01
Prep Batch #...: 1086277 **Analysis Time..:** 00:48
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzo(a)pyrene	**4.00**	**3.22**	**ug/L**	**80**		**SW846 8310**
	4.00	**3.42**	**ug/L**	**86**	**6.2**	**SW846 8310**
Fluorene	**4.00**	**3.21**	**ug/L**	**80**		**SW846 8310**
	4.00	**3.41**	**ug/L**	**85**	**6.1**	**SW846 8310**
Indeno(1,2,3-cd)pyrene	**4.00**	**2.64**	**ug/L**	**66**		**SW846 8310**
	4.00	**2.98**	**ug/L**	**74**	**12**	**SW846 8310**
Naphthalene	**4.00**	**3.08**	**ug/L**	**77**		**SW846 8310**
	4.00	**3.25**	**ug/L**	**81**	**5.3**	**SW846 8310**
Pyrene	**4.00**	**3.15**	**ug/L**	**79**		**SW846 8310**
	4.00	**3.35**	**ug/L**	**84**	**6.2**	**SW846 8310**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	80	(54 - 126)
	86	(54 - 126)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

HPLC

Client Lot #...: D1C230236 **Work Order #...:** DX1031AA **Matrix.....:** WATER
MB Lot-Sample #: D1C270000-277

Prep Date.....: 03/27/01 **Analysis Time..:** 00:19

Analysis Date..: 03/31/01 **Prep Batch #...:** 1086277
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acenaphthene	ND	1.0	ug/L	SW846 8310
Acenaphthylene	ND	1.0	ug/L	SW846 8310
Anthracene	ND	0.10	ug/L	SW846 8310
Benzo(a)anthracene	ND	0.10	ug/L	SW846 8310
Benzo(a)pyrene	ND	0.10	ug/L	SW846 8310
Benzo(b)fluoranthene	ND	0.10	ug/L	SW846 8310
Benzo(ghi)perylene	ND	0.20	ug/L	SW846 8310
Benzo(k)fluoranthene	ND	0.10	ug/L	SW846 8310
Chrysene	ND	0.20	ug/L	SW846 8310
Dibenzo(a,h)anthracene	ND	0.20	ug/L	SW846 8310
Fluoranthene	ND	0.20	ug/L	SW846 8310
Fluorene	ND	0.20	ug/L	SW846 8310
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L	SW846 8310
1-Methylnaphthalene	ND	1.0	ug/L	SW846 8310
2-Methylnaphthalene	ND	1.0	ug/L	SW846 8310
Naphthalene	ND	1.0	ug/L	SW846 8310
Phenanthrene	ND	0.20	ug/L	SW846 8310
Pyrene	ND	0.20	ug/L	SW846 8310

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	85	(54 - 126)

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: D1C230236 **Work Order #...:** DXTJP1D7-MS **Matrix.....:** WATER
MS Lot-Sample #: D1C220263-006 DXTJP1D8-MSD
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 03/27/01 **Analysis Date..:** 04/02/01
Prep Batch #...: 1086277 **Analysis Time..:** 16:07
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzo(a)pyrene	**92**	**(65 - 121)**			**SW846 8310**
	85	**(65 - 121)**	**8.4**	**(0-20)**	**SW846 8310**
Fluorene	**80**	**(59 - 106)**			**SW846 8310**
	81	**(59 - 106)**	**0.75**	**(0-40)**	**SW846 8310**
Indeno(1,2,3-cd)pyrene	**77**	**(57 - 114)**			**SW846 8310**
	75	**(57 - 114)**	**3.0**	**(0-30)**	**SW846 8310**
Naphthalene	**79**	**(45 - 101)**			**SW846 8310**
	81	**(45 - 101)**	**1.7**	**(0-40)**	**SW846 8310**
Pyrene	**80**	**(64 - 119)**			**SW846 8310**
	82	**(64 - 119)**	**2.5**	**(0-40)**	**SW846 8310**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	86	(54 - 126)
	83	(54 - 126)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

HPLC

Client Lot #...: D1C230236 **Work Order #...:** DXTJP1D7-MS **Matrix.....:** WATER
MS Lot-Sample #: D1C220263-006 DXTJP1D8-MSD
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 03/27/01 **Analysis Date..:** 04/02/01
Prep Batch #...: 1086277 **Analysis Time..:** 16:07
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzo(a)pyrene	**ND**	**3.97**	**3.66**	**ug/L**	**92**		**SW846 8310**
	ND	**3.91**	**3.31**	**ug/L**	**85**	**8.4**	**SW846 8310**
Fluorene	**ND**	**3.97**	**3.17**	**ug/L**	**80**		**SW846 8310**
	ND	**3.91**	**3.14**	**ug/L**	**81**	**0.75**	**SW846 8310**
Indeno(1,2,3-cd)pyrene	**ND**	**3.97**	**3.05**	**ug/L**	**77**		**SW846 8310**
	ND	**3.91**	**2.92**	**ug/L**	**75**	**3.0**	**SW846 8310**
Naphthalene	**ND**	**3.97**	**3.15**	**ug/L**	**79**		**SW846 8310**
	ND	**3.91**	**3.16**	**ug/L**	**81**	**1.7**	**SW846 8310**
Pyrene	**ND**	**3.97**	**3.19**	**ug/L**	**80**		**SW846 8310**
	ND	**3.91**	**3.22**	**ug/L**	**82**	**2.5**	**SW846 8310**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	86	(54 - 126)
	83	(54 - 126)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

Trace Level Organic Compounds

Client Lot #...: D1C230236 **Work Order #...:** DX2DP1AC **Matrix.....:** WATER
LCS Lot-Sample#: G1C270000-405
Prep Date.....: 03/27/01 **Analysis Date..:** 03/29/01
Prep Batch #...: 1086405 **Analysis Time..:** 04:10
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
2,3,7,8-TCDD	**92**	**(50 - 150)**	**SW846 8280A**
1,2,3,7,8-PeCDD	**94**	**(50 - 150)**	**SW846 8280A**
1,2,3,6,7,8-HxCDD	**86**	**(50 - 150)**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDD	**83**	**(50 - 150)**	**SW846 8280A**
OCDD	**91**	**(50 - 150)**	**SW846 8280A**
2,3,7,8-TCDF	**92**	**(50 - 150)**	**SW846 8280A**
1,2,3,7,8-PeCDF	**104**	**(50 - 150)**	**SW846 8280A**
1,2,3,6,7,8-HxCDF	**90**	**(50 - 150)**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDF	**93**	**(50 - 150)**	**SW846 8280A**
OCDF	**89**	**(50 - 150)**	**SW846 8280A**

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	81	(25 - 150)
13C-2,3,7,8-TCDF	78	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	94	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	90	(25 - 150)
13C-OCDD	87	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	99	(25 - 150)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: D1C230236 **Work Order #...:** DX2DP1AC **Matrix.....:** WATER
LCS Lot-Sample#: G1C270000-405
Prep Date.....: 03/27/01 **Analysis Date..:** 03/29/01
Prep Batch #...: 1086405 **Analysis Time..:** 04:10
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
2,3,7,8-TCDD	**25.0**	**23.0**	**ng/L**	**92**	**SW846 8280A**
1,2,3,7,8-PeCDD	**62.5**	**58.9**	**ng/L**	**94**	**SW846 8280A**
1,2,3,6,7,8-HxCDD	**62.5**	**53.9**	**ng/L**	**86**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDD	**62.5**	**52.1**	**ng/L**	**83**	**SW846 8280A**
OCDD	**125**	**114**	**ng/L**	**91**	**SW846 8280A**
2,3,7,8-TCDF	**25.0**	**22.9**	**ng/L**	**92**	**SW846 8280A**
1,2,3,7,8-PeCDF	**62.5**	**65.0**	**ng/L**	**104**	**SW846 8280A**
1,2,3,6,7,8-HxCDF	**62.5**	**56.0**	**ng/L**	**90**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDF	**62.5**	**58.2**	**ng/L**	**93**	**SW846 8280A**
OCDF	**125**	**112**	**ng/L**	**89**	**SW846 8280A**

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	81	(25 - 150)
13C-2,3,7,8-TCDF	78	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	94	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	90	(25 - 150)
13C-OCDD	87	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	99	(25 - 150)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

Trace Level Organic Compounds

Client Lot #...: D1C230236 **Work Order #...:** DX2DP1AA **Matrix.....:** WATER
MB Lot-Sample #: G1C270000-405

Prep Date.....: 03/27/01 **Analysis Time..:** 03:23
Analysis Date..: 03/29/01 **Prep Batch #...:** 1086405
Dilution Factor: 1

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	1.1	ng/L	SW846 8280A
Total TCDD	ND	1.1	ng/L	SW846 8280A
Total PeCDD	ND	3.4	ng/L	SW846 8280A
Total HxCDD	ND	1.6	ng/L	SW846 8280A
Total TCDF	ND	1.6	ng/L	SW846 8280A
Total PeCDF	ND	3.3	ng/L	SW846 8280A
Total HxCDF	ND	1.7	ng/L	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	78	(25 - 150)
13C-2,3,7,8-TCDF	78	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	91	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	93	(25 - 150)
13C-OCDD	82	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	94	(25 - 150)

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

Trace Level Organic Compounds

Client Lot #...: D1C230236 **Work Order #...:** DXTJP1CJ-MS **Matrix.....:** WATER
MS Lot-Sample #: D1C220263-006 DXTJP1CK-MSD
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01
Prep Date.....: 03/27/01 **Analysis Date..:** 03/29/01
Prep Batch #...: 1086405 **Analysis Time..:** 08:55
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2,3,7,8-TCDD	**94**	**(50 - 150)**			**SW846 8280A**
	93	**(50 - 150)**	**1.0**	**(0-50)**	**SW846 8280A**
1,2,3,7,8-PeCDD	**89**	**(50 - 150)**			**SW846 8280A**
	90	**(50 - 150)**	**0.26**	**(0-50)**	**SW846 8280A**
1,2,3,6,7,8-HxCDD	**88**	**(50 - 150)**			**SW846 8280A**
	87	**(50 - 150)**	**1.3**	**(0-50)**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDD	**82**	**(50 - 150)**			**SW846 8280A**
	86	**(50 - 150)**	**4.3**	**(0-50)**	**SW846 8280A**
OCDD	**91**	**(50 - 150)**			**SW846 8280A**
	91	**(50 - 150)**	**0.12**	**(0-50)**	**SW846 8280A**
2,3,7,8-TCDF	**87**	**(50 - 150)**			**SW846 8280A**
	84	**(50 - 150)**	**3.9**	**(0-50)**	**SW846 8280A**
1,2,3,7,8-PeCDF	**93**	**(50 - 150)**			**SW846 8280A**
	89	**(50 - 150)**	**4.4**	**(0-50)**	**SW846 8280A**
1,2,3,6,7,8-HxCDF	**88**	**(50 - 150)**			**SW846 8280A**
	86	**(50 - 150)**	**2.6**	**(0-50)**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDF	**91**	**(50 - 150)**			**SW846 8280A**
	89	**(50 - 150)**	**2.0**	**(0-50)**	**SW846 8280A**
OCDF	**91**	**(50 - 150)**			**SW846 8280A**
	90	**(50 - 150)**	**0.59**	**(0-50)**	**SW846 8280A**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	90	(25 - 150)
	90	(25 - 150)
13C-2,3,7,8-TCDF	92	(25 - 150)
	93	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	96	(25 - 150)
	96	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	93	(25 - 150)
	90	(25 - 150)
13C-OCDD	89	(25 - 150)
	90	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	103	(25 - 150)
	97	(25 - 150)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: D1C230236 Work Order #...: DXTJP1CJ-MS Matrix.....: WATER
MS Lot-Sample #: D1C220263-006 DXTJP1CK-MSD
Date Sampled...: 03/21/01 11:50 Date Received..: 03/22/01
Prep Date.....: 03/27/01 Analysis Date..: 03/29/01
Prep Batch #...: 1086405 Analysis Time..: 08:55
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
2,3,7,8-TCDD	ND	25.3	23.8	ng/L	94		SW846 8280A
	ND	24.2	22.6	ng/L	93	1.0	SW846 8280A
1,2,3,7,8-PeCDD	ND	63.2	56.5	ng/L	89		SW846 8280A
	ND	60.5	54.2	ng/L	90	0.26	SW846 8280A
1,2,3,6,7,8-HxCDD	ND	63.2	55.5	ng/L	88		SW846 8280A
	ND	60.5	52.5	ng/L	87	1.3	SW846 8280A
1,2,3,4,6,7,8-HpCDD	ND	63.2	52.0	ng/L	82		SW846 8280A
	ND	60.5	52.0	ng/L	86	4.3	SW846 8280A
OCDD	ND	126	115	ng/L	91		SW846 8280A
	ND	121	110	ng/L	91	0.12	SW846 8280A
2,3,7,8-TCDF	ND	25.3	22.0	ng/L	87		SW846 8280A
	ND	24.2	20.3	ng/L	84	3.9	SW846 8280A
1,2,3,7,8-PeCDF	ND	63.2	59.1	ng/L	93		SW846 8280A
	ND	60.5	54.2	ng/L	89	4.4	SW846 8280A
1,2,3,6,7,8-HxCDF	ND	63.2	55.9	ng/L	88		SW846 8280A
	ND	60.5	52.2	ng/L	86	2.6	SW846 8280A
1,2,3,4,6,7,8-HpCDF	ND	63.2	57.5	ng/L	91		SW846 8280A
	ND	60.5	54.0	ng/L	89	2.0	SW846 8280A
OCDF	ND	126	115	ng/L	91		SW846 8280A
	ND	121	109	ng/L	90	0.59	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	90	(25 - 150)
	90	(25 - 150)
13C-2,3,7,8-TCDF	92	(25 - 150)
	93	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	96	(25 - 150)
	96	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	93	(25 - 150)
	90	(25 - 150)
13C-OCDD	89	(25 - 150)
	90	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	103	(25 - 150)
	97	(25 - 150)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D1C230236 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Mercury	102	(78 - 118)			SW846 7470A	03/26-03/27/01	1085190
	100	(78 - 118)	1.4	(0-10)	SW846 7470A	03/26-03/27/01	1085190
		Dilution Factor: 1					
Aluminum	98	(89 - 109)			SW846 6010B	03/29-03/30/01	1087259
	99	(89 - 109)	1.8	(0-20)	SW846 6010B	03/29-03/30/01	1087259
		Dilution Factor: 1					
Barium	103	(92 - 115)			SW846 6010B	03/29-03/30/01	1087259
	103	(92 - 115)	0.43	(0-20)	SW846 6010B	03/29-03/30/01	1087259
		Dilution Factor: 1					
Beryllium	106	(91 - 117)			SW846 6010B	03/29-03/30/01	1087259
	106	(91 - 117)	0.73	(0-20)	SW846 6010B	03/29-03/30/01	1087259
		Dilution Factor: 1					
Calcium	97	(88 - 108)			SW846 6010B	03/29-03/30/01	1087259
	98	(88 - 108)	1.2	(0-20)	SW846 6010B	03/29-03/30/01	1087259
		Dilution Factor: 1					
Cobalt	103	(91 - 111)			SW846 6010B	03/29-03/30/01	1087259
	102	(91 - 111)	0.18	(0-20)	SW846 6010B	03/29-03/30/01	1087259
		Dilution Factor: 1					
Copper	102	(93 - 113)			SW846 6010B	03/29-03/30/01	1087259
	101	(93 - 113)	0.46	(0-20)	SW846 6010B	03/29-03/30/01	1087259
		Dilution Factor: 1					
Iron	102	(92 - 114)			SW846 6010B	03/29-03/30/01	1087259
	103	(92 - 114)	1.0	(0-20)	SW846 6010B	03/29-03/30/01	1087259
		Dilution Factor: 1					
Magnesium	103	(93 - 113)			SW846 6010B	03/29-03/30/01	1087259
	105	(93 - 113)	1.2	(0-20)	SW846 6010B	03/29-03/30/01	1087259
		Dilution Factor: 1					
Manganese	103	(89 - 114)			SW846 6010B	03/29-03/30/01	1087259
	102	(89 - 114)	0.26	(0-20)	SW846 6010B	03/29-03/30/01	1087259
		Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D1C230236 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Nickel	99	(89 - 109)			SW846 6010B	03/29-03/30/01	1087259
	98	(89 - 109)	0.57	(0-20)	SW846 6010B	03/29-03/30/01	1087259
		Dilution Factor: 1					
Potassium	93	(87 - 110)			SW846 6010B	03/29-03/30/01	1087259
	94	(87 - 110)	1.4	(0-20)	SW846 6010B	03/29-03/30/01	1087259
		Dilution Factor: 1					
Sodium	103	(91 - 111)			SW846 6010B	03/29-03/30/01	1087259
	104	(91 - 111)	1.0	(0-20)	SW846 6010B	03/29-03/30/01	1087259
		Dilution Factor: 1					
Tin	100	(89 - 109)			SW846 6010B	03/29-03/30/01	1087259
	100	(89 - 109)	0.31	(0-20)	SW846 6010B	03/29-03/30/01	1087259
		Dilution Factor: 1					
Vanadium	107	(88 - 115)			SW846 6010B	03/29-03/30/01	1087259
	106	(88 - 115)	0.08	(0-20)	SW846 6010B	03/29-03/30/01	1087259
		Dilution Factor: 1					
Zinc	99	(83 - 111)			SW846 6010B	03/29-03/30/01	1087259
	99	(83 - 111)	0.45	(0-20)	SW846 6010B	03/29-03/30/01	1087259
		Dilution Factor: 1					
Molybdenum	101	(90 - 110)			SW846 6010B	03/29-03/30/01	1087259
	101	(90 - 110)	0.03	(0-20)	SW846 6010B	03/29-03/30/01	1087259
		Dilution Factor: 1					
Antimony	105	(86 - 119)			SW846 6020	04/05-04/11/01	1089265
	110	(86 - 119)	3.8	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					
Arsenic	104	(86 - 114)			SW846 6020	04/05-04/11/01	1089265
	106	(86 - 114)	1.3	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					
Cadmium	101	(85 - 115)			SW846 6020	04/05-04/11/01	1089265
	104	(85 - 115)	2.5	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D1C230236 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Chromium	106	(85 - 115)			SW846 6020	04/05-04/11/01	1089265
	111	(85 - 115)	4.1	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					
Lead	101	(85 - 115)			SW846 6020	04/05-04/11/01	1089265
	104	(85 - 115)	2.0	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					
Selenium	102	(85 - 115)			SW846 6020	04/05-04/11/01	1089265
	104	(85 - 115)	2.2	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					
Silver	97	(85 - 114)			SW846 6020	04/05-04/11/01	1089265
	96	(85 - 114)	0.59	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					
Thallium	101	(85 - 115)			SW846 6020	04/05-04/11/01	1089265
	104	(85 - 115)	3.2	(0-20)	SW846 6020	04/05-04/11/01	1089265
		Dilution Factor: 1					

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D1C230236 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Mercury	5.00	5.09	ug/L	102		SW846 7470A	03/26-03/27/01	1085190
	5.00	5.02	ug/L	100	1.4	SW846 7470A	03/26-03/27/01	1085190
			Dilution Factor: 1					
Aluminum	2000	1950	ug/L	98		SW846 6010B	03/29-03/30/01	1087259
	2000	1990	ug/L	99	1.8	SW846 6010B	03/29-03/30/01	1087259
			Dilution Factor: 1					
Barium	2000	2070	ug/L	103		SW846 6010B	03/29-03/30/01	1087259
	2000	2060	ug/L	103	0.43	SW846 6010B	03/29-03/30/01	1087259
			Dilution Factor: 1					
Beryllium	50.0	53.1	ug/L	106		SW846 6010B	03/29-03/30/01	1087259
	50.0	52.8	ug/L	106	0.73	SW846 6010B	03/29-03/30/01	1087259
			Dilution Factor: 1					
Calcium	50000	48600	ug/L	97		SW846 6010B	03/29-03/30/01	1087259
	50000	49200	ug/L	98	1.2	SW846 6010B	03/29-03/30/01	1087259
			Dilution Factor: 1					
Cobalt	500	513	ug/L	103		SW846 6010B	03/29-03/30/01	1087259
	500	512	ug/L	102	0.18	SW846 6010B	03/29-03/30/01	1087259
			Dilution Factor: 1					
Copper	250	255	ug/L	102		SW846 6010B	03/29-03/30/01	1087259
	250	254	ug/L	101	0.46	SW846 6010B	03/29-03/30/01	1087259
			Dilution Factor: 1					
Iron	1000	1020	ug/L	102		SW846 6010B	03/29-03/30/01	1087259
	1000	1030	ug/L	103	1.0	SW846 6010B	03/29-03/30/01	1087259
			Dilution Factor: 1					
Magnesium	50000	51700	ug/L	103		SW846 6010B	03/29-03/30/01	1087259
	50000	52300	ug/L	105	1.2	SW846 6010B	03/29-03/30/01	1087259
			Dilution Factor: 1					
Manganese	500	513	ug/L	103		SW846 6010B	03/29-03/30/01	1087259
	500	512	ug/L	102	0.26	SW846 6010B	03/29-03/30/01	1087259
			Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D1C230236 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nickel	500	494	ug/L	99		SW846 6010B	03/29-03/30/01	1087259
	500	491	ug/L	98	0.57	SW846 6010B	03/29-03/30/01	1087259
			Dilution Factor: 1					
Potassium	50000	46500	ug/L	93		SW846 6010B	03/29-03/30/01	1087259
	50000	47200	ug/L	94	1.4	SW846 6010B	03/29-03/30/01	1087259
			Dilution Factor: 1					
Sodium	50000	51300	ug/L	103		SW846 6010B	03/29-03/30/01	1087259
	50000	51800	ug/L	104	1.0	SW846 6010B	03/29-03/30/01	1087259
			Dilution Factor: 1					
Tin	2000	2010	ug/L	100		SW846 6010B	03/29-03/30/01	1087259
	2000	2000	ug/L	100	0.31	SW846 6010B	03/29-03/30/01	1087259
			Dilution Factor: 1					
Vanadium	500	533	ug/L	107		SW846 6010B	03/29-03/30/01	1087259
	500	532	ug/L	106	0.08	SW846 6010B	03/29-03/30/01	1087259
			Dilution Factor: 1					
Zinc	500	495	ug/L	99		SW846 6010B	03/29-03/30/01	1087259
	500	497	ug/L	99	0.45	SW846 6010B	03/29-03/30/01	1087259
			Dilution Factor: 1					
Molybdenum	1000	1010	ug/L	101		SW846 6010B	03/29-03/30/01	1087259
	1000	1010	ug/L	101	0.03	SW846 6010B	03/29-03/30/01	1087259
			Dilution Factor: 1					
Antimony	200	211	ug/L	105		SW846 6020	04/05-04/11/01	1089265
	200	219	ug/L	110	3.8	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					
Arsenic	200	208	ug/L	104		SW846 6020	04/05-04/11/01	1089265
	200	211	ug/L	106	1.3	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					
Cadmium	200	202	ug/L	101		SW846 6020	04/05-04/11/01	1089265
	200	207	ug/L	104	2.5	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D1C230236 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chromium	200	213	ug/L	106		SW846 6020	04/05-04/11/01	1089265
	200	222	ug/L	111	4.1	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					
Lead	200	203	ug/L	101		SW846 6020	04/05-04/11/01	1089265
	200	207	ug/L	104	2.0	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					
Selenium	200	204	ug/L	102		SW846 6020	04/05-04/11/01	1089265
	200	209	ug/L	104	2.2	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					
Silver	200	194	ug/L	97		SW846 6020	04/05-04/11/01	1089265
	200	193	ug/L	96	0.59	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					
Thallium	200	202	ug/L	101		SW846 6020	04/05-04/11/01	1089265
	200	209	ug/L	104	3.2	SW846 6020	04/05-04/11/01	1089265
			Dilution Factor: 1					

NOTE(S):

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

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D1C230236 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: D1C260000-190 **Prep Batch #...:** 1085190						
Mercury	ND	0.20	ug/L	SW846 7470A	03/26-03/27/01	DX0A31AA
		Dilution Factor: 1				
		Analysis Time..: 14:21				
MB Lot-Sample #: D1C280000-259 **Prep Batch #...:** 1087259						
Aluminum	**67.5 B**	**100**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DX3G71AA**
		Dilution Factor: 1				
		Analysis Time..: 16:30				
Barium	ND	10.0	ug/L	SW846 6010B	03/29-03/30/01	DX3G71AC
		Dilution Factor: 1				
		Analysis Time..: 12:08				
Beryllium	ND	2.0	ug/L	SW846 6010B	03/29-03/30/01	DX3G71AD
		Dilution Factor: 1				
		Analysis Time..: 12:08				
Calcium	ND	200	ug/L	SW846 6010B	03/29-03/30/01	DX3G71AE
		Dilution Factor: 1				
		Analysis Time..: 16:30				
Cobalt	ND	10.0	ug/L	SW846 6010B	03/29-03/30/01	DX3G71AT
		Dilution Factor: 1				
		Analysis Time..: 12:08				
Copper	**2.2 B**	**20.0**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DX3G71AG**
		Dilution Factor: 1				
		Analysis Time..: 12:08				
Iron	ND	100	ug/L	SW846 6010B	03/29-03/30/01	DX3G71AH
		Dilution Factor: 1				
		Analysis Time..: 16:30				
Magnesium	ND	200	ug/L	SW846 6010B	03/29-03/30/01	DX3G71AJ
		Dilution Factor: 1				
		Analysis Time..: 16:30				
Manganese	ND	10.0	ug/L	SW846 6010B	03/29-03/30/01	DX3G71AK
		Dilution Factor: 1				
		Analysis Time..: 12:08				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D1C230236 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Nickel	ND	40.0	ug/L	SW846 6010B	03/29-03/30/01	DX3G71AL
		Dilution Factor: 1				
		Analysis Time..: 12:08				
Potassium	ND	3000	ug/L	SW846 6010B	03/29-03/30/01	DX3G71AM
		Dilution Factor: 1				
		Analysis Time..: 16:30				
Sodium	**2380 B**	**5000**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DX3G71AN**
		Dilution Factor: 1				
		Analysis Time..: 16:30				
Tin	ND	100	ug/L	SW846 6010B	03/29-03/30/01	DX3G71DE
		Dilution Factor: 1				
		Analysis Time..: 12:08				
Vanadium	ND	10.0	ug/L	SW846 6010B	03/29-03/30/01	DX3G71AP
		Dilution Factor: 1				
		Analysis Time..: 12:08				
Zinc	**3.4 B**	**20.0**	**ug/L**	**SW846 6010B**	**03/29-03/30/01**	**DX3G71AQ**
		Dilution Factor: 1				
		Analysis Time..: 12:08				
Molybdenum	ND	20.0	ug/L	SW846 6010B	03/29-03/30/01	DX3G71AX
		Dilution Factor: 1				
		Analysis Time..: 12:08				

MB Lot-Sample #: D1C300000-265 **Prep Batch #...:** 1089265

Antimony	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DX7PK1AA
		Dilution Factor: 1				
		Analysis Time..: 17:01				
Arsenic	ND	5.0	ug/L	SW846 6020	04/05-04/11/01	DX7PK1AC
		Dilution Factor: 1				
		Analysis Time..: 17:01				
Cadmium	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DX7PK1AD
		Dilution Factor: 1				
		Analysis Time..: 17:01				
Chromium	**0.86 B**	**1.0**	**ug/L**	**SW846 6020**	**04/05-04/11/01**	**DX7PK1AJ**
		Dilution Factor: 1				
		Analysis Time..: 17:01				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D1C230236 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Lead	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DX7PK1AE
		Dilution Factor: 1				
		Analysis Time..: 17:01				
Selenium	ND	5.0	ug/L	SW846 6020	04/05-04/11/01	DX7PK1AF
		Dilution Factor: 1				
		Analysis Time..: 17:01				
Silver	ND	1.0	ug/L	SW846 6020	04/05-04/11/01	DX7PK1AG
		Dilution Factor: 1				
		Analysis Time..: 17:01				
Thallium	**0.027 B**	**1.0**	**ug/L**	**SW846 6020**	**04/05-04/11/01**	**DX7PK1AH**
		Dilution Factor: 1				
		Analysis Time..: 17:01				

NOTE(S):

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

B Estimated result. Result is less than RL.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D1C230236 **Matrix.....:** WATER
Date Sampled...: 03/22/01 14:30 **Date Received..:** 03/23/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D1C230220-003 **Prep Batch #...:** 1085190							
Mercury	95	(78 - 118)			SW846 7470A	03/26-03/27/01	DXV9K1EQ
	94	(78 - 118)	0.63	(0-10)	SW846 7470A	03/26-03/27/01	DXV9K1ER
		Dilution Factor: 1					
		Analysis Time..: 14:33					
MS Lot-Sample #: D1C230220-003 **Prep Batch #...:** 1087259							
Aluminum	90	(89 - 109)			SW846 6010B	03/29-03/30/01	DXV9K1CT
	97	(89 - 109)	6.5	(0-20)	SW846 6010B	03/29-03/30/01	DXV9K1CU
		Dilution Factor: 1					
		Analysis Time..: 16:49					
Barium	96	(92 - 115)			SW846 6010B	03/29-03/30/01	DXV9K1CV
	101	(92 - 115)	5.6	(0-20)	SW846 6010B	03/29-03/30/01	DXV9K1CW
		Dilution Factor: 1					
		Analysis Time..: 12:47					
Beryllium	98	(91 - 117)			SW846 6010B	03/29-03/30/01	DXV9K1CX
	96	(91 - 117)	1.7	(0-20)	SW846 6010B	03/29-03/30/01	DXV9K1C0
		Dilution Factor: 1					
		Analysis Time..: 12:47					
Calcium	92	(88 - 108)			SW846 6010B	03/29-03/30/01	DXV9K1C1
	101	(88 - 108)	5.8	(0-20)	SW846 6010B	03/29-03/30/01	DXV9K1C2
		Dilution Factor: 1					
		Analysis Time..: 16:49					
Cobalt	100	(91 - 111)			SW846 6010B	03/29-03/30/01	DXV9K1EC
	100	(91 - 111)	0.54	(0-20)	SW846 6010B	03/29-03/30/01	DXV9K1ED
		Dilution Factor: 1					
		Analysis Time..: 12:47					
Copper	104	(93 - 113)			SW846 6010B	03/29-03/30/01	DXV9K1C5
	112	(93 - 113)	7.3	(0-20)	SW846 6010B	03/29-03/30/01	DXV9K1C6
		Dilution Factor: 1					
		Analysis Time..: 12:47					
Iron	97	(92 - 114)			SW846 6010B	03/29-03/30/01	DXV9K1C7
	103	(92 - 114)	5.8	(0-20)	SW846 6010B	03/29-03/30/01	DXV9K1C8
		Dilution Factor: 1					
		Analysis Time..: 16:49					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D1C230236 **Matrix.....:** WATER
Date Sampled...: 03/22/01 14:30 **Date Received..:** 03/23/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Magnesium	97	(93 - 113)			SW846 6010B	03/29-03/30/01	DXV9K1C9
	110	(93 - 113)	6.0	(0-20)	SW846 6010B	03/29-03/30/01	DXV9K1DA
		Dilution Factor: 1					
		Analysis Time..: 16:49					
Manganese	97	(89 - 114)			SW846 6010B	03/29-03/30/01	DXV9K1DC
	97	(89 - 114)	0.47	(0-20)	SW846 6010B	03/29-03/30/01	DXV9K1DD
		Dilution Factor: 1					
		Analysis Time..: 12:47					
Nickel	94	(89 - 109)			SW846 6010B	03/29-03/30/01	DXV9K1DE
	93	(89 - 109)	1.1	(0-20)	SW846 6010B	03/29-03/30/01	DXV9K1DF
		Dilution Factor: 1					
		Analysis Time..: 12:47					
Potassium	89	(87 - 110)			SW846 6010B	03/29-03/30/01	DXV9K1DG
	103	(87 - 110)	6.4	(0-20)	SW846 6010B	03/29-03/30/01	DXV9K1DH
		Dilution Factor: 1					
		Analysis Time..: 16:49					
Sodium	NC,MSB	(91 - 111)			SW846 6010B	03/29-03/30/01	DXV9K1DJ
	NC,MSB	(91 - 111)		(0-20)	SW846 6010B	03/29-03/30/01	DXV9K1DK
		Dilution Factor: 1					
		Analysis Time..: 16:49					
Tin	105	(89 - 109)			SW846 6010B	03/29-03/30/01	DXV9K1EV
	105	(89 - 109)	0.38	(0-20)	SW846 6010B	03/29-03/30/01	DXV9K1EW
		Dilution Factor: 1					
		Analysis Time..: 12:47					
Vanadium	100	(88 - 115)			SW846 6010B	03/29-03/30/01	DXV9K1DL
	101	(88 - 115)	0.38	(0-20)	SW846 6010B	03/29-03/30/01	DXV9K1DM
		Dilution Factor: 1					
		Analysis Time..: 12:47					
Zinc	99	(83 - 111)			SW846 6010B	03/29-03/30/01	DXV9K1DN
	94	(83 - 111)	5.0	(0-20)	SW846 6010B	03/29-03/30/01	DXV9K1DP
		Dilution Factor: 1					
		Analysis Time..: 12:47					
Molybdenum	100	(90 - 110)			SW846 6010B	03/29-03/30/01	DXV9K1EL
	101	(90 - 110)	0.72	(0-20)	SW846 6010B	03/29-03/30/01	DXV9K1EM
		Dilution Factor: 1					
		Analysis Time..: 12:47					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D1C230236 **Matrix.....:** WATER
Date Sampled...: 03/22/01 14:30 **Date Received..:** 03/23/01

NOTE(S):

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

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1C230236 **Matrix.....:** WATER
Date Sampled...: 03/22/01 14:30 **Date Received..:** 03/23/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D1C230220-003 **Prep Batch #...:** 1085190									
Mercury									
	ND	5.00	4.73	ug/L	95		SW846 7470A	03/26-03/27/01	DXV9K1EQ
	ND	5.00	4.70	ug/L	94	0.63	SW846 7470A	03/26-03/27/01	DXV9K1ER
			Dilution Factor: 1						
			Analysis Time..: 14:33						
MS Lot-Sample #: D1C230220-003 **Prep Batch #...:** 1087259									
Aluminum									
	83.7	2000	1890	ug/L	90		SW846 6010B	03/29-03/30/01	DXV9K1CT
	83.7	2000	2020	ug/L	97	6.5	SW846 6010B	03/29-03/30/01	DXV9K1CU
			Dilution Factor: 1						
			Analysis Time..: 16:49						
Barium									
	19.9	2000	1930	ug/L	96		SW846 6010B	03/29-03/30/01	DXV9K1CV
	19.9	2000	2040	ug/L	101	5.6	SW846 6010B	03/29-03/30/01	DXV9K1CW
			Dilution Factor: 1						
			Analysis Time..: 12:47						
Beryllium									
	ND	50.0	49.0	ug/L	98		SW846 6010B	03/29-03/30/01	DXV9K1CX
	ND	50.0	48.2	ug/L	96	1.7	SW846 6010B	03/29-03/30/01	DXV9K1C0
			Dilution Factor: 1						
			Analysis Time..: 12:47						
Calcium									
	29300	50000	75200	ug/L	92		SW846 6010B	03/29-03/30/01	DXV9K1C1
	29300	50000	79700	ug/L	101	5.8	SW846 6010B	03/29-03/30/01	DXV9K1C2
			Dilution Factor: 1						
			Analysis Time..: 16:49						
Cobalt									
	ND	500	501	ug/L	100		SW846 6010B	03/29-03/30/01	DXV9K1EC
	ND	500	498	ug/L	100	0.54	SW846 6010B	03/29-03/30/01	DXV9K1ED
			Dilution Factor: 1						
			Analysis Time..: 12:47						
Copper									
	3.6	250	263	ug/L	104		SW846 6010B	03/29-03/30/01	DXV9K1C5
	3.6	250	283	ug/L	112	7.3	SW846 6010B	03/29-03/30/01	DXV9K1C6
			Dilution Factor: 1						
			Analysis Time..: 12:47						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1C230236 **Matrix.....:** WATER
Date Sampled...: 03/22/01 14:30 **Date Received..:** 03/23/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron									
	100	1000	1070	ug/L	97		SW846 6010B	03/29-03/30/01	DXV9K1C7
	100	1000	1130	ug/L	103	5.8	SW846 6010B	03/29-03/30/01	DXV9K1C8
			Dilution Factor: 1						
			Analysis Time..: 16:49						
Magnesium									
	57700	50000	106000	ug/L	97		SW846 6010B	03/29-03/30/01	DXV9K1C9
	57700	50000	113000	ug/L	110	6.0	SW846 6010B	03/29-03/30/01	DXV9K1DA
			Dilution Factor: 1						
			Analysis Time..: 16:49						
Manganese									
	5.2	500	490	ug/L	97		SW846 6010B	03/29-03/30/01	DXV9K1DC
	5.2	500	488	ug/L	97	0.47	SW846 6010B	03/29-03/30/01	DXV9K1DD
			Dilution Factor: 1						
			Analysis Time..: 12:47						
Nickel									
	14.8	500	486	ug/L	94		SW846 6010B	03/29-03/30/01	DXV9K1DE
	14.8	500	481	ug/L	93	1.1	SW846 6010B	03/29-03/30/01	DXV9K1DF
			Dilution Factor: 1						
			Analysis Time..: 12:47						
Potassium									
	61000	50000	106000	ug/L	89		SW846 6010B	03/29-03/30/01	DXV9K1DG
	61000	50000	113000	ug/L	103	6.4	SW846 6010B	03/29-03/30/01	DXV9K1DH
			Dilution Factor: 1						
			Analysis Time..: 16:49						
Sodium									
	158000	50000	1590000	ug/L			SW846 6010B	03/29-03/30/01	DXV9K1DJ
			Qualifiers: NC,MSB						
	158000	50000	1680000	ug/L			SW846 6010B	03/29-03/30/01	DXV9K1DK
			Qualifiers: NC,MSB						
			Dilution Factor: 1						
			Analysis Time..: 16:49						
Tin									
	ND	2000	2110	ug/L	105		SW846 6010B	03/29-03/30/01	DXV9K1EV
	ND	2000	2100	ug/L	105	0.38	SW846 6010B	03/29-03/30/01	DXV9K1EW
			Dilution Factor: 1						
			Analysis Time..: 12:47						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1C230236 **Matrix.....:** WATER
Date Sampled...: 03/22/01 14:30 **Date Received..:** 03/23/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium									
	53.5	500	555	ug/L	100		SW846 6010B	03/29-03/30/01	DXV9K1DL
	53.5	500	557	ug/L	101	0.38	SW846 6010B	03/29-03/30/01	DXV9K1DM
			Dilution Factor: 1						
			Analysis Time..: 12:47						
Zinc									
	ND	500	493	ug/L	99		SW846 6010B	03/29-03/30/01	DXV9K1DN
	ND	500	469	ug/L	94	5.0	SW846 6010B	03/29-03/30/01	DXV9K1DP
			Dilution Factor: 1						
			Analysis Time..: 12:47						
Molybdenum									
	13.8	1000	1010	ug/L	100		SW846 6010B	03/29-03/30/01	DXV9K1EL
	13.8	1000	1020	ug/L	101	0.72	SW846 6010B	03/29-03/30/01	DXV9K1EM
			Dilution Factor: 1						
			Analysis Time..: 12:47						

NOTE(S):

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

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D1C230236 **Matrix.....:** WATER
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D1C220263-006 **Prep Batch #...:** 1089265							
Antimony	123 N	(86 - 119)			SW846 6020	04/05-04/11/01	DXTJP1C9
	120 N	(86 - 119)	2.7	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DA
		Dilution Factor: 1					
		Analysis Time..: 18:48					
Arsenic	108	(86 - 114)			SW846 6020	04/05-04/11/01	DXTJP1DC
	106	(86 - 114)	1.9	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DD
		Dilution Factor: 1					
		Analysis Time..: 18:48					
Cadmium	103	(85 - 115)			SW846 6020	04/05-04/11/01	DXTJP1DE
	104	(85 - 115)	1.2	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DF
		Dilution Factor: 1					
		Analysis Time..: 18:48					
Chromium	106	(85 - 115)			SW846 6020	04/05-04/11/01	DXTJP1DQ
	101	(85 - 115)	4.7	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DR
		Dilution Factor: 1					
		Analysis Time..: 18:48					
Lead	102	(85 - 115)			SW846 6020	04/05-04/11/01	DXTJP1DG
	104	(85 - 115)	2.4	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DH
		Dilution Factor: 1					
		Analysis Time..: 18:48					
Selenium	106	(85 - 115)			SW846 6020	04/05-04/11/01	DXTJP1DJ
	108	(85 - 115)	2.4	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DK
		Dilution Factor: 1					
		Analysis Time..: 18:48					
Silver	25 N	(85 - 114)			SW846 6020	04/05-04/11/01	DXTJP1DL
	31 N	(85 - 114)	20	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DM
		Dilution Factor: 1					
		Analysis Time..: 18:48					
Thallium	101	(85 - 115)			SW846 6020	04/05-04/11/01	DXTJP1DN
	103	(85 - 115)	1.4	(0-20)	SW846 6020	04/05-04/11/01	DXTJP1DP
		Dilution Factor: 1					
		Analysis Time..: 18:48					

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1C230236 **Matrix.....:** WATER
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D1C220263-006 **Prep Batch #...:** 1089265									
Antimony									
	ND	200	247 N	ug/L	123		SW846 6020	04/05-04/11/01	DXTJP1C9
	ND	200	240 N	ug/L	120	2.7	SW846 6020	04/05-04/11/01	DXTJP1DA
			Dilution Factor: 1						
			Analysis Time..: 18:48						
Arsenic									
	4.9	200	221	ug/L	108		SW846 6020	04/05-04/11/01	DXTJP1DC
	4.9	200	217	ug/L	106	1.9	SW846 6020	04/05-04/11/01	DXTJP1DD
			Dilution Factor: 1						
			Analysis Time..: 18:48						
Cadmium									
	ND	200	206	ug/L	103		SW846 6020	04/05-04/11/01	DXTJP1DE
	ND	200	208	ug/L	104	1.2	SW846 6020	04/05-04/11/01	DXTJP1DF
			Dilution Factor: 1						
			Analysis Time..: 18:48						
Chromium									
	3.5	200	215	ug/L	106		SW846 6020	04/05-04/11/01	DXTJP1DQ
	3.5	200	205	ug/L	101	4.7	SW846 6020	04/05-04/11/01	DXTJP1DR
			Dilution Factor: 1						
			Analysis Time..: 18:48						
Lead									
	ND	200	204	ug/L	102		SW846 6020	04/05-04/11/01	DXTJP1DG
	ND	200	209	ug/L	104	2.4	SW846 6020	04/05-04/11/01	DXTJP1DH
			Dilution Factor: 1						
			Analysis Time..: 18:48						
Selenium									
	8.4	200	219	ug/L	106		SW846 6020	04/05-04/11/01	DXTJP1DJ
	8.4	200	225	ug/L	108	2.4	SW846 6020	04/05-04/11/01	DXTJP1DK
			Dilution Factor: 1						
			Analysis Time..: 18:48						
Silver									
	ND	200	50.1 N	ug/L	25		SW846 6020	04/05-04/11/01	DXTJP1DL
	ND	200	61.3 N	ug/L	31	20	SW846 6020	04/05-04/11/01	DXTJP1DM
			Dilution Factor: 1						
			Analysis Time..: 18:48						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1C230236 **Matrix.....:** WATER
Date Sampled...: 03/21/01 11:50 **Date Received..:** 03/22/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Thallium									
	ND	200	202	ug/L	101		SW846 6020	04/05-04/11/01	DXTJP1DN
	ND	200	205	ug/L	103	1.4	SW846 6020	04/05-04/11/01	DXTJP1DP

Dilution Factor: 1
Analysis Time..: 18:48

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: D1C230236 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Sulfide		Work Order #: DX5F01AC	LCS Lot-Sample#: D1C290000-250		
	81	(70 - 130)	SW846 9030B/9034	03/29/01	1088250
		Dilution Factor: 1			
		Analysis Time..: 12:00			

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: D1C230236 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Sulfide			Work Order #:	DX5F01AC	LCS Lot-Sample#:	D1C290000-250	
	19.3	15.6	mg/L	81	SW846 9030B/9034	03/29/01	1088250
			Dilution Factor: 1				
			Analysis Time..: 12:00				

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: D1C230236 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total		WO#:EACXV1AC-LCS/EACXV1AD-LCSD LCS Lot-Sample#: D1D030000-368					
	94	(90 - 110)			SW846 9012A	04/03/01	1093368
	97	(90 - 110)	2.7	(0-18)	SW846 9012A	04/03/01	1093368
		Dilution Factor: 1					
Nitrate		WO#:EAXHK1AC-LCS/EAXHK1AD-LCSD LCS Lot-Sample#: D1D170000-364					
	96 X	(90 - 110)			MCAWW 353.2	03/23/01	1107364
	101 X	(90 - 110)	4.3	(0-10)	MCAWW 353.2	03/23/01	1107364
		Dilution Factor: 1					
Nitrite		WO#:DX0QV1AC-LCS/DX0QV1AD-LCSD LCS Lot-Sample#: D1C260000-344					
	96	(90 - 110)			MCAWW 354.1	03/23/01	1085344
	98	(90 - 110)	2.0	(0-10)	MCAWW 354.1	03/23/01	1085344
		Dilution Factor: 1					
Perchlorate		WO#:DX1G51AC-LCS/DX1G51AD-LCSD LCS Lot-Sample#: D1C270000-178					
	97	(80 - 120)			EPA 314.0	03/26/01	1086178
	98	(80 - 120)	1.1	(0-20)	EPA 314.0	03/26/01	1086178
		Dilution Factor: 1					
Sulfate		WO#:EAJNX1AC-LCS/EAJNX1AD-LCSD LCS Lot-Sample#: D1D060000-449					
	91	(90 - 110)			MCAWW 300.0A	04/05/01	1096449
	90	(90 - 110)	0.66	(0-10)	MCAWW 300.0A	04/05/01	1096449
		Dilution Factor: 1					
Total Dissolved Solids		WO#:DX5M11AC-LCS/DX5M11AD-LCSD LCS Lot-Sample#: D1C280000-426					
	104	(86 - 106)			MCAWW 160.1	03/28/01	1087426
	100	(86 - 106)	4.2	(0-20)	MCAWW 160.1	03/28/01	1087426
		Dilution Factor: 1					
Total Organic Halogens		WO#:EAQ1M1AD-LCS/EAQ1M1AE-LCSD LCS Lot-Sample#: D1D120000-313					
	106	(79 - 115)			SW846 9020B	04/10/01	1102313
	110	(79 - 115)	3.7	(0-18)	SW846 9020B	04/10/01	1102313
		Dilution Factor: 2					
Total Organic Carbon		WO#:EAXPD1AC-LCS/EAXPD1AD-LCSD LCS Lot-Sample#: D1D170000-405					
	105	(90 - 110)			SW846 9060	04/16/01	1107405
	101	(90 - 110)	4.3	(0-10)	SW846 9060	04/16/01	1107405
		Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: D1C230236 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #

NOTE(S):

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

X Recovered amount of spike is less than the project reporting limit.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: D1C230236 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total			WO#:EACXV1AC-LCS/EACXV1AD-LCSD			LCS Lot-Sample#: D1D030000-368		
	0.200	0.189	mg/L	94		SW846 9012A	04/03/01	1093368
	0.200	0.194	mg/L	97	2.7	SW846 9012A	04/03/01	1093368
			Dilution Factor: 1					
Nitrate			WO#:EAXHK1AC-LCS/EAXHK1AD-LCSD			LCS Lot-Sample#: D1D170000-364		
	0.0400	0.0386 X	mg/L	96		MCAWW 353.2	03/23/01	1107364
	0.0400	0.0403 X	mg/L	101	4.3	MCAWW 353.2	03/23/01	1107364
			Dilution Factor: 1					
Nitrite			WO#:DX0QV1AC-LCS/DX0QV1AD-LCSD			LCS Lot-Sample#: D1C260000-344		
	0.0400	0.0386	mg/L	96		MCAWW 354.1	03/23/01	1085344
	0.0400	0.0394	mg/L	98	2.0	MCAWW 354.1	03/23/01	1085344
			Dilution Factor: 1					
Perchlorate			WO#:DX1G51AC-LCS/DX1G51AD-LCSD			LCS Lot-Sample#: D1C270000-178		
	200	193	ug/L	97		EPA 314.0	03/26/01	1086178
	200	195	ug/L	98	1.1	EPA 314.0	03/26/01	1086178
			Dilution Factor: 1					
Sulfate			WO#:EAJNX1AC-LCS/EAJNX1AD-LCSD			LCS Lot-Sample#: D1D060000-449		
	25.0	22.7	mg/L	91		MCAWW 300.0A	04/05/01	1096449
	25.0	22.5	mg/L	90	0.66	MCAWW 300.0A	04/05/01	1096449
			Dilution Factor: 1					
Total Dissolved Solids			WO#:DX5M11AC-LCS/DX5M11AD-LCSD			LCS Lot-Sample#: D1C280000-426		
	1940	2020	mg/L	104		MCAWW 160.1	03/28/01	1087426
	1940	1940	mg/L	100	4.2	MCAWW 160.1	03/28/01	1087426
			Dilution Factor: 1					
Total Organic Halogens			WO#:EAQ1M1AD-LCS/EAQ1M1AE-LCSD			LCS Lot-Sample#: D1D120000-313		
	100	106	ug/L	106		SW846 9020B	04/10/01	1102313
	100	110	ug/L	110	3.7	SW846 9020B	04/10/01	1102313
			Dilution Factor: 2					
Total Organic Carbon			WO#:EAXPD1AC-LCS/EAXPD1AD-LCSD			LCS Lot-Sample#: D1D170000-405		
	25.0	26.4	mg/L	105		SW846 9060	04/16/01	1107405
	25.0	25.2	mg/L	101	4.3	SW846 9060	04/16/01	1107405
			Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: D1C230236 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #

NOTE(S):

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

X Recovered amount of spike is less than the project reporting limit.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: D1C230236 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total		Work Order #: EACXV1AA		MB Lot-Sample #:	D1D030000-368	
	ND	0.010	mg/L	SW846 9012A	04/03/01	1093368
		Dilution Factor: 1				
		Analysis Time..: 13:00				
Nitrate		Work Order #: EAXHK1AA		MB Lot-Sample #:	D1D170000-364	
	ND	0.10	mg/L	MCAWW 353.2	03/23/01	1107364
		Dilution Factor: 1				
		Analysis Time..: 10:30				
Nitrite		Work Order #: DX0QV1AA		MB Lot-Sample #:	D1C260000-344	
	ND	0.010	mg/L	MCAWW 354.1	03/23/01	1085344
		Dilution Factor: 1				
		Analysis Time..: 16:31				
Perchlorate		Work Order #: DX1G51AA		MB Lot-Sample #:	D1C270000-178	
	ND	20.0	ug/L	EPA 314.0	03/26/01	1086178
		Dilution Factor: 1				
		Analysis Time..: 10:01				
Sulfate		Work Order #: EAJNX1AA		MB Lot-Sample #:	D1D060000-449	
	ND	5.0	mg/L	MCAWW 300.0A	04/05/01	1096449
		Dilution Factor: 1				
		Analysis Time..: 18:35				
Total Dissolved Solids		Work Order #: DX5M11AA		MB Lot-Sample #:	D1C280000-426	
	ND	10.0	mg/L	MCAWW 160.1	03/28/01	1087426
		Dilution Factor: 1				
		Analysis Time..: 17:00				
Total Organic Halogens		Work Order #: EAQ1M1AA		MB Lot-Sample #:	D1D120000-313	
	3.9 B	**30.0**	**ug/L**	**SW846 9020B**	**04/10/01**	**1102313**
		Dilution Factor: 1				
		Analysis Time..: 12:00				
Total Organic Carbon		Work Order #: EAXPD1AA		MB Lot-Sample #:	D1D170000-405	
	ND	1.0	mg/L	SW846 9060	04/16/01	1107405
		Dilution Factor: 1				
		Analysis Time..: 12:00				
Total Sulfide		Work Order #: DX5F01AA		MB Lot-Sample #:	D1C290000-250	
	ND	4.0	mg/L	SW846 9030B/9034	03/29/01	1088250
		Dilution Factor: 1				
		Analysis Time..: 12:00				

(Continued on next page)

METHOD BLANK REPORT

General Chemistry

Client Lot #...: D1C230236 Matrix.....: WATER

NOTE(S):

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

B Estimated result. Result is less than RL.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: D1C230236 **Matrix.....:** WATER
Date Sampled...: 03/22/01 14:30 **Date Received..:** 03/23/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total		WO#: DXTJP1D9-MS/DXTJP1EA-MSD				MS Lot-Sample #: D1C220263-006	
	98	(90 - 110)			SW846 9012A	04/03/01	1093368
	98	(90 - 110)	0.40	(0-18)	SW846 9012A	04/03/01	1093368
		Dilution Factor: 1					
		Analysis Time..: 13:00					
Nitrite		WO#: DXV9K1D7-MS/DXV9K1D8-MSD				MS Lot-Sample #: D1C230220-003	
	98	(90 - 110)			MCAWW 354.1	03/23/01	1085326
	93	(90 - 110)	4.2	(0-10)	MCAWW 354.1	03/23/01	1085326
		Dilution Factor: 1					
		Analysis Time..: 10:46					
Perchlorate		WO#: DXTJP1CL-MS/DXTJP1CM-MSD				MS Lot-Sample #: D1C220263-006	
	95	(80 - 120)			EPA 314.0	03/26/01	1086178
	97	(80 - 120)	1.4	(0-20)	EPA 314.0	03/26/01	1086178
		Dilution Factor: 1					
		Analysis Time..: 11:14					
Sulfate		WO#: DX37T1AL-MS/DX37T1AM-MSD				MS Lot-Sample #: D1C280252-003	
	97	(90 - 110)			MCAWW 300.0A	04/05-04/06/01	1096449
	100	(90 - 110)	2.6	(0-10)	MCAWW 300.0A	04/05/01	1096449
		Dilution Factor: 1					
		Analysis Time..: 00:10					
Total Organic Halogens		WO#: DXTJP1EC-MS/DXTJP1ED-MSD				MS Lot-Sample #: D1C220263-006	
	106	(79 - 115)			SW846 9020B	04/10/01	1102313
	107	(79 - 115)	0.93	(0-18)	SW846 9020B	04/10/01	1102313
		Dilution Factor: 1					
		Analysis Time..: 12:00					
Total Organic Carbon		WO#: DXTJP1EG-MS/DXTJP1EH-MSD				MS Lot-Sample #: D1C220263-006	
	100	(90 - 110)			SW846 9060	04/16/01	1107405
	99	(90 - 110)	1.4	(0-10)	SW846 9060	04/16/01	1107405
		Dilution Factor: 1					
		Analysis Time..: 12:00					
Total Sulfide		WO#: DXWT91AC-MS/DXWT91AD-MSD				MS Lot-Sample #: D1C230293-006	
	75	(70 - 130)			SW846 9030B/9034	03/29/01	1088250
	72	(70 - 130)	4.5	(0-20)	SW846 9030B/9034	03/29/01	1088250
		Dilution Factor: 1					
		Analysis Time..: 12:00					

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: D1C230236 **Matrix.....:** WATER
Date Sampled...: 03/22/01 14:30 **Date Received..:** 03/23/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total			WO#: DXTJP1D9-MS/DXTJP1EA-MSD				MS Lot-Sample #: D1C220263-006		
	ND	0.100	0.0976	mg/L	98		SW846 9012A	04/03/01	1093368
	ND	0.100	0.0980	mg/L	98	0.40	SW846 9012A	04/03/01	1093368
			Dilution Factor: 1						
			Analysis Time..: 13:00						
Nitrite			WO#: DXV9K1D7-MS/DXV9K1D8-MSD				MS Lot-Sample #: D1C230220-003		
	ND	0.100	0.104	mg/L	98		MCAWW 354.1	03/23/01	1085326
	ND	0.100	0.0992	mg/L	93	4.2	MCAWW 354.1	03/23/01	1085326
			Dilution Factor: 1						
			Analysis Time..: 10:46						
Perchlorate			WO#: DXTJP1CL-MS/DXTJP1CM-MSD				MS Lot-Sample #: D1C220263-006		
	19.9	100	115	ug/L	95		EPA 314.0	03/26/01	1086178
	19.9	100	117	ug/L	97	1.4	EPA 314.0	03/26/01	1086178
			Dilution Factor: 1						
			Analysis Time..: 11:14						
Sulfate			WO#: DX37T1AL-MS/DX37T1AM-MSD				MS Lot-Sample #: D1C280252-003		
	4.4	25.0	28.6	mg/L	97		MCAWW 300.0A	04/05-04/06/01	1096449
	4.4	25.0	29.4	mg/L	100	2.6	MCAWW 300.0A	04/05/01	1096449
			Dilution Factor: 1						
			Analysis Time..: 00:10						
Total Organic Halogens			WO#: DXTJP1EC-MS/DXTJP1ED-MSD				MS Lot-Sample #: D1C220263-006		
	ND	100	106	ug/L	106		SW846 9020B	04/10/01	1102313
	ND	100	107	ug/L	107	0.93	SW846 9020B	04/10/01	1102313
			Dilution Factor: 1						
			Analysis Time..: 12:00						
Total Organic Carbon			WO#: DXTJP1EG-MS/DXTJP1EH-MSD				MS Lot-Sample #: D1C220263-006		
	ND	25.0	25.2	mg/L	100		SW846 9060	04/16/01	1107405
	ND	25.0	24.8	mg/L	99	1.4	SW846 9060	04/16/01	1107405
			Dilution Factor: 1						
			Analysis Time..: 12:00						
Total Sulfide			WO#: DXWT91AC-MS/DXWT91AD-MSD				MS Lot-Sample #: D1C230293-006		
	ND	19.3	14.5	mg/L	75		SW846 9030B/9	03/29/01	1088250
	ND	19.3	13.9	mg/L	72	4.5	SW846 9030B/9	03/29/01	1088250
			Dilution Factor: 1						
			Analysis Time..: 12:00						

NOTE(S):

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

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: D1C230236 **Work Order #...:** DX1NL-SMP DX1NL-DUP **Matrix.....:** WATER

Date Sampled...: 03/23/01 08:59 **Date Received..:** 03/27/01

% Moisture.....: 100 **Dilution Factor:** **Initial Wgt/Vol:**

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #:	D1C270130-004	
	832	828	mg/L	0.48	(0-20)	MCAWW 160.1	03/28/01	1087426

Dilution Factor: 1 Analysis Time..: 17:00

1.1 of 3/23

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
Sampling Location: Sewage Lagoons, (wells E, F, G, H) Cannon Air Force Base, New Mexico	Packed and Sealed for Shipping by: R.K. DeWees; Seal Number: 135618
Team Leader: Project chief - Fredrick E. Gebhardt	Delivered to Shipper by: R.K. DeWees; Airbill Number: 816993226432
	Sampling Status: [X] Done [ ] Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
03-22-2001	1220	CAFB-G	GROUND-WATER	10	All Apx-IX: SW8260B, SW8081, SW8082, SW6010 -Total (Al, Ba, Be, Ca, Co, Cu, Fe, Mg, Mn, Mo, Ni, K, Na, Sn, V, Zn), SW6020-ICP-MS (Sb, Ag, Cd, As, Cr, Pb, Se, Tl), SW7470 (Hg), NITRATE-E353.2, NIRITE-E354.1, SULFATE-E300, TDS-E160.1, SULFIDE-SW9030. PERCHLORATE- EPA 314.0	ENVIRONMENTAL SAMPLE
03-22-01	1015	CAFB-E	"	9	SAME AS ABOVE BUT NO PERCHLORATE ANALYSIS	" "
03-22-01	1125	CAFB-H	"	9	" " " " " " " "	" "
03-22-01	1015	CAFB-E-TB	ULTRA PURE WATER	3	VOC: SW5030/SW8260B	TRIP BLANK

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 [ ] Yes [ ] No
[signature]	TO FEDEX	03-22-01	1600	Quanterra Environmental 4955 Yarrow Street Arvada, CO 80002 ph: (303) 786-0184 Attention: Karen Kuoppala	Condition of Contents
	[signature]	3/23/01	0800		Contents Temperature
					Laboratory Project Number

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
Sampling Location: Landfill-5, Cannon Air Force Base, NM	Packed and Sealed for Shipping by: R.K. DeWees — Seal Number: 135617
Team Leader: Project chief -- Fred Gebhardt	Delivered to Shipper by: R.K. DeWees — Airbill Number: 8169 3226 4432
	Sampling Status: [X] Done [ ] Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
03-22-2001	0900	CAFB-Q	Ground-water	17	All Apx-IX: SW8260B, SW8270C, SW8280, SW8310, SW8081, SW8082, SW8151, Total-METALS: SW6010 (Al,Ba,Be, Ca, Co, Cu, Fe, Mg, Mn, Mo, Ni, K, Na, Sn, V, Zn), SW6020-ICP-MS (Sb, Ag, Cd, As, Cr, Pb, Se, Tl), SW7470 (Hg), SW9012, SW9030, SW9060, SW9020, PERCHLORATE - EPA 314.0	Environmental Sample
03-22-01	0900	CAFB-Q-TB	ULTRA PURE WATER	3	VOC: SW5030/SW8260B	TRIP BLANK

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 [ ] Yes [ ] No
[signature]	TO FEDEX	03-22-01	1600	Quanterra Environmental 4955 Yarrow Street Arvada, CO 80002 ph: (303) 736-0184 Attention: Karen Kuoppala	Condition of Contents
	[signature]	3/23/01	0800		Contents Temperature
					Laboratory Project Number

STL Denver

Sample Receiving Checklist

Lot #: DIC230236 Date/Time Received: 3/23/01 - 0800

Company Name & Sampling Site: USGS-Cannon AFB

*Cooler #(s): 1 2

Temperatures (°C): 1.1° 1.3°

PM to Complete This Section: *Yes* *No*

Residual chlorine check required: ☐ ☐

Special instruction to Sample Receiving staff: 25228.

Unpacking & Labeling Check Points:

N/A	Yes	No		Initials
☐	☑	☐	1. Cooler seals intact. (N/A if hand delivered)	CR
	☑	☐	2. Chain of custody present.	
	☐	☑	3. Bottles broken and/or are leaking, comment if yes.	
			PHOTOGRAPH BROKEN BOTTLES	
	☑	☐	4. Containers labeled, comment if no.	
☐	☑	☐	5. pH of all samples checked and meet requirements, note exceptions.	
	☑	☐	6. Chain of custody includes "received by" and "relinquished" by signatures, dates, and times.	
	☐	☑	7. Receipt date(s) > 48 hours past the collection date(s)? If yes, notify PA/PM.	
	☑	☐	8. Chain of custody agrees with bottle count, comment if no.	
	☑	☐	9. Chain of custody agrees with labels, comment if no.	
☐	☑	☐	10. VOA samples filled completely, comment if no.	
☐	☑	☐	11. VOA vials preserved, check label. Preservative ☑HCl ☐4±2°C ☐Sodium Thiosulfate	
	☐	☑	12. Did samples require preservation with sodium thiosulfate?	
☑	☐	☐	13. If yes to #12, did the samples contain residual chlorine?	
☑	☐	☐	14. Sediment present in dissolved/filtered bottles.	
	☑	☐	15. Are analyses with short holding times requested?	
☑	☐	☐	16. Is extra sample volume provided for MS, MSD or matrix duplicates?	
	☐	☑	17. Multiphase samples present? If yes, comment below.	
	☐	☑	18. Any subsampling for volatiles? If yes, list samples.	
			PHOTOGRAPH MULTIPHASE SAMPLES	
☑	☐	☐	19. Subcontract COC signed and sent with samples to bottle prep?	
	☐	☐	20. Was sample labeling double checked by a second person?	POP
☑	☐	☐	21. Were sample bottles, COC and paperwork double checked for dissolved/filtered metals by a second person?	CR

Document any problems or discrepancies and the actions taken to resolve them on a Condition Upon Receipt Anomaly Report (CUR).

APPENDIX V

Field Data

Sample container and preservation requirements
Landfill 5

Parameters and methods	Bottle Size and Type	Preservatives
Appendix-IX, Volatile Organic Compounds SW8260B	Three 40 ml glass vials	200 uL 50 % Hydrochloric Acid, Chilled to maintain 4 degrees Celsius
Appendix-IX, Semivolatile Organic Compounds SW8270C	Two 32 oz. glass (amber)	None, Chilled to maintain 4 degrees Celsius
Appendix-IX, Pesticides and PCB's SW8081A/8082	Two 32 oz. glass	None, Chilled to maintain 4 degrees Celsius
Appendix-IX, Dioxins and Furans SW8280	Two 32 oz. glass (amber)	None, Chilled to maintain 4 degrees Celsius
Polynuclear Aromatic Hydrocarbons SW8310	Two 32 oz. glass (amber)	None, Chilled to maintain 4 degrees Celsius
Appendix-IX, Herbicides SW8151A	32 oz. glass	None, Chilled to maintain 4 degrees Celsius
Appendix-IX, Total Metals: 16 metals by SW6010B, 8 metals by SW6020, and mercury by SW7470A	16 oz. polyethylene	10 mL 20% Nitric Acid, pH<2
Cyanide, SW9012A	8 oz. polyethylene	2 mL 50% Sodium Hydroxide, pH>12, Chilled to maintain 4 degrees Celsius
Sulfide, SW9030B/9030	8 oz. polyethylene	1 mL 1N Zinc Acetate, plus 1 mL 50% Sodium Hydroxide, pH>9, Chilled to maintain 4 degrees Celsius
Total Organic Carbon (TOC) SW9060	16 oz. glass	2 mL 50% Sulfuric Acid, pH<2, Chilled to maintain 4 degrees Celsius
Total Organic Halogen, (TOX), SW9020B	8 oz. glass (amber)	1 mL 50% Sulfuric Acid, pH<2, Chilled to maintain 4 degrees Celsius

Sample container and preservation requirements
Sewage Lagoon

Parameters and methods	Bottle Size and Type	Preservatives
Appendix-IX, Volatile Organic Compounds SW8260b	Three 40 ml glass vials	200 uL 50 % Hydrochloric Acid, Chilled to maintain 4 degrees Celsius
Appendix-IX, Pesticides and PCB's SW8081A/8082	Two 32 oz. glass	None, Chilled to maintain 4 degrees Celsius
Appendix-IX, Total Metals: 16 metals by SW6010B, 8 by SW6020, and mercury by SW7470A	16 oz. polyethylene	10 mL 20% Nitric Acid, pH<2
Nitrate, MCAWW353.2	16 oz. glass	2 mL 50% Sulfuric Acid, pH<2, Chilled to maintain 4 degrees Celsius
Nitrite , MCAWW354.1 Sulfate, MCAWW300.0A Total dissolved solids (TDS), MCAWW160.1	32 oz. polyethylene	None, Chilled to maintain 4 degrees Celsius
Sulfide, SW9030B/9034	8 oz. polyethylene	1 mL 1N Zinc Acetate, plus 1 mL 50% Sodium Hydroxide, pH>9, Chilled to maintain 4 degrees Celsius

03-20-01

1230 - RK, LOUIS, JEFF ARRIVE AT CAFB. DROPPED REPORTS FOR JOHN PIKE AND PICKED UP NITEN SAMPLE BOTTLES. JOHN WAS NOT AROUND.

1245 - ARRIVED AT "S" WELL, WL = 295.86' TOP HANGER

CALIBRATION:

✓ • DO METER - YSI 95, MODEL 95, SN 99A0237
- SET TO 4700', 1 APT

DO TURB • ~~TURBIDITY METER - 2100P HACH, SN 980700018776~~

✓ • COND METER - ORION MODEL 126, SN 33445021
- SET TO 25°C CAL W/ 753 (3/1) & 1010 (5/1) µS STANDARDS
- CALIBRATION READINGS: 754 & 1010, 0.609

✓ • pH METER - ORION MODEL 230A, SN 009150
CAL W/ 7.0 & 10.01 (EXPIRE 5/1)
AUTOCAL 7.03 & 10.00 SLP = 104.1

• USE OF FLOW-THRU CHAMBER FOR METERS

CAFB-S | WL = 295.86' BELOW PUMP HANGER, HNU = 0

TIME	VOL(GAL)	TEMP(°C)	pH	COND(µS)	DO (mg/L)
1345	<0.5	18.4	6.88	775	5.36
1355	5.0	18.3	7.16	771	5.74
1400	10.0	18.6	7.02	770	5.42
1405	15.0	~~22.6~~ 19.3	7.21	770	4.11
1410	20.0	18.6	7.25	773	4.20
1415	25.0	18.4	7.28	773	5.16
1420	30.0	18.7	7.30	775	4.82

1 75 - COLLECTED ENV. GW SAMPLE AT CAFB-S

NOTE: FLOW-THRU CHAMBER USED FOR METER READINGS, ALL INITIAL REMAIN (< 0.5 GALLON) ARE TAKEN WHEN CHAMBER FIRST FILLS

1.94 ℄ MEASURING POINT (TOP OF PUMP HANGER) TO TOP OF CONCRETE = 2.04'

B

03-21-01

0800 - ARRIVE AT CAFB-D. PICKED UP LANDFILL KEYS FROM JOHN PRIOR. JOHN SAID TO COLLECT PERCH. SAMPLES AND RETURN TO HIM.

CALIBRATION:

- DO METER - YSI 95, SN 99A0237
  - SET TO 4700', 1 PPT
- COND METER - ORION MODEL 126, SN 33445021
  - SET TO 25°C CAL W/ 753 & 1010 STDS (EXPIRE 3/01)
  - CAL READINGS: 753 & 1010 (-0.608)
- pH METER - ORION MODEL 230A, SN 009150
  - AUTOCAL W/ 7.0 & 10.01 (EXPIRE 06/01, 994694-24, 994463-24)
  - CAL READINGS: 7.03 & 10.10 (SLP = 102.1)

$\boxed{\text{CAFB-D}}$ FLOW-THRU CHAMBER USED

MNU = 0 WL = 293.62' BELOW TOP OF PUMP HANGER

TIME	VOL (GAL)	TEMP (°C)	pH	COND (µS)	DO (mg/L)
0840	<0.5	18.0	7.35	578	5.27
0845	5.0	~~18.5~~ 18.1	6.95	587	~~6.75~~ 5.69
0850	10.0	18.2	6.96	586	5.30
0855	15.0	18.2	6.98	587	4.99
0900	20.0	18.2	7.00	587	4.77
0905	25	18.3	7.00	588	4.63
0910	30	18.2	7.12	588	4.60
0915	35	18.3	7.07	588	4.46
0920	40	18.3	7.07	589	4.30

0930 - COLLECTED ENV. GW SAMPLE AT CAFB-D

03-21-01

0935- NO PERCHLORATE OR NMED SAMPLE COLLECTED AT CAFB-D.

0945- ARRIVE AT CAFB-C, CHANGED BAT ON PH METER

USED FLOW-THRU CHAMBER

CAFB-C HNU = — WL = — NOTE BELOW

TIME	VOL (GALS)	TEMP (°C)	pH	COND (µS)	DO (mg/L)
0950	<0.5	17.7	7.72	608	5.12
0953	5.0	18.5	7.51	584	3.12
0956	10	18.5	7.53	584	3.10
0959	15	18.5	7.60	589	3.03
1003	20	18.8	7.54	593	3.71
1006	25	18.4	7.59	594	3.24
1010	30	18.4	7.58	599	3.06
1013	35	18.3	7.46	598	2.88
1015	40	18.4	7.54	598	2.90

1020- COLLECTED ENV. GW SAMPLE AT CAFB-C. MOVED TO CAFB-T.

W/L MEASURED 3/23 @ 0800 298.18 BELOW PUMP HANGER.

03-21-01

CAFB-T

WL = 294.80' FROM TOP OF WELL MONITOR
HNU = 0

1100- DUP, NMED, PERCH, AND MS/MSD SITE
USED FLOW-THRU CHAMBER

TIME	VOL (GALS)	TEMP (°C)	pH	COND (uS)	DO
1115	<0.5	~~20~~ 18.7	7.30	814	~~3.66~~ 4.61
1117	5	18.6	7.29	815	4.67
1121	10	18.5	7.35	841	4.73
1125	15	18.5	7.35	852	4.67
1129	20	18.5	7.37	855	4.61
1133	25	18.5	7.40	860	4.57
1137	30	18.5	7.42	860	4.51
1142	35	18.5	7.40	863	4.45
1145	40	18.5	7.12	863	4.40

1150- COLLECTED ENV GW, DUPLICATE, MS AND MSD,
AND NMED SAMPLE PLUS NMED DUPLICATE
- ALL USGS SAMPLES INCLUDE PERCHLORATE SAMPLE

USGS DUPLICATE = CAFB-TT
MS = CAFB-T-MS
MSD = CAFB-T-MSD

1245- MOVED TO CAFB-B

03-21-01

CAFB-B WL = 295.51' HNU = 0 ↗ FROM PUMP HANDLE

1255- RK DOWNLOADED WL DATA (SWITCHED OUT STORAGE)
NO PERCHLORATE OR STATE SAMPLES FOR CAFB-B

TIME	VOL (GALS)	TEMP (°C)	pH	COND (µS)	DO
1307	<05	18.5	6.95	786	5.21
1311	5	18.9	7.10	786	3.08
1315	10	19.1	7.10	786	2.69
1319	15	19.1	7.10	786	2.92
1323	20	19.1	7.11	785	3.36
1328	25	19.0	7.17	784	3.38
1332	30	18.8	7.16	783	3.42
1336	35	18.7	7.17	781	3.56
1340	40	18.6	7.24	781	3.48

1345- COLLECTED ENV. GW SAMPLE AT CAFB-B
NO PERCH, NO STATE CITED

1400- MOVED TO CAFB-U

03-21-01

CAFB-U HNU=0 WL=294.44' FROM PUMP HANGER

1400- TO COLLECT CAFB-U ENV SAMPLE W/PERCH AND ALSO NAMED PERCH SAMPLE, FLOW-THRU CHAMBER

TIME	VOL(GALS)	TEMP(°C)	pH	COND(µS)	DO(mg/L)
1415	<0.5	18.5	7.65	775	3.02
1418	5	18.9	7.98	766	3.12
1422	10	18.6	7.74	771	3.08
1426	15	18.5	7.58	770	3.02
1430	20	18.5	7.68	767	2.93
1435	25	18.5	7.83	761	2.83
1440	30	18.6	7.94	758	2.73
1445	35	18.6	7.84	758	2.66
1450	40	18.6	7.86	758	2.59

1455- COLLECTED ENV. GW SAMPLE AT CAFB-U.
SAMPLESET INCLUDES PERCH & NAMED

03-22-01

0745- ARRIVE AT CAFB-Q. WILL SAMPLE FOR PERCH & NMED. BACKGROUND WELL

CALIBRATION:

- DO METER - YSI 95, SN 99A0237
  - SET TO 4700', 1 ppt
- COND METER - ORION MODEL 126, SN 33445021
  - SET TO 25°C CAL W/ 753 & 1010 (EXP 3/1, LOT 0080-1010, LOT 0021-753)
  - CAL READINGS: 754 & 1010 (-0.606)
- pH METER - ORION MODEL 230A, SN 009150
  - AUTOCAL W/ 7.0 & 10.01 (EXP 3/01, LOT 99446324-10, LOT 99469424-7)
  - CAL READINGS: 7.02 & ~~10.10~~ 10.07, SLOPE = 102.1

CAFB-Q WL=28.52' BELOW PUMP MANIFOLD, HNU=0

- USED FLOW-THRU CHAMBER

TIME	VOL (GALS)	TEMP (°C)	pH	COND (mS)	DO (mg/L)
0825 ~~0827~~	<0.5	17.2	7.84	744	6.30
0829	5	18.1	7.25	760	4.11
0832	10	18.1	7.26	759	4.21
0836	15	18.1	7.26	758	4.26
0840	20	18.2	7.27	758	4.28
0844	25	18.5	7.28	754	4.20
0848	30	18.3	7.28	755	4.08
0852	35	18.2	7.29	754	4.27
0856	40	18.2	7.29	754	4.27

0900- COLLECTED ENV GW SAMPLE AT CAFB-Q. COLLECTED PERCH AND NMED SAMPLE ALONG W/ NORMAL SAMPLE SET.

03-22-01

CAFB-E - SEWAGE LAGOONS BACKGROUND WELL

0915- ARRIVED AT CAFB-E, BACKGROUND WELL

CAFB-E WL=293.95' BELOW PUMP HANGER, HNU=0
USED FLOW-THRU CHAMBER

TIME	VOL(GALS)	TEMP(°C)	pH	COND(µS)	DO(mg/L)
0925	<05	17.3	6.97	780	3.73
0929	5	18.3	7.10	821	6.16
0933	10	18.3	7.15	821	4.64
0938	15	18.3	7.20	823	3.54
0944	20	18.3	7.39	872	3.61
0950	25	18.4	7.33	900	3.60
0955	30	18.3	7.33	893	3.79
000	35	18.4	7.31	884	3.72
1005	40	18.4	7.30	877	3.68
1010	45	18.4	7.33	870	3.57

1015- COLLECTED ENV. GW SAMPLES AT CAFB-E
NO PERCH OR NMED.

1025- ARRIVED AT CAFB-H. NO PERCH OR NMED TO SAMPLE.

CAFB-H. WL= 293.12' FROM UPPERMOST, HNU=0
PUMP HANGER, 293.04' FROM LOWER PUMP HANGER
SOUNDER HUNG UP ON TUBING AT TOP WHEN MEASURED
THRU UPPERMOST PUMP HANGER, SHOULD HAVE MEASURED
FROM LARGER OPENING IN LOWER HANGER.

03-22-01

CAFB-HA USED FLOW-THRU CHAMBER

TIME	VOL (GALS)	TEMP (°C)	pH	COND (mS)	DO (mg/L)
1045	<0.5	16.9	7.59	717	2.93
1049	5	17.7	6.95	721	2.10
1053	10	17.7	6.93*	720	2.13
1057	15	17.7	6.96	720	2.15
1102	20	17.7	6.94	721	2.13
1106	25	17.8	6.93	721	2.19
1110	30	17.8	6.94	726	2.23
1115	35	17.9	6.98	735	2.35
1120	40	17.9	6.97	741	2.43

* pH THERMISTOR WENT CRAZY, BOUNCING UP TO 85°C

1125 - COLLECTED EAN GW SAMPLE AT CAFB-H WITH NO PEACH OR NAMED SAMPLE.

1125 - PULLED OUT pH METER FROM SET "B". HAD BEEN USING SET "C" METER BUT THERMISTOR IS WRACKED.

CALIBRATION

- pH METER - MODEL 250A ORION, SN 012941
  - AUTO CAL W/7.0 & 10.01
  - CAL READINGS: 7.02 & 10.08 (SLP=101.9)
- pH METER: SET "C" METER, SN 009150
  - AUTO CAL W/7.0 & 10.01
  - CAL READINGS: 7.01 & 10.06 (SLOPE 102)

PULLED pH METER FROM CHAMBER, THERMISTOR DROPPED BACK TO NORMAL. RECALIBRATED AND PUT SET "C" METER BACK IN CHAMBER

03-22-01

CAFB-6 - WL = 293.43' BELOW PUMP HANGER, HNU = 0

1140 - pH METER THERMISTOR STARTED GOING CRAZY AGAIN. PULLED IT OUT OF FLOW-THRU CHAMBER AND REPLACED W/SET "B" pH METER THAT JUST CALIBRATED. SN = 012941

CAFB-6 USED FLOW-THRU CHAMBER

TIME	VOL (GALS)	TEMP (°C)	pH	COND (mS)	DO (mg/L)
1143	<0.5	16.8	7.07	967	2.36
1148	5	17.6	7.20	967	2.36
1152	10	17.7	7.34	966	2.36
1156	15	17.7	7.41	967	2.36
1200	20	17.7	7.50	967	2.36
1205	25	17.8	7.50	966	2.33
1209	30	17.8	7.50	966	2.33
1214	35	17.8	7.55	974	2.32
1218	40	17.9	7.61	983	2.32

1220 - COLLECTED ENV. GW SAMPLE WITH PERCHLORATE. NO NMED SAMPLE. NMED DID NOT HAVE ANY BOTTLES OR LISTING ON THE COC FOR WELLS AROUND THE SEWAGE LAGOONS. DISCUSSED W/JOHN PIKE AND HE SAID NOT TO WORRY ABOUT NMED SAMPLES. GAVE NMED SAMPLES AND LANDFILL KEYS TO JOHN. NMED SAMPLES INCLUDED EMPTY BOTTLES FOR OTHER SITES AND NMED SAMPLES COLLECTED FROM LANDFILL WELLS.

03-22-01

CAFB-F - MOVED TO F, WILL COLLECT PERCH & DVR

CAFB-F HNU = 0, WL = 290.98' BELOW LOWER PUMP HANGER

TIME	VOL(GALS)	TEMP(°C)	pH	COND(µS)	DO(mg/L)

1300 - LITTLE WATER PUMPING, PUMP IS EITHER BROKEN OR IS OUT OF THE WATER LEVEL

1330 - NO WAY TO SPLICE AND LOWER PUMP IF WATER LEVEL IS STILL WITHIN THE SCREEN AREA. NO TUBE SUPPLIES AVAILABLE.

1400 - PULLED PUMP, PUMP & EXTENDER WERE OUT OF THE WATER, TAKING WHOLE SETUP HOME TO SPLICE.

FIELD METHODS

Preperation for Purging and Sampling Cannon Air Force Base Landfill 5 wells.

- Water levels are first collected using a Solinst electric tape.
- Meters for collecting water field parameters are calibrated. Meters used are: Orion pH meter, model 250A; Orion conductance meter, model 126; YSI dissolve oxygen meter, model 57.
- Nitrogen gas is connected to air intake valve on purge/sample pump. Nitrogen gas pressure varies on each well.

Purging water before sampling.

- From each well, three well volumes of water or stabilization of field parameters is achieved before sampling. Field parameters are collected at the beginning of water purging then collected after every five gallons water purged. All water purged is contained in a water tank on site next to each well.
- Each well is equiped with a dedicated Bennett Pump. Dedicated pumps require no decontamination and no equipment blanks to be collected (except for initial installation).
- Bennett Pumps are a automatic reciprocating piston motor, operated by compressed air, which generates power for operating a double acting, piston fluid pump. Each pump is set just above the water table with an approximate ten foot extension discharge hose attached to the bottom of the pump and submerged in the groundwater.

Sampling.

- Nitrogen gas pressure is reduced. EPA's Groundwater Sampling Protocol are followed for sampling procedures and the order in which each sample bottle is collected.
- After samples are collected, each bottle will be labeled, bagged, and stored on ice until samples are packed and ready for shipping.
- Each label will have the following data: Collecting agency; Location; Sample ID; Date and time; Sample type; Analytical methods; Collectors; Bottle type and number.

Shipping.

- Sample bottles will be packed in a cooler with bagged ice and packing material. Analytical Request/Chain of Custody forms will be placed in a sealed plastic bag on top of the sample bottles. Coolers will be sealed with strapping tape and a Chain of Custody Seal with seal number.
- Coolers will be shipped by Federal Express shipping company. Coolers will be shipped overnight, and shipped on the same day samples were collected.

LIBRARY COPY

Cannon Air Force Base, New Mexico

RCRA Ground-Water Monitoring at Landfill 5 and Sewage Lagoons (well CAFB-F)

Analytical Results of Samples Collected August 21-22, 2001

Prepared for

United States Air Force Air Combat Command
Cannon Air Force Base

November 2001

Page

APPENDIX I--Continued

Total metals..... I-44

General chemistry..... I-46

APPENDIX II

Laboratory Quality Assurance / Quality Control Results

Laboratory data validation checklist for D1H240209..... II-1

DODEC laboratory data review worksheet for D1H240209..... II-31

Severn Trent Services D1H240209 quality control summary..... II-35

U.S. Geological Survey, Water Resources Division, New Mexico District analytical request / chain of custody..... II-82

Severn Trent sample receiving checklists..... II-86

Severn Trent condition upon receipt anomaly reports..... II-87

APPENDIX III

Field Data

Field Methods..... III-1

Sample container and preservation requirements..... III-2

Field notes..... III-4

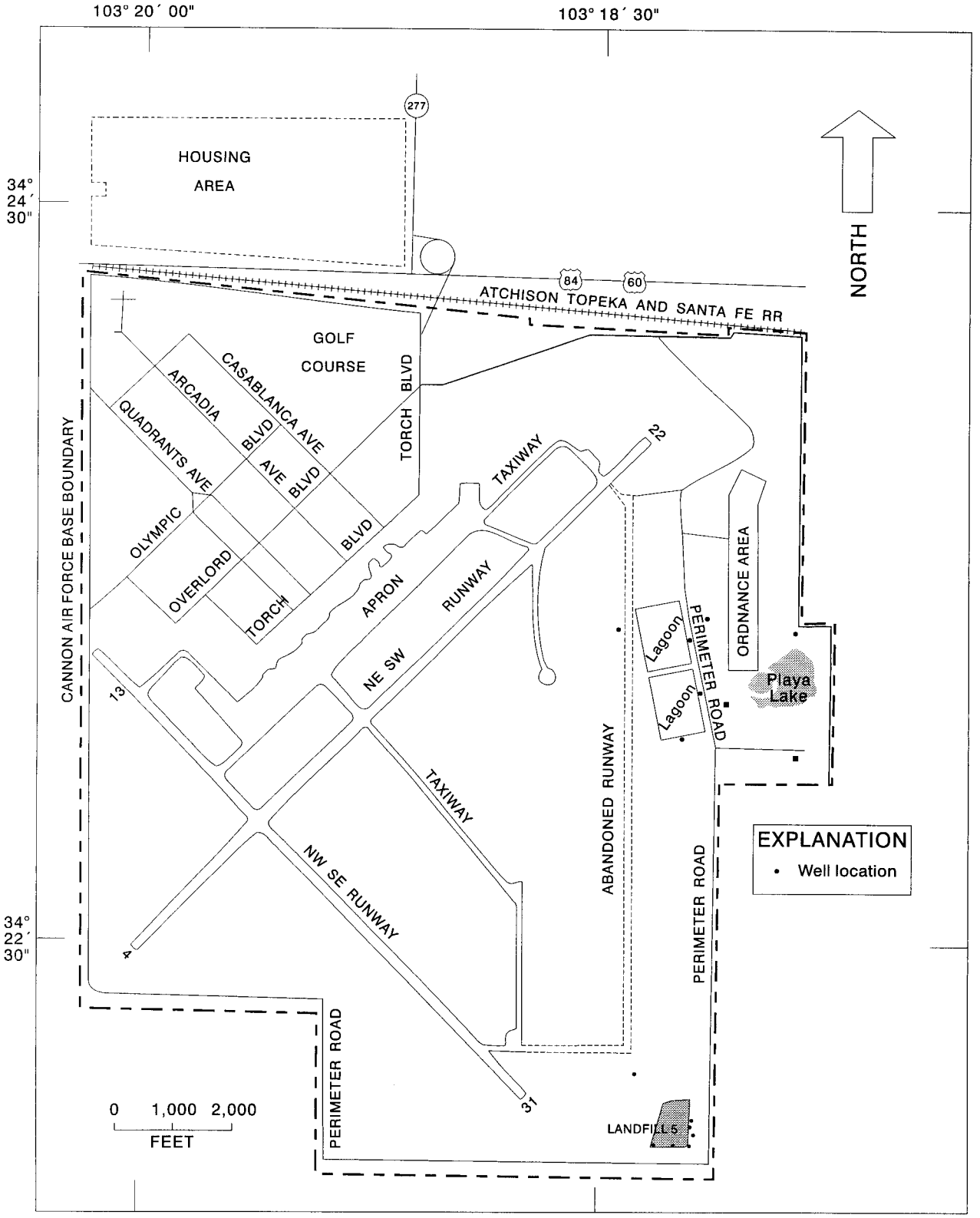


Figure 2. Cannon Air Force Base and location of sewage lagoons and Landfill 5.

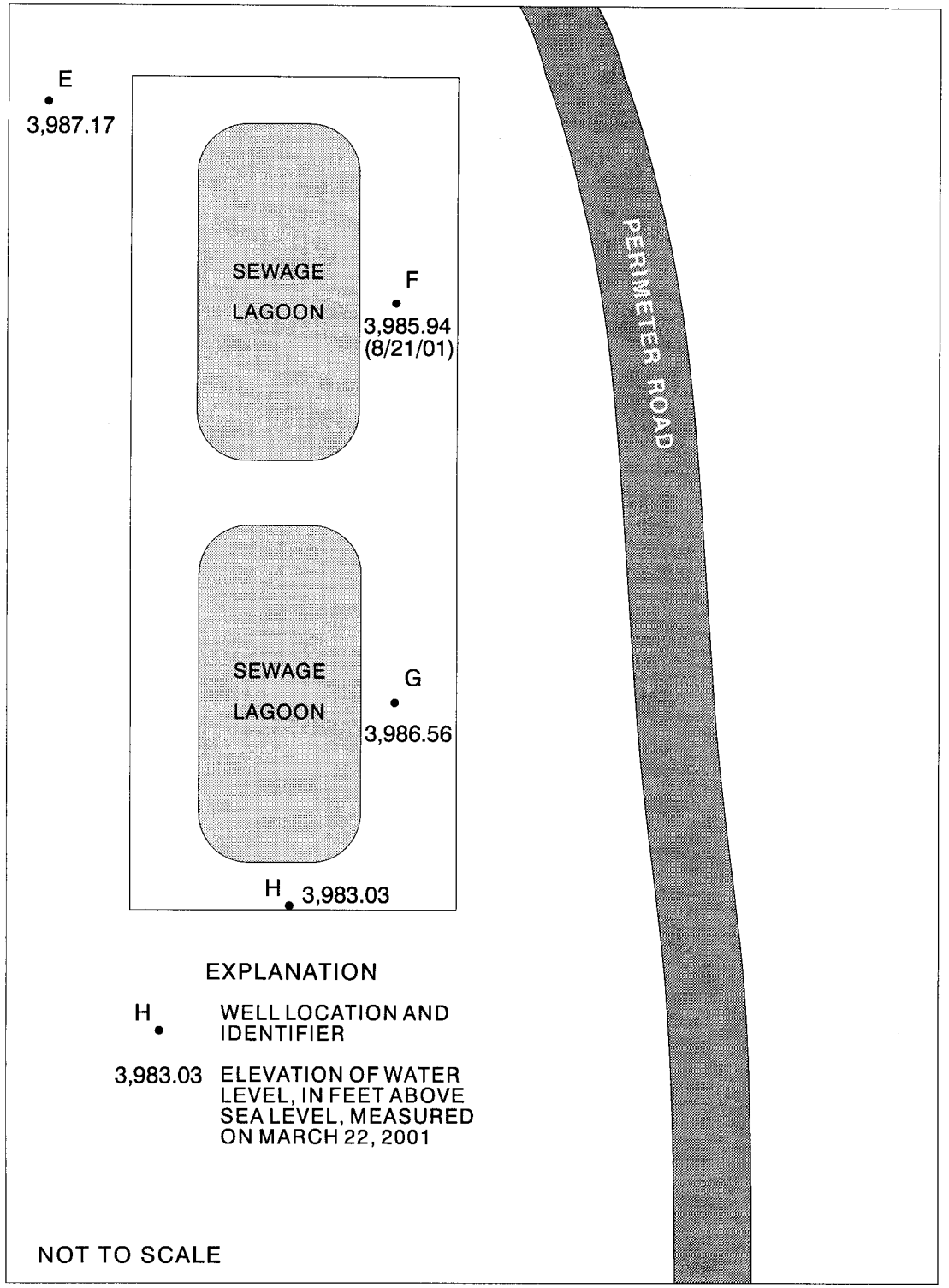


Figure 3. Location of monitoring wells around the sewage lagoons.

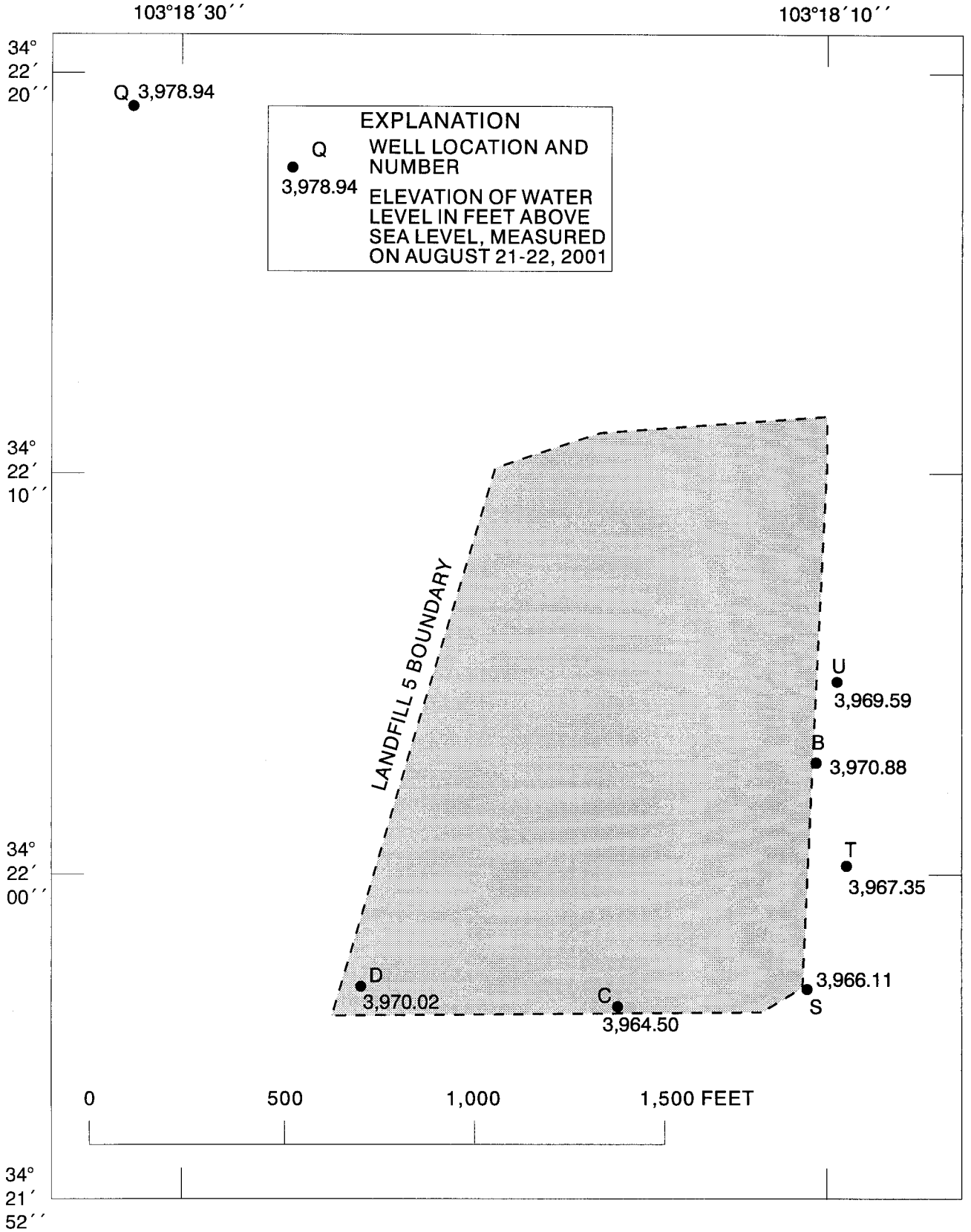


Figure 4. Location of monitoring wells around Landfill 5.

Table 1.--Summary of concentrations of analytes in ground water from monitoring wells F, for samples collected August 21, 2001 at the sewage lagoons, Cannon Air Force Base, New Mexico

[RL, reporting limit; µg/L, micrograms per liter; ND, not detected; J or B, result is detected below the reporting limit or is an estimated concentration; mg/L, milligrams per liter; MCAWW, methods for chemical analysis of water and wastes; Q, reporting limit is elevated due to high analyte levels]

Well/sample ID: Date sampled: :		F/CAFB-F 8-21-2001	
Analytes and Methods		Result	RL
Appendix-IX semivolatile organics, SW8081A, (µg/L)			
Aldrin		0.013 J	0.050
beta-BHC		0.049 J	0.050
delta-BHC		0.027 J	0.050
Endosulfan I		0.011 J	0.050
Endosulfan sulfate		0.020 J	0.050
Heptachlor		0.016 J	0.050
Heptachlor epoxide		0.017 J	0.050
Metals, Total (µg/L)			
Aluminum	SW6010B	1890	100
Antimony	SW6020	2.0	1.0
Arsenic	SW6020	4.0 B	5.0
Barium	SW6010B	55.0	10.0
Cadium	SW6020	0.74 B	1.0
Chromium	SW6020	10.6	1.0
Colbalt	SW6010B	0.81 B	10.0
Copper	SW6010B	12.4 B	20.0
Iron	SW6010B	1730	100
Lead	SW6020	10.2	1.0
Magnesium	SW6010B	44000	200
Manganese	SW6010B	42.8	10.0
Mercury	SW7470B	0.054 B	0.20
Molybdenum	SW6010B	3.0 B	20.0
Nickel	SW6010B	14.3 B	40.0
Potassium	SW6010B	8380	3000
Selenium	SW6020	7.1	5.0

Table 1.--Summary of concentrations of analytes in ground water from monitoring wells F, for samples collected August 21, 2001 at the sewage lagoons, Cannon Air Force Base, New Mexico

[RL, reporting limit; µg/L, micrograms per liter; ND, not detected; J or B, result is detected below the reporting limit or is an estimated concentration; mg/L, milligrams per liter; MCAWW, methods for chemical analysis of water and wastes; Q, reporting limit is elevated due to high analyte levels]

Well/sample ID: Date sampled: :		F/CAFB-F 8-21-2001	
Analytes and Methods		Result	RL
Silver	SW6020	1.6	1.0
Sodium	SW6010B	46900	5000
Vanadium	SW6010B	23.3	10.0
Zinc	SW6010B	60.5	20.0
Perchlorate	EPA 314.0	ND	20.0
Sulfate	MCAWW300.0A	131 Q	25.0
Nitrate	MCAWW353.2	1.4	0.10
Total Dissolved Solids, MCAWW160.1		538	10.0

Table 2.--Summary of concentrations of analytes in ground water from monitoring wells CAFB-B, C, D, Q, S, T, and U for samples collected August 21-22, 2001, at Landfill 5, Cannon Air Force Base, New Mexico

[RL, reporting limit; µg/L, micrograms per liter; ND, not detected; J, result was detected below the reporting limit or is an estimated concentration. All samples were prepared or analyzed after the EPA-recommended temperature had been exceeded]

Well/sample ID: Date sampled:	B/CAFB-B 8-21-2001		C/CAFB-C 8-22-2001		D/CAFB-D 8-22-2001		D/CAFB-BB 8-21-2001 Duplicate	
Analytes and Methods	Results	RL	Results	RL	Results	RL	Results	RL
Appendix-IX Volatiles, SW8260B (µg/L)								
Trichloroethene	ND	1.0	1.7	1.0	0.94 J	1.0	1.3	1.0
2-Butanone (MEK)	1.4 J	5.0	ND	5.0	ND	5.0	ND	5.0
Appendix-IX								
TOC, SW846 9060 (mg/L)	ND	1.0	0.62 B	1.0	ND	1.0	ND	1.0
TOX, SW846 9020B (µg/L)	ND	60.0	ND	60.0	ND	60.0	ND	60.0
Perchlorate, EPA 314.0 (µg/L)	ND	20.0	ND	20.0	ND	20.0	ND	20.0

Well/sample ID: Date sampled:	Q/CAFB-Q 8-22-2001		S/CAFB-S 8-21-2001		T/CAFB-T 8-21-2001		U/CAFB-U 8-21-2001	
Analytes and Methods	Result	RL	Result	RL	Result	RL	Result	RL
Appendix-IX Volatiles, SW8260B (µg/L)								
Trichloroethene	ND	1.0	ND	1.0	ND	1.0	ND	1.0
Carbon disulfide	ND	1.0	3.7	1.0	ND	1.0	ND	1.0
Dichlorodifluoromethane	ND	2.0	ND	2.0	ND	2.0	0.36 J	2.0
Trichlorofluoromethane	ND	2.0	ND	2.0	ND	2.0	0.45 J	2.0
Appendix-IX								
TOC, SW846 9060 (mg/L)	0.38 B	1.0	ND	1.0	0.78 B	1.0	ND	1.0
TOX, SW846 9020B (µg/L)	ND	60.0	ND	60.0	ND	60.0	ND	60.0
Perchlorate, EPA 314.0 (µg/L)	ND	20.0	ND	20.0	ND	20.0	ND	20.0

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS AND 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 B -- Landfill-5

WELL LOCATION (LONGITUDE) 103 ° 18 ' 10 "

WELL LOCATION (LATITUDE) 34 ° 22 ' 03 "

AQUIFER NAME Ogallala

AQUIFER CONFINED _____ UNCONFINED X

WELL INSTALLATION DATE 11-30-1984

DRILLING METHOD HYDRT

INNER CASING DIAMETER 4 inches

BOREHOLE DIAMETER 8 inches

CASING MATERIAL PVC

METHOD OF DEVELOPMENT AIRFT

ELEV BOTTOM OF BOREHOLE 3903.11 feet above MSL

ELEV BOTTOM OF WELL CASING 3903.11 feet above MSL

ELEV BOTTOM OF SCREENED INT 3903.11 feet above MSL

ELEV OF TOP OF SCREENED INT 3918.11 feet above MSL

SURVEYED ELEV OF CASING TOP 4265.41 feet above MSL

DATE OF REPORT 11-26-01 SIGNATURE Fredrick E. Gebhardt

NAME (TYPED) Fredrick E. Gebhardt

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS AND 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 C -- Landfill-5

WELL LOCATION (LONGITUDE) 103° 18' 08.3"

WELL LOCATION (LATITUDE) 34° 21' 56.8"

AQUIFER NAME Ogalalla

AQUIFER CONFINED _____ UNCONFINED X

WELL INSTALLATION DATE 01-11-1985

DRILLING METHOD HYDRT

INNER CASING DIAMETER 4 inches

BOREHOLE DIAMETER 8 inches

CASING MATERIAL PVC

METHOD OF DEVELOPMENT AIRFT

ELEV BOTTOM OF BOREHOLE 3905.90 feet above MSL

ELEV BOTTOM OF WELL CASING 3905.90 feet above MSL

ELEV BOTTOM OF SCREENED INT 3905.90 feet above MSL

ELEV OF TOP OF SCREENED INT 3920.90 feet above MSL

SURVEYED ELEV OF CASING TOP 4267.90 feet above MSL

DATE OF REPORT 11-26-01 SIGNATURE Fredrick E. Gebhardt

NAME (TYPED) Fredrick E. Gebhardt

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS AND 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 D -- Landfill-5

WELL LOCATION (LONGITUDE) 103 ° 18 ' 17 "

WELL LOCATION (LATITUDE) 34 ° 21 ' 57 "

AQUIFER NAME Ogallala

AQUIFER CONFINED _____ UNCONFINED X

WELL INSTALLATION DATE 12-16-1984

DRILLING METHOD HYDRT

INNER CASING DIAMETER 4 inches

BOREHOLE DIAMETER 8 inches

CASING MATERIAL PVC

METHOD OF DEVELOPMENT AIRFT

ELEV BOTTOM OF BOREHOLE 3909.15 feet above MSL

ELEV BOTTOM OF WELL CASING 3909.15 feet above MSL

ELEV BOTTOM OF SCREENED INT 3909.15 feet above MSL

ELEV OF TOP OF SCREENED INT 3924.15 feet above MSL

SURVEYED ELEV OF CASING TOP 4265.90 feet above MSL

DATE OF REPORT 11-26-01 SIGNATURE Fredrick E. Gebhardt

NAME (TYPED) Fredrick E. Gebhardt

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS AND 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 F -- Sewage Lagoons

WELL LOCATION (LONGITUDE) 103° 18' 10.5"

WELL LOCATION (LATITUDE) 34° 23' 21.4"

AQUIFER NAME Ogalalla

AQUIFER CONFINED _____ UNCONFINED X

WELL INSTALLATION DATE 11-19-1985

DRILLING METHOD HYDRT

INNER CASING DIAMETER 4 inches

BOREHOLE DIAMETER 8 inches

CASING MATERIAL PVC

METHOD OF DEVELOPMENT AIRFT

ELEV BOTTOM OF BOREHOLE 3902.32 feet above MSL

ELEV BOTTOM OF WELL CASING 3907.32 feet above MSL

ELEV BOTTOM OF SCREENED INT 3907.32 feet above MSL

ELEV OF TOP OF SCREENED INT 3922.32 feet above MSL

SURVEYED ELEV OF CASING TOP 4277.32 feet above MSL

DATE OF REPORT 11-26-01 SIGNATURE Sanford E. Hutsell

NAME (TYPED) Sanford Hutsell

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS AND 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 Q -- Landfill-5

WELL LOCATION (LONGITUDE) 103° 18' 31"

WELL LOCATION (LATITUDE) 34° 22' 19"

AQUIFER NAME Ogallala

AQUIFER CONFINED _____ UNCONFINED X

WELL INSTALLATION DATE 02-24-1996

DRILLING METHOD Unknown

INNER CASING DIAMETER 4 inches

BOREHOLE DIAMETER 8 inches

CASING MATERIAL PVC

METHOD OF DEVELOPMENT BAILD

ELEV BOTTOM OF BOREHOLE 3,969.30 feet above MSL

ELEV BOTTOM OF WELL CASING 3,970.30 feet above MSL

ELEV BOTTOM OF SCREENED INT 3,970.30 feet above MSL

ELEV OF TOP OF SCREENED INT 4,000.30 feet above MSL

SURVEYED ELEV OF CASING TOP 4,266.89 feet above MSL

DATE OF REPORT 11-26-01 SIGNATURE Fredrick E. Gebhardt

NAME (TYPED) Fredrick E. Gebhardt

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS AND 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 S -- Landfill-5

WELL LOCATION (LONGITUDE) 103 ° 18 ' 10.58 "

WELL LOCATION (LATITUDE) 34 ° 21 ' 57.02 "

AQUIFER NAME Ogallala

AQUIFER CONFINED _____ UNCONFINED X

WELL INSTALLATION DATE 12 -02 to 06 -1998

DRILLING METHOD HYDRT (mud rotary)

INNER CASING DIAMETER 4 inches

BOREHOLE DIAMETER 12 inches

CASING MATERIAL PVC (Schedule-80)

METHOD OF DEVELOPMENT BAILD

ELEV BOTTOM OF BOREHOLE 3898.83 feet above MSL

ELEV BOTTOM OF WELL CASING 3898.83 feet above MSL

ELEV BOTTOM OF SCREENED INT 3939.81 feet above MSL

ELEV OF TOP OF SCREENED INT 3979.83 feet above MSL

SURVEYED ELEV OF CASING TOP 4263.83 feet above MSL

DATE OF REPORT 11-26-01 SIGNATURE Fredrick E. Gebhardt

NAME (TYPED) Fredrick E. Gebhardt

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS AND 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 T -- Landfill-5

WELL LOCATION (LONGITUDE) 103 ° 18 ' 09.33 "

WELL LOCATION (LATITUDE) 34 ° 22 ' 00.10 "

AQUIFER NAME Ogallala

AQUIFER CONFINED _____ UNCONFINED X

WELL INSTALLATION DATE 12 -6 to 10 -1998

DRILLING METHOD HYDRT (mud rotary)

INNER CASING DIAMETER 4 inches

BOREHOLE DIAMETER 12 inches

CASING MATERIAL PVC (Schedule-80)

METHOD OF DEVELOPMENT BAILD

ELEV BOTTOM OF BOREHOLE 3898.69 feet above MSL

ELEV BOTTOM OF WELL CASING 3898.69 feet above MSL

ELEV BOTTOM OF SCREENED INT 3939.69 feet above MSL

ELEV OF TOP OF SCREENED INT 3979.69 feet above MSL

SURVEYED ELEV OF CASING TOP 4263.69 feet above MSL

DATE OF REPORT 11-26-01 SIGNATURE Fredrick E. Gebhardt

NAME (TYPED) Fredrick E. Gebhardt

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS AND 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 U -- Landfill-5

WELL LOCATION (LONGITUDE) 103 ° 18 ' 09.84 "

WELL LOCATION (LATITUDE) 34 ° 22 ' 04.88 "

AQUIFER NAME Ogallala

AQUIFER CONFINED _____ UNCONFINED X

WELL INSTALLATION DATE 12 -10 to 13 -1998

DRILLING METHOD HYDRT (mud rotary)

INNER CASING DIAMETER 4 inches

BOREHOLE DIAMETER 12 inches

CASING MATERIAL PVC (Schedule-80)

METHOD OF DEVELOPMENT BAILD

ELEV BOTTOM OF BOREHOLE 3900.26 feet above MSL

ELEV BOTTOM OF WELL CASING 3900.26 feet above MSL

ELEV BOTTOM OF SCREENED INT 3941.26 feet above MSL

ELEV OF TOP OF SCREENED INT 3981.26 feet above MSL

SURVEYED ELEV OF CASING TOP 4265.26 feet above MSL

DATE OF REPORT 11-26-01 SIGNATURE Fredrick E. Gebhardt

NAME (TYPED) Fredrick E. Gebhardt

MONITORING WELL
SEMI-ANNUAL SAMPLING REPORT

SAMPLE COLLECTED BY Fredrick E. Gebhardt

LABORATORY NAME Severn Trent Services WELL NUMBER CAFB-B

WELL DEPTH 362.30 feet WELL CASING VOLUME 42.9 gallons

DATE SAMPLED 08-21-2001 LABORATORY SAMPLE I.D.# D1H240209

TIME SAMPLED 1310 DATE RECEIVED BY LAB 08-22-2001

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3970.88	08-21-2001
Flow Rate	00059	gal/min	1.5	08-21-2001
Pump Period	72004	min.	26	08-21-2001
Volume Evacuated	73675	gal	40.0	08-21-2001
Well Sampling Method	84077	---	PSPMP	N/A

Sampler Material: TEFLON Well Sampling Method: BENNETT PUMP

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	7.40	N/A	08-21-2001	field electrometer
Specific Conductivity	00095	umhos/cm		N/A	08-21-2001	field electrometer
T.O.X.	70354	ug/L	ND	60.0	09-11-2001	SW9020B
T.O.C.	00680	mg/L	ND	1.0	08-29-2001	SW9060

SIGNATURE: Fredrick E. Gebhardt

NAME (PRINTED): Fredrick E. Gebhardt

MONITORING WELL
SEMI-ANNUAL SAMPLING REPORT

SAMPLE COLLECTED BY Fredrick E. Gebhardt

LABORATORY NAME Severn Trent Services WELL NUMBER CAFB-C

WELL DEPTH 362.00 feet WELL CASING VOLUME 38.3 gallons

DATE SAMPLED 08-22-2001 LABORATORY SAMPLE I.D.# D1H240209-008

TIME SAMPLED 0955 DATE RECEIVED BY LAB 08-23-2001

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3964.5	08-22-2001
Flow Rate	00059	gal/min	1.08	08-22-2001
Pump Period	72004	min.	37.0	08-22-2001
Volume Evacuated	73675	gal	40.0	08-22-2001
Well Sampling Method	84077	---	PSPMP	N/A

Sampler Material: TEFLON Well Sampling Method: BENNETT PUMP

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	8.97	N/A	08-22-2001	field electrometer
Specific Conductivity	00095	umhos/cm	516	N/A	08-22-2001	field electrometer
T.O.X.	70354	ug/L	ND	60.0	09-11-2001	SW9020B
T.O.C.	00680	mg/L	0.62 B	1.0	09-07-2001	SW9060

SIGNATURE: Fredrick E. Gebhardt

NAME (PRINTED): Fredrick. Gebhardt

MONITORING WELL
SEMI-ANNUAL SAMPLING REPORT

SAMPLE COLLECTED BY Fredrick E. Gebhardt

LABORATORY NAME Severn Trent Services WELL NUMBER CAFB-D

WELL DEPTH 354.87 feet WELL CASING VOLUME 38.3 gallons

DATE SAMPLED 08-22-2001 LABORATORY SAMPLE I.D.# D1H240209-009

TIME SAMPLED 1050 DATE RECEIVED BY LAB 08-23-2001

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3970.02	08-22-2001
Flow Rate	00059	gal/min	1.18	08-22-2001
Pump Period	72004	min.	34.0	08-22-2001
Volume Evacuated	73675	gal	40.0	08-22-2001
Well Sampling Method	84077	---	PSPMP	N/A

Sampler Material: TEFLON Well Sampling Method: BENNETT PUMP

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	9.66	N/A	08-22-2001	field electrometer
Specific Conductivity	00095	umhos/cm	514	N/A	08-22-2001	field electrometer
T.O.X.	70354	ug/L	ND	60.0	09-11-2001	SW9020B
T.O.C.	00680	mg/L	ND	1.0	09-07-2001	SW9060

SIGNATURE: Fredrick E. Gebhardt

NAME (PRINTED): Fredrick E. Gebhardt

MONITORING WELL
ANNUAL SAMPLING REPORT

SAMPLE COLLECTED BY Fredrick E. Gebhardt

LABORATORY NAME Severn Trent Services WELL NUMBER CAFB-F

WELL DEPTH 370.00 feet WELL CASING VOLUME 51.6 gallons

DATE SAMPLED 08-21-2001 LABORATORY SAMPLE I.D.# D1H240209-007

TIME SAMPLED 0945 DATE RECEIVED BY LAB 08-22-2001

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3985.94	08-21-2001
Flow Rate	00059	gal/min	0.89	08-21-2001
Pump Period	72004	min.	45.0	08-21-2001
Volume Evacuated	73675	gal	40.0	08-21-2001
Well Sampling Method	84077	---	PSPMP	N/A

Sampler Material: TEFLON Well Sampling Method: BENNETT PUMP

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	7.48	N/A	08-21-2001	field electrometer
Specific Conductivity	00095	umhos/cm	816	N/A	08-21-2001	field electrometer

SIGNATURE: Fredrick E. Gebhardt

NAME (PRINTED): Fredrick E. Gebhardt

MONITORING WELL
SEMI-ANNUAL SAMPLING REPORT

SAMPLE COLLECTED BY Fredrick E. Gebhardt

LABORATORY NAME Severn Trent Services WELL NUMBER CAFB-Q

WELL DEPTH 296.69 feet WELL CASING VOLUME 5.68 gallons

DATE SAMPLED 08-22-2001 LABORATORY SAMPLE I.D.# D1H240209-010

TIME SAMPLED 1200 DATE RECEIVED BY LAB 08-23-2001

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3978.94	08-22-2001
Flow Rate	00059	gal/min	1.0	08-22-2001
Pump Period	72004	min.	40	08-22-2001
Volume Evacuated	73675	gal	40	08-22-2001
Well Sampling Method	84077	---	PSPMP	N/A

Sampler Material: TEFLON Well Sampling Method: BENNETT PUMP

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	9.43	N/A	08-22-2001	field electrometer
Specific Conductivity	00095	umhos/cm	673	N/A	08-22-2001	field electrometer
T.O.X.	70354	ug/L	ND	60.0	09-11-2001	SW9020B
T.O.C.	00680	mg/L	0.38 B	1.0	09-07-2001	SW9060

SIGNATURE: Fredrick E. Gebhardt

NAME (PRINTED): Fredrick E. Gebhardt

MONITORING WELL
SEMI-ANNUAL SAMPLING REPORT

SAMPLE COLLECTED BY Fredrick E. Gebhardt

LABORATORY NAME Severn Trent Services WELL NUMBER CAFB-S

WELL DEPTH 362.77 feet WELL CASING VOLUME 42.3 gallons

DATE SAMPLED 03-21-2001 LABORATORY SAMPLE I.D.# D1H240209-005

TIME SAMPLED 1105 DATE RECEIVED BY LAB 08-22-2001

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3966.11	08-21-2001
Flow Rate	00059	gal/min	1.0	08-21-2001
Pump Period	72004	min.	40	08-21-2001
Volume Evacuated	73675	gal	40.0	08-21-2001
Well Sampling Method	84077	---	PSPMP	N/A

Sampler Material: TEFLON Well Sampling Method: BENNETT PUMP

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	7.36	N/A	08-21-2001	field electrometer
Specific Conductivity	00095	umhos/cm	783	N/A	08-21-2001	field electrometer
T.O.X.	70354	ug/L	ND	60.0	09-11-2001	SW9020B
T.O.C.	00680	mg/L	ND	1.0	09-07-2001	SW9060

SIGNATURE: Fredrick E. Gebhardt

NAME (PRINTED): Fredrick E. Gebhardt

MONITORING WELL
SEMI-ANNUAL SAMPLING REPORT

SAMPLE COLLECTED BY Fredrick E. Gebhardt

LABORATORY NAME Severn Trent Services WELL NUMBER CAFB-T

WELL DEPTH 365.00 feet WELL CASING VOLUME 44.6 gallons

DATE SAMPLED 08-21-2001 LABORATORY SAMPLE I.D.# D1H240209-007

TIME SAMPLED 1155 DATE RECEIVED BY LAB 08-22-2001

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3967.35	08-21-2001
Flow Rate	00059	gal/min	1.03	08-21-2001
Pump Period	72004	min.	39	08-21-2001
Volume Evacuated	73675	gal	40.0	08-21-2001
Well Sampling Method	84077	---	PSPMP	N/A

Sampler Material: TEFLON Well Sampling Method: BENNETT PUMP

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	7.31	N/A	08-21-2001	field electrometer
Specific Conductivity	00095	umhos/cm	847	N/A	08-21-2001	field electrometer
T.O.X.	70354	ug/L	ND	60.0	09-11-2001	SW9020B
T.O.C.	00680	mg/L	0.78 B	1.0	08-29-2001	SW9060

SIGNATURE: Fredrick E. Gebhardt

NAME (PRINTED): Fredrick E. Gebhardt

MONITORING WELL
SEMI-ANNUAL SAMPLING REPORT

SAMPLE COLLECTED BY Fredrick E. Gebhardt

LABORATORY NAME Severn Trent Services WELL NUMBER CAFB-U

WELL DEPTH 365.00 feet WELL CASING VOLUME 45.1 gallons

DATE SAMPLED 08-21-2001 LABORATORY SAMPLE I.D.# D1H240209-004

TIME SAMPLED 1410 DATE RECEIVED BY LAB 08-22-2001

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3969.59	08-21-2001
Flow Rate	00059	gal/min	0.98	08-21-2001
Pump Period	72004	min.	41	08-21-2001
Volume Evacuated	73675	gal	40.0	08-21-2001
Well Sampling Method	84077	---	PSPMP	N/A

Sampler Material: TEFLON Well Sampling Method: BENNETT PUMP

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	8.07	N/A	08-21-2001	field electrometer
Specific Conductivity	00095	umhos/cm		N/A	08-21-2001	field electrometer
T.O.X.	70354	ug/L	ND	60.0	09-11-2001	SW9020B
T.O.C.	00680	mg/L	ND	1.0	09-07-2001	SW9060

SIGNATURE: Fredrick E. Gebhardt

NAME (PRINTED): Fredrick E. Gebhardt

APPENDIX I

Analytical Results from Severn Trent Services Laboratory
for Ground-Water Samples Collected August 21-22, 2001

SEVERN TRENT SERVICES

STL Denver
4955 Yarrow Street
Arvada, CO 80002-4517

Tel: 303 736 0100
Fax: 303 431 7171
www.stl-inc.com

ANALYTICAL REPORT

Cannon AFB

Lot #: D1H240209

Richard Daddow

U.S. Geological Survey

STL DENVER

Karen Kuoppala
Project Manager

September 21, 2001

Table Of Contents

Standard Deliverables with Supporting Documentation

Report Contents	Number of Pages
Standard Deliverables *(The **Cover Letter** and the **Report Cover** page are considered integral parts of this Standard Deliverable package. This report is incomplete unless all pages indicated in this Table of Contents are included.)*	107

- **Table of Contents**
- **Case Narrative**
- **Executive Summary – Detection Highlights**
- **Methods Summary**
- **Method/Analyst Summary**
- **Lot Sample Summary**
- **Analytical Results**
- **QC Data Association Summary**
- **Chain-of-Custody**

Supporting Documentation *(Note: A one-page "Description of Supporting Documentation" is provided at the beginning of this section.).*	**Check below when supporting documentation is present.**
• **Volatile GC/MS**	✓
• **Semivolatile GC/MS**	
• **Volatile GC**	
• **Semivolatile GC**	✓
• **LC/MS or HPLC**	
• **Metals**	✓
• **General Chemistry**	✓
• **Subcontracted Data**	

Case Narrative
Lot D1H240209

With exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory quality control samples analyzed in conjunction with the samples in this project were within established control limits. The test result presented in this report meet all requirements of NELAC, and any exceptions are noted. This report shall not be reproduced, except in full, without permission from the laboratory.

Results reported for perchlorate by method 314.0 are not certified by NELAC.

This report contains the results for the nine samples and two trip blanks received under chain of custody on August 22, 23, and 24, 2001.

Sample Receiving
The samples were received in good condition at temperatures of 1.1°C, 0.2°C, and 3.8°C.

Sample D1H240209-007 was received outside the recommended hold time for nitrate and nitrite by method 353.2. The client was contacted and instructed the lab to proceed with all analyses.

There was a discrepancy between the sample ID listed on the chain of custody and on the container labels. The sample ID CAFB-S is listed on the chain of custody, but the containers for this sample are labeled CAFB-S-TB. The sample was logged as per the labels.

GC/MS Volatile Organics, SW846 8260B
2-butanone (MEK) and 1,4-dioxane were detected in the method blank at concentrations below the reporting limit, but above the method detection limit.

The MS/MSD was performed on an unrelated sample.

GC Semi-Volatiles – Pesticides, SW846 8081A
In the analysis of sample D1H240209-007, there was a difference greater than 40% between the primary and confirmation column results for beta-BHC, endosulfan I, endosulfate, and heopachlorepoxide. The lower results are reported.

Sample D1H240209-007 demonstrated recovery of the surrogate tetrachloro-m-xylene above control limits. The raw data indicates matrix interference.

A Continuing Calibration Verification (CCV) associated with sample D1H240209-007 demonstrated a percent difference greater than 15% for 4,4'-DDT. The average percent difference of all compounds in the CCV was less than 15%; therefore the CCV met all requirements for the method.

The method required MS/MSD could not be performed due to insufficient sample volumes.

GC Semi-Volatiles – PCBs, SW846 8082

The method required MS/MSD could not be performed due to insufficient sample volumes.

Total Metals, SW846 6010B, 6020, 7470A

Chromium was detected in the method blank at a concentration of 1.3 ug/L. The reporting limit for this project is 1.0 ug/L, which is less than STL's standard reporting limit of 2.0 ug/L; therefore no further corrective action was taken.

Lead was detected in the method blank at a concentration below the reporting limit, but above the method detection limit.

The MS/MSD performed on sample D1H240209-007 for method 6020 demonstrated recoveries below control limits for silver. All other recoveries and RPDs were in control.

The post digestion spike performed on sample D1H240209-007 demonstrated recoveries below control limits for silver. All other recoveries were in control.

The MS/MSDs for all other methods were performed on unrelated samples.

General Chemistry, 160.1, 353.2, 354.1, 300.0A, 9060, 9020, 9030, 314.0

Total organic halogens, and total organic carbon were detected in the method blanks at concentrations below the reporting limits, but above the method detection limits.

Samples D1H240209-001 through 005, 008, 009, and 010 were analyzed for total organic halogens at a dilution due to limited sample volume. The reporting limits are therefore raised.

The MS/MSD performed on sample D1H240209-007 for nitrite was in control for all recoveries and RPD.

The MS/MSD performed on sample D1H240209-001 for perchlorate was in control for all recoveries and RPD.

All other MS/MSDs were performed on unrelated samples.

EXECUTIVE SUMMARY - Detection Highlights

D1H240209

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
CAFB-T 08/21/01 11:55 001				
Total Organic Carbon	0.78 B	1.0	mg/L	SW846 9060
CAFB-B 08/21/01 13:10 002				
2-Butanone (MEK)	1.4 J	5.0	ug/L	SW846 8260B
CAFB-U 08/21/01 14:10 004				
Dichlorodifluoromethane	0.36 J	2.0	ug/L	SW846 8260B
Trichlorofluoromethane	0.45 J	2.0	ug/L	SW846 8260B
CAFB-S 08/21/01 11:05 005				
Carbon disulfide	3.7	1.0	ug/L	SW846 8260B
CAFB-S-TB 08/21/01 11:05 006				
Carbon disulfide	2.3	1.0	ug/L	SW846 8260B
CAFB-F 08/21/01 09:45 007				
Aldrin	0.013 J	0.050	ug/L	SW846 8081A
beta-BHC	0.049	0.050	ug/L	SW846 8081A
	Qualifiers: J,COL			
delta-BHC	0.027 J	0.050	ug/L	SW846 8081A
Endosulfan I	0.011	0.050	ug/L	SW846 8081A
	Qualifiers: J,COL			
Endosulfan sulfate	0.020	0.050	ug/L	SW846 8081A
	Qualifiers: J,COL			
Heptachlor	0.016 J	0.050	ug/L	SW846 8081A
Heptachlor epoxide	0.017	0.050	ug/L	SW846 8081A
	Qualifiers: J,COL			
Silver	1.6	1.0	ug/L	SW846 6020
Arsenic	4.0 B	5.0	ug/L	SW846 6020
Cadmium	0.74 B	1.0	ug/L	SW846 6020
Chromium	10.6	1.0	ug/L	SW846 6020
Lead	10.2	1.0	ug/L	SW846 6020
Antimony	2.0	1.0	ug/L	SW846 6020
Selenium	7.1	5.0	ug/L	SW846 6020
Mercury	0.054 B	0.20	ug/L	SW846 7470A
Cobalt	0.81 B	10.0	ug/L	SW846 6010B
Molybdenum	3.0 B	20.0	ug/L	SW846 6010B
Aluminum	1890	100	ug/L	SW846 6010B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

D1H240209

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
CAFB-F 08/21/01 09:45 007				
Barium	55.0	10.0	ug/L	SW846 6010B
Calcium	49600	200	ug/L	SW846 6010B
Copper	12.4 B	20.0	ug/L	SW846 6010B
Iron	1730	100	ug/L	SW846 6010B
Potassium	8380	3000	ug/L	SW846 6010B
Magnesium	44000	200	ug/L	SW846 6010B
Manganese	42.8	10.0	ug/L	SW846 6010B
Sodium	46900	5000	ug/L	SW846 6010B
Nickel	14.3 B	40.0	ug/L	SW846 6010B
Vanadium	23.3	10.0	ug/L	SW846 6010B
Zinc	60.5	20.0	ug/L	SW846 6010B
Total Dissolved Solids	538	10.0	mg/L	MCAWW 160.1
Nitrate	1.4	0.10	mg/L	MCAWW 353.2
Nitrite	0.0054 B	0.010	mg/L	MCAWW 354.1
Sulfate	131 Q	25.0	mg/L	MCAWW 300.0A
CAFB-C 08/22/01 09:55 008				
Trichloroethene	1.7	1.0	ug/L	SW846 8260B
Total Organic Carbon	0.62 B	1.0	mg/L	SW846 9060
CAFB-D 08/22/01 10:50 009				
Trichloroethene	0.94 J	1.0	ug/L	SW846 8260B
CAFB-Q 08/22/01 12:00 010				
Total Organic Carbon	0.38 B	1.0	mg/L	SW846 9060
CAFB-C-TB 08/22/01 09:55 011				
Acetone	2.3 J	10	ug/L	SW846 8260B

METHODS SUMMARY

D1H240209

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3010A
ICP-MS (6020)	SW846 6020	SW846 3010
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A	SW846 7470A
Nitrate	MCAWW 353.2	MCAWW 353.2
Nitrite	MCAWW 354.1	
Organochlorine Pesticides	SW846 8081A	SW846 3510C
Perchlorate	EPA 314.0	EPA 314.0
PCBs by SW-846 8082	SW846 8082	SW846 3510C
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Sulfides, Total 9030B/9034	SW846 9030B/903	SW846 9030B/903
Total Organic Carbon	SW846 9060	SW846 9060
Total Organic Halogens	SW846 9020B	SW846 9020B
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3010A
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B/826

References:

EPA "EASTERN ENVIRONMENTAL RADIATION FACILITY RADIOCHEMISTRY PROCEDURES MANUAL" US EPA EPA 520/5-84-006 AUGUST 1984

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

METHOD / ANALYST SUMMARY

D1H240209

ANALYTICAL METHOD	ANALYST	ANALYST ID
EPA 314.0	Dave Elkin	000901
MCAWW 160.1	Lisa Finkle	003889
MCAWW 300.0A	Nathan Lovstad	000090
MCAWW 353.2	Sara Agner	008534
MCAWW 354.1	Maria Fayard	002596
SW846 6010B	Lynn-Anne Trudell	006645
SW846 6010B	Steve Mustain	006720
SW846 6020	Royce Bruce	008595
SW846 7470A	Thomas Lill	006929
SW846 8081A	Dennis Jonsrud	009226
SW846 8082	Karla Garcia	000205
SW846 8260B	Mike G. Hoffman	001880
SW846 9020B	Duane Allee	001470
SW846 9030B/9034	Roger Winn	000597
SW846 9060	Sara Agner	008534

References:

EPA "EASTERN ENVIRONMENTAL RADIATION FACILITY RADIOCHEMISTRY PROCEDURES MANUAL" US EPA EPA 520/5-84-006 AUGUST 1984

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

D1H240209

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
EJH6R	001	CAFB-T	08/21/01	11:55
EJH68	002	CAFB-B	08/21/01	13:10
EJH7A	003	CAFB-BB	08/21/01	13:10
EJH7C	004	CAFB-U	08/21/01	14:10
EJH7F	005	CAFB-S	08/21/01	11:05
EJH7G	006	CAFB-S-TB	08/21/01	11:05
EJH7H	007	CAFB-F	08/21/01	09:45
EJH8K	008	CAFB-C	08/22/01	09:55
EJH8T	009	CAFB-D	08/22/01	10:50
EJH8W	010	CAFB-Q	08/22/01	12:00
EJH81	011	CAFB-C-TB	08/22/01	09:55

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

GC/MS Volatiles

Lot-Sample #...: D1H240209-001 Work Order #...: EJH6R1AA Matrix.....: GW
Date Sampled...: 08/21/01 11:55 Date Received..: 08/22/01
Prep Date.....: 08/31/01 Analysis Date..: 08/31/01
Prep Batch #...: 1248393 Analysis Time..: 14:07
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrolein	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Ethyl methacrylate	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

GC/MS Volatiles

Lot-Sample #...: D1H240209-001 Work Order #...: EJH6R1AA Matrix.....: GW

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(80 - 120)
1,2-Dichloroethane-d4	96	(72 - 127)
4-Bromofluorobenzene	95	(79 - 119)
Toluene-d8	100	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-T

GC/MS Volatiles

Lot-Sample #: D1H240209-001 Work Order #: EJH6R1AA Matrix: GW

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/L

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

GC/MS Volatiles

Lot-Sample #...: D1H240209-002 Work Order #...: EJH681AA Matrix.....: GW
Date Sampled...: 08/21/01 13:10 Date Received..: 08/22/01
Prep Date.....: 08/31/01 Analysis Date..: 08/31/01
Prep Batch #...: 1248393 Analysis Time..: 14:31
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrolein	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Ethyl methacrylate	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

GC/MS Volatiles

Lot-Sample #...: D1H240209-002 Work Order #...: EJH681AA Matrix.....: GW

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	**1.4 J**	**5.0**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(80 - 120)
1,2-Dichloroethane-d4	96	(72 - 127)
4-Bromofluorobenzene	95	(79 - 119)
Toluene-d8	102	(79 - 119)

NOTE(S):

J Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

CAFB-B

GC/MS Volatiles

Lot-Sample #: D1H240209-002 **Work Order #:** EJH681AA **Matrix:** GW

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/L

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-BB

GC/MS Volatiles

Lot-Sample #...: D1H240209-003 Work Order #...: EJH7A1AA Matrix.....: GW
Date Sampled...: 08/21/01 13:10 Date Received..: 08/22/01
Prep Date.....: 08/31/01 Analysis Date..: 08/31/01
Prep Batch #...: 1248393 Analysis Time..: 14:56
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrolein	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Ethyl methacrylate	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-BB

GC/MS Volatiles

Lot-Sample #...: D1H240209-003 Work Order #...: EJH7A1AA Matrix.....: GW

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(80 - 120)
1,2-Dichloroethane-d4	96	(72 - 127)
4-Bromofluorobenzene	96	(79 - 119)
Toluene-d8	103	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-BB

GC/MS Volatiles

Lot-Sample #: D1H240209-003 Work Order #: EJH7A1AA Matrix: GW

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/L

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

GC/MS Volatiles

Lot-Sample #...: D1H240209-004 Work Order #...: EJH7C1AA Matrix.....: GW
Date Sampled...: 08/21/01 14:10 Date Received..: 08/22/01
Prep Date.....: 08/31/01 Analysis Date..: 08/31/01
Prep Batch #...: 1248393 Analysis Time..: 15:20
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrolein	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	**0.36 J**	**2.0**	**ug/L**
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Ethyl methacrylate	ND	1.0	ug/L
Trichlorofluoromethane	**0.45 J**	**2.0**	**ug/L**
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

GC/MS Volatiles

Lot-Sample #...: D1H240209-004 **Work Order #...:** EJH7C1AA **Matrix.....:** GW

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	106	(80 - 120)
1,2-Dichloroethane-d4	102	(72 - 127)
4-Bromofluorobenzene	94	(79 - 119)
Toluene-d8	101	(79 - 119)

NOTE(S):

J Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

CAFB-U

GC/MS Volatiles

Lot-Sample #: D1H240209-004 **Work Order #:** EJH7C1AA **Matrix:** GW

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/L

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

GC/MS Volatiles

Lot-Sample #...: D1H240209-005 Work Order #...: EJH7F1AA Matrix.....: GW
Date Sampled...: 08/21/01 11:05 Date Received..: 08/24/01
Prep Date.....: 08/31/01 Analysis Date..: 08/31/01
Prep Batch #...: 1248393 Analysis Time..: 15:44
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrolein	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	**3.7**	**1.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Ethyl methacrylate	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

GC/MS Volatiles

Lot-Sample #...: D1H240209-005 Work Order #...: EJH7F1AA Matrix.....: GW

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	105	(80 - 120)
1,2-Dichloroethane-d4	99	(72 - 127)
4-Bromofluorobenzene	95	(79 - 119)
Toluene-d8	100	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-S

GC/MS Volatiles

Lot-Sample #: D1H240209-005 **Work Order #:** EJH7F1AA **Matrix:** GW

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/L

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S-TB

GC/MS Volatiles

Lot-Sample #...: D1H240209-006 Work Order #...: EJH7G1AA Matrix.....: GW
Date Sampled...: 08/21/01 11:05 Date Received..: 08/24/01
Prep Date.....: 08/31/01 Analysis Date..: 08/31/01
Prep Batch #...: 1248393 Analysis Time..: 16:09
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrolein	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	**2.3**	**1.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Ethyl methacrylate	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S-TB

GC/MS Volatiles

Lot-Sample #...: D1H240209-006 Work Order #...: EJH7G1AA Matrix.....: GW

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	105	(80 - 120)
1,2-Dichloroethane-d4	97	(72 - 127)
4-Bromofluorobenzene	96	(79 - 119)
Toluene-d8	83	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-S-TB

GC/MS Volatiles

Lot-Sample #: D1H240209-006 **Work Order #:** EJH7G1AA **Matrix:** GW

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/L

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-F

GC/MS Volatiles

Lot-Sample #...: D1H240209-007 Work Order #...: EJH7H1AA Matrix.....: GW
Date Sampled...: 08/21/01 09:45 Date Received..: 08/24/01
Prep Date.....: 08/31/01 Analysis Date..: 08/31/01
Prep Batch #...: 1248393 Analysis Time..: 16:33
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrolein	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Ethyl methacrylate	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-F

GC/MS Volatiles

Lot-Sample #...: D1H240209-007 Work Order #...: EJH7H1AA Matrix.....: GW

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(80 - 120)
1,2-Dichloroethane-d4	99	(72 - 127)
4-Bromofluorobenzene	97	(79 - 119)
Toluene-d8	101	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-F

GC/MS Volatiles

Lot-Sample #: D1H240209-007 **Work Order #:** EJH7H1AA **Matrix:** GW

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/L

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

GC/MS Volatiles

Lot-Sample #...: D1H240209-008 Work Order #...: EJH8K1AA Matrix.....: GW
Date Sampled...: 08/22/01 09:55 Date Received..: 08/23/01
Prep Date.....: 08/31/01 Analysis Date..: 08/31/01
Prep Batch #...: 1248393 Analysis Time..: 16:57
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrolein	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Ethyl methacrylate	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

GC/MS Volatiles

Lot-Sample #...: D1H240209-008 Work Order #...: EJH8K1AA Matrix.....: GW

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**1.7**	**1.0**	**ug/L**
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	105	(80 - 120)
1,2-Dichloroethane-d4	98	(72 - 127)
4-Bromofluorobenzene	95	(79 - 119)
Toluene-d8	99	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-C

GC/MS Volatiles

Lot-Sample #: D1H240209-008 **Work Order #:** EJH8K1AA **Matrix:** GW

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/L

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

GC/MS Volatiles

Lot-Sample #...: D1H240209-009 Work Order #...: EJH8T1AA Matrix.....: GW
Date Sampled...: 08/22/01 10:50 Date Received..: 08/23/01
Prep Date.....: 08/31/01 Analysis Date..: 08/31/01
Prep Batch #...: 1248393 Analysis Time..: 17:22
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrolein	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Ethyl methacrylate	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

GC/MS Volatiles

Lot-Sample #...: D1H240209-009 Work Order #...: EJH8T1AA Matrix.....: GW

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**0.94 J**	**1.0**	**ug/L**
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	105	(80 - 120)
1,2-Dichloroethane-d4	99	(72 - 127)
4-Bromofluorobenzene	97	(79 - 119)
Toluene-d8	100	(79 - 119)

NOTE(S):

J Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

CAFB-D

GC/MS Volatiles

Lot-Sample #: D1H240209-009 Work Order #: EJH8T1AA Matrix: GW

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/L

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

GC/MS Volatiles

Lot-Sample #...: D1H240209-010 Work Order #...: EJH8W1AA Matrix.....: GW
Date Sampled...: 08/22/01 12:00 Date Received..: 08/23/01
Prep Date.....: 08/31/01 Analysis Date..: 08/31/01
Prep Batch #...: 1248393 Analysis Time..: 17:45
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Acetonitrile	ND	20	ug/L
Acrolein	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Ethyl methacrylate	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

GC/MS Volatiles

Lot-Sample #...: D1H240209-010 Work Order #...: EJH8W1AA Matrix.....: GW

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(80 - 120)
1,2-Dichloroethane-d4	96	(72 - 127)
4-Bromofluorobenzene	94	(79 - 119)
Toluene-d8	101	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-Q

GC/MS Volatiles

Lot-Sample #: D1H240209-010 **Work Order #:** EJH8W1AA **Matrix:** GW

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/L

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C-TB

GC/MS Volatiles

Lot-Sample #...: D1H240209-011 Work Order #...: EJH811AA Matrix.....: GW
Date Sampled...: 08/22/01 09:55 Date Received..: 08/23/01
Prep Date.....: 08/31/01 Analysis Date..: 08/31/01
Prep Batch #...: 1248393 Analysis Time..: 18:09
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	**2.3 J**	**10**	**ug/L**
Acetonitrile	ND	20	ug/L
Acrolein	ND	20	ug/L
Acrylonitrile	ND	20	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroprene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Allyl chloride	ND	2.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethylbenzene	ND	1.0	ug/L
Ethyl methacrylate	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
2-Hexanone	ND	5.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutyl alcohol	ND	50	ug/L

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C-TB

GC/MS Volatiles

Lot-Sample #...: D1H240209-011 Work Order #...: EJH811AA Matrix.....: GW

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methacrylonitrile	ND	10	ug/L
Methylene chloride	ND	1.0	ug/L
Methyl methacrylate	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Propionitrile	ND	4.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(80 - 120)
1,2-Dichloroethane-d4	95	(72 - 127)
4-Bromofluorobenzene	96	(79 - 119)
Toluene-d8	102	(79 - 119)

NOTE(S):

J Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-F

GC Semivolatiles

Lot-Sample #...: D1H240209-007 Work Order #...: EJH7H1AC Matrix.....: GW
Date Sampled...: 08/21/01 09:45 Date Received..: 08/24/01
Prep Date.....: 08/28/01 Analysis Date..: 09/06/01
Prep Batch #...: 1240173 Analysis Time..: 01:08
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aldrin	**0.013 J**	**0.050**	**ug/L**
alpha-BHC	ND	0.050	ug/L
beta-BHC	**0.049 J,COL**	**0.050**	**ug/L**
delta-BHC	**0.027 J**	**0.050**	**ug/L**
gamma-BHC (Lindane)	ND	0.050	ug/L
alpha-Chlordane	ND	0.050	ug/L
gamma-Chlordane	ND	0.050	ug/L
4,4'-DDD	ND	0.050	ug/L
4,4'-DDE	ND	0.050	ug/L
4,4'-DDT	ND	0.050	ug/L
Diallate	ND	1.0	ug/L
Dieldrin	ND	0.050	ug/L
Endosulfan I	**0.011 J,COL**	**0.050**	**ug/L**
Endosulfan II	ND	0.050	ug/L
Endosulfan sulfate	**0.020 J,COL**	**0.050**	**ug/L**
Endrin	ND	0.050	ug/L
Endrin aldehyde	ND	0.050	ug/L
Endrin ketone	ND	0.050	ug/L
Heptachlor	**0.016 J**	**0.050**	**ug/L**
Heptachlor epoxide	**0.017 J,COL**	**0.050**	**ug/L**
Isodrin	ND	0.10	ug/L
Kepone	ND	1.0	ug/L
Methoxychlor	ND	0.10	ug/L
Toxaphene	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	69	(15 - 162)
Tetrachloro-m-xylene	135 *	(49 - 133)

NOTE(S):

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

COL More than 40% difference between primaryand confirmation column results. The lower of the two results is reported.

US GEOLOGICAL SURVEY

CAFB-C-TB

GC/MS Volatiles

Lot-Sample #: D1H240209-011 Work Order #: EJH811AA Matrix: GW

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/L

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-F

GC Semivolatiles

Lot-Sample #...: D1H240209-007 Work Order #...: EJH7H1AD Matrix.....: GW
Date Sampled...: 08/21/01 09:45 Date Received..: 08/24/01
Prep Date.....: 08/28/01 Analysis Date..: 09/06/01
Prep Batch #...: 1240171 Analysis Time..: 12:31
Dilution Factor: 1

Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	1.0	ug/L
Aroclor 1221	ND	1.0	ug/L
Aroclor 1232	ND	1.0	ug/L
Aroclor 1242	ND	1.0	ug/L
Aroclor 1248	ND	1.0	ug/L
Aroclor 1254	ND	1.0	ug/L
Aroclor 1260	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	70	(52 - 129)
Tetrachloro-m-xylene	73	(54 - 113)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-F

TOTAL Metals

Lot-Sample #...: D1H240209-007 Matrix.....: GW
Date Sampled...: 08/21/01 09:45 Date Received..: 08/24/01

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1240380						
Aluminum	1890	100	ug/L	SW846 6010B	09/03-09/06/01	EJH7H1AL
		Dilution Factor: 1		Analysis Time..: 19:20		
Barium	55.0	10.0	ug/L	SW846 6010B	09/03-09/06/01	EJH7H1AM
		Dilution Factor: 1		Analysis Time..: 19:20		
Beryllium	ND	2.0	ug/L	SW846 6010B	09/03-09/10/01	EJH7H1AN
		Dilution Factor: 1		Analysis Time..: 23:29		
Calcium	49600	200	ug/L	SW846 6010B	09/03-09/06/01	EJH7H1CA
		Dilution Factor: 1		Analysis Time..: 19:20		
Cobalt	0.81 B	10.0	ug/L	SW846 6010B	09/03-09/10/01	EJH7H1A7
		Dilution Factor: 1		Analysis Time..: 23:29		
Copper	12.4 B	20.0	ug/L	SW846 6010B	09/03-09/06/01	EJH7H1AP
		Dilution Factor: 1		Analysis Time..: 19:20		
Iron	1730	100	ug/L	SW846 6010B	09/03-09/06/01	EJH7H1AQ
		Dilution Factor: 1		Analysis Time..: 19:20		
Potassium	8380	3000	ug/L	SW846 6010B	09/03-09/06/01	EJH7H1CD
		Dilution Factor: 1		Analysis Time..: 19:20		
Magnesium	44000	200	ug/L	SW846 6010B	09/03-09/06/01	EJH7H1CC
		Dilution Factor: 1		Analysis Time..: 19:20		
Manganese	42.8	10.0	ug/L	SW846 6010B	09/03-09/06/01	EJH7H1AR
		Dilution Factor: 1		Analysis Time..: 19:20		
Sodium	46900	5000	ug/L	SW846 6010B	09/03-09/06/01	EJH7H1CE
		Dilution Factor: 1		Analysis Time..: 19:20		
Nickel	14.3 B	40.0	ug/L	SW846 6010B	09/03-09/06/01	EJH7H1AT
		Dilution Factor: 1		Analysis Time..: 19:20		
Tin	ND	100	ug/L	SW846 6010B	09/03-09/10/01	EJH7H1A8
		Dilution Factor: 1		Analysis Time..: 23:29		

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-F

TOTAL Metals

Lot-Sample #...: D1H240209-007 Matrix.....: GW

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	23.3	10.0	ug/L	SW846 6010B	09/03-09/06/01	EJH7H1AU
		Dilution Factor: 1		Analysis Time..: 19:20		
Zinc	60.5	20.0	ug/L	SW846 6010B	09/03-09/06/01	EJH7H1AV
		Dilution Factor: 1		Analysis Time..: 19:20		
Molybdenum	3.0 B	20.0	ug/L	SW846 6010B	09/03-09/10/01	EJH7H1A9
		Dilution Factor: 1		Analysis Time..: 23:29		
Prep Batch #...: 1240384						
Mercury	0.054 B	0.20	ug/L	SW846 7470A	09/12-09/13/01	EJH7H1A6
		Dilution Factor: 1		Analysis Time..: 19:54		
Prep Batch #...: 1242494						
Silver	1.6	1.0	ug/L	SW846 6020	09/10-09/13/01	EJH7H1A3
		Dilution Factor: 1		Analysis Time..: 16:48		
Arsenic	4.0 B	5.0	ug/L	SW846 6020	09/10-09/13/01	EJH7H1AX
		Dilution Factor: 1		Analysis Time..: 16:48		
Cadmium	0.74 B	1.0	ug/L	SW846 6020	09/10-09/13/01	EJH7H1A0
		Dilution Factor: 1		Analysis Time..: 16:48		
Chromium	10.6	1.0	ug/L	SW846 6020	09/10-09/13/01	EJH7H1A5
		Dilution Factor: 1		Analysis Time..: 16:48		
Lead	10.2	1.0	ug/L	SW846 6020	09/10-09/13/01	EJH7H1A1
		Dilution Factor: 1		Analysis Time..: 16:48		
Antimony	2.0	1.0	ug/L	SW846 6020	09/10-09/13/01	EJH7H1AW
		Dilution Factor: 1		Analysis Time..: 16:48		
Selenium	7.1	5.0	ug/L	SW846 6020	09/10-09/13/01	EJH7H1A2
		Dilution Factor: 1		Analysis Time..: 16:48		
Thallium	ND	1.0	ug/L	SW846 6020	09/10-09/13/01	EJH7H1A4
		Dilution Factor: 1		Analysis Time..: 16:48		

NOTE(S):

B Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

General Chemistry

Lot-Sample #...: D1H240209-001 Work Order #...: EJH6R Matrix.....: GW
Date Sampled...: 08/21/01 11:55 Date Received..: 08/22/01

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate	ND	20.0	ug/L	EPA 314.0	09/18/01	1262183
		Dilution Factor: 1		Analysis Time..: 17:24		
Total Organic Carbon	**0.78 B**	**1.0**	**mg/L**	**SW846 9060**	**08/29/01**	**1241268**
		Dilution Factor: 1		Analysis Time..: 08:00		
Total Organic Halogens	ND V	60.0	ug/L	SW846 9020B	09/11/01	1255274
		Dilution Factor: 2		Analysis Time..: 12:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

V Elevated reporting limit. The reporting limit is elevated due to limited sample volume.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

General Chemistry

Lot-Sample #...: D1H240209-002 Work Order #...: EJH68 Matrix.....: GW
Date Sampled...: 08/21/01 13:10 Date Received..: 08/22/01

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate	ND	20.0	ug/L	EPA 314.0	09/18/01	1262183
		Dilution Factor: 1		Analysis Time..: 18:08		
Total Organic Carbon	ND	1.0	mg/L	SW846 9060	08/29/01	1241268
		Dilution Factor: 1		Analysis Time..: 08:00		
Total Organic Halogens	ND V	60.0	ug/L	SW846 9020B	09/11/01	1255274
		Dilution Factor: 2		Analysis Time..: 12:00		

NOTE(S):

RL Reporting Limit

V Elevated reporting limit. The reporting limit is elevated due to limited sample volume.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-BB

General Chemistry

Lot-Sample #...: D1H240209-003 Work Order #...: EJH7A Matrix.....: GW
Date Sampled...: 08/21/01 13:10 Date Received..: 08/22/01

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate	ND	20.0	ug/L	EPA 314.0	09/18/01	1262183
		Dilution Factor: 1		Analysis Time..: 18:23		
Total Organic Carbon	ND	1.0	mg/L	SW846 9060	08/29/01	1241268
		Dilution Factor: 1		Analysis Time..: 08:00		
Total Organic Halogens	ND V	60.0	ug/L	SW846 9020B	09/11/01	1255274
		Dilution Factor: 2		Analysis Time..: 12:00		

NOTE(S):

RL Reporting Limit

V Elevated reporting limit. The reporting limit is elevated due to limited sample volume.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

General Chemistry

Lot-Sample #...: D1H240209-004 Work Order #...: EJH7C Matrix.....: GW
Date Sampled...: 08/21/01 14:10 Date Received..: 08/22/01

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate	ND	20.0	ug/L	EPA 314.0	09/18/01	1262183
		Dilution Factor: 1		Analysis Time..: 18:38		
Total Organic Carbon	ND	1.0	mg/L	SW846 9060	09/07/01	1253208
		Dilution Factor: 1		Analysis Time..: 08:00		
Total Organic Halogens	ND V	60.0	ug/L	SW846 9020B	09/11/01	1255274
		Dilution Factor: 2		Analysis Time..: 12:00		

NOTE(S):

RL Reporting Limit

V Elevated reporting limit. The reporting limit is elevated due to limited sample volume.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

General Chemistry

Lot-Sample #...: D1H240209-005 Work Order #...: EJH7F Matrix.....: GW
Date Sampled...: 08/21/01 11:05 Date Received..: 08/24/01

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate	ND	20.0	ug/L	EPA 314.0	09/18/01	1262183
		Dilution Factor: 1		Analysis Time..: 18:52		
Total Organic Carbon	ND	1.0	mg/L	SW846 9060	09/07/01	1253208
		Dilution Factor: 1		Analysis Time..: 08:00		
Total Organic Halogens	ND V	60.0	ug/L	SW846 9020B	09/11/01	1255274
		Dilution Factor: 2		Analysis Time..: 12:00		

NOTE(S):

RL Reporting Limit

V Elevated reporting limit. The reporting limit is elevated due to limited sample volume.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-F

General Chemistry

Lot-Sample #...: D1H240209-007 Work Order #...: EJH7H Matrix.....: GW
Date Sampled...: 08/21/01 09:45 Date Received..: 08/24/01

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate	1.4	0.10	mg/L	MCAWW 353.2	08/24/01	1257177
		Dilution Factor: 1		Analysis Time..: 10:00		
Nitrite	0.0054 B	0.010	mg/L	MCAWW 354.1	08/24-08/29/01	1242278
		Dilution Factor: 1		Analysis Time..: 13:45		
Perchlorate	ND	20.0	ug/L	EPA 314.0	09/18/01	1262183
		Dilution Factor: 1		Analysis Time..: 19:07		
Sulfate	131 Q	25.0	mg/L	MCAWW 300.0A	09/12-09/13/01	1256303
		Dilution Factor: 5		Analysis Time..: 09:35		
Total Dissolved Solids	538	10.0	mg/L	MCAWW 160.1	08/27/01	1240202
		Dilution Factor: 1		Analysis Time..: 15:00		
Total Sulfide	ND	4.0	mg/L	SW846 9030B/9034	08/28/01	1241288
		Dilution Factor: 1		Analysis Time..: 12:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Q Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

General Chemistry

Lot-Sample #...: D1H240209-008 Work Order #...: EJH8K Matrix.....: GW
Date Sampled...: 08/22/01 09:55 Date Received..: 08/23/01

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate	ND	20.0	ug/L	EPA 314.0	09/18/01	1262183
		Dilution Factor: 1		Analysis Time..: 19:21		
Total Organic Carbon	0.62 B	1.0	mg/L	SW846 9060	09/07/01	1253208
		Dilution Factor: 1		Analysis Time..: 08:00		
Total Organic Halogens	ND V	60.0	ug/L	SW846 9020B	09/11/01	1255274
		Dilution Factor: 2		Analysis Time..: 12:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

V Elevated reporting limit. The reporting limit is elevated due to limited sample volume.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

General Chemistry

Lot-Sample #...: D1H240209-009 Work Order #...: EJH8T Matrix.....: GW
Date Sampled...: 08/22/01 10:50 Date Received..: 08/23/01

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate	ND	20.0	ug/L	EPA 314.0	09/18/01	1262183
		Dilution Factor: 1		Analysis Time..: 19:36		
Total Organic Carbon	ND	1.0	mg/L	SW846 9060	09/07/01	1253208
		Dilution Factor: 1		Analysis Time..: 08:00		
Total Organic Halogens	ND V	60.0	ug/L	SW846 9020B	09/11/01	1255274
		Dilution Factor: 2		Analysis Time..: 12:00		

NOTE(S):

RL Reporting Limit

V Elevated reporting limit. The reporting limit is elevated due to limited sample volume.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

General Chemistry

Lot-Sample #...: D1H240209-010 Work Order #...: EJH8W Matrix.....: GW
Date Sampled...: 08/22/01 12:00 Date Received..: 08/23/01

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate	ND	20.0	ug/L	EPA 314.0	09/18/01	1262183
		Dilution Factor: 1		Analysis Time..: 19:51		
Total Organic Carbon	0.38 B	1.0	mg/L	SW846 9060	09/07/01	1253208
		Dilution Factor: 1		Analysis Time..: 08:00		
Total Organic Halogens	ND V	60.0	ug/L	SW846 9020B	09/11/01	1255274
		Dilution Factor: 2		Analysis Time..: 12:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

V Elevated reporting limit. The reporting limit is elevated due to limited sample volume.

APPENDIX II

Laboratory Quality Assurance / Quality Control Results

LABORATORY DATA VALIDATION CHECKLIST

SECTION 1.0: GENERAL INFORMATION (Landfill 5) (*also see Appendix 1)*

Data reviewer(s) name, affiliation, title, signature, and date of review:

Fredrick E. Gebhardt, USGS-WRD, Hydrologic Technician 26NOV01

DATA INVENTORY

1.1 Sample project number: Severn Trent Services Report # D1H240209

1.2 Operable unit and site: Landfill 5 unit, Cell 3

Sample collection date: 21-22AUG01

1.3 Sample locations (location IDs): Wells CAFB-B, CAFB-C, CAFB-D, CAFB-Q, CAFB-S CAFB-T, CAFB-U, and CAFB-BB which was a duplicate sample of CAFB-B.

1.4 Sample matrix (ground water, soil, other): ground water

1.5 Type and number of field samples (environmental and quality control) in sample project:

Type	number	Type	number
environmental	7	MS/MSD	0
field duplicate	1	trip blank	2
equipment blank	0	ambient blank	0

GENERAL INFORMATION (Sewage Lagoons) (*also see Appendix 1)*

Data reviewer(s) name, affiliation, title, signature, and date of review:

Fredrick E. Gebhardt, USGS-WRD, Hydrologic Technician 26NOV01

DATA INVENTORY

1.1 Sample project number: Severn Trent Services, Report # D1H240209

1.2 Operable unit and site: Sewage Lagoon

Sample collection date: 21AUG01

1.3 Sample locations (location IDs): Well CAFB-F

1.4 Sample matrix (ground water, soil, other): ground water

1.5 Type and number of field samples (environmental and quality control) in sample project:

Type	number	Type	number
environmental	1	MS/MSD	0
field duplicate	0	trip blank	0
equipment blank	0	ambient blank	0

OTHER CHECKLIST SECTIONS COMPLETED FOR SAMPLE PROJECT:

√ 2.0 Data Reports and Completeness

√ 3.0 Appendix-IX, Volatile organic compounds (VOC)--Method SW5030/SW82601B

√ 4.0 Total Organic Carbon (TOC)--Method SW9060

√ 5.0 Total Organic Halogens (TOX)--Method SW9020B

√ 6.0 Appendix-IX, Pesticides and PCB's--Method SW3520/SW8081A AND SW8082

√ 7.0 Appendix-IX, Metals (Total)--Methods SW3005/SW6010B (Aluminum, Barium, Beryllium, Calcium, Cobalt, Copper, Iron, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Sodium, Tin, Vanadium, and Zinc), SW3005/SW6020 (Antimony, Arsenic, Cadmium, Chromium, Lead, Selenium, Silver, and Thallium), and SW3020/SW7470A (Mercury).

√ 8.0 Sulfate--Method MCAWW300.0A

√ 9.0 Nitrate/Nitrite--Method MCAWW353.2/MCAWW354.1

√ 10.0 Sulfide--Method SW9030B/9034

√ 11.0 Total Dissolved Solids (TDS)--Method MCAWW160.1

SECTION 2.0: DATA REPORTS AND COMPLETENESS

Name of reviewer(s) and review date: Fredrick E. Gebhardt 26NOV01

LABORATORY DATA REPORTS

2.1 Analytical Results Report--report date: 21SEP01

2.2 Raw Data Report--number of volumes: N/A

2.3 Was completeness of lab reports acceptable? yes √ no

(overview, analytical results, quality-control report)

Lab reports were complete and acceptable.

DATA COMPLETENESS

2.4 Were all samples requested on chain of custody form analyzed by lab? yes √ no

All appendix IX parameters (Landfill 5):

	VOC SW8260B	TOC SW9060	TOX SW9020
requested:	10	8	8
analyzed:	10	8	8

All appendix IX parameters (Sewage Lagoon--CAFB-F):

	VOC SW8260B	Pesticides SW8081A, SW8082	Total Metals: 16-SW6010B 8-SW6020 Mercury-SW7470A	Sulfate MCAWW 300.0A	Nitrate & Nitrite by MCAWW 353.2/354.1
requested:	1	1	1	1	1
analyzed:	1	1	1	1	1

	TDS MCAWW 160.1
requested:	1
analyzed:	1

2.5 List cancelled analyses on cancelled-data worksheet: None.

2.6 Was sample cooler seal intact upon receipt by lab? Yes

2.7 What was the sample cooler's temperatures upon receipt by lab? 0.2 - 3.8 °C

2.8 Additional comments:

Equipment blank was not collected because dedicated pumps were installed in each well at various times by contractors.

Wells from the sewage lagoon are normally not sampled at this time of the year. CAFB-F couldn't be sampled in the spring, due to the drop in the water table. The pump system was extended allowing the well to be sampled currently.

SECTION 3.0: APPENDIX-IX, VOLATILE ORGANIC COMPOUNDS-- METHOD SW5030/SW8260B

Name of reviewer(s) and review date: Fredrick E. Gebhardt 26NOV01

LEVEL I AND II -- Data Validation

HOLDING TIMES

3.1 Were project-required analytical holding times met? yes √ no ____

(14-day limit from sample date to analysis date for water samples)

[FG-ORG, p. 6-8]

sample date: 21-22AUG01 analysis date limit: 3-4SEP01

Samples were analyzed by 31AUG01, and met required holding times.

SURROGATE SPIKE RECOVERY

3.2 Did surrogate spike results meet frequency and QC acceptance criteria? yes √ no ____

(all samples and blanks: SW8260A:%R varies)

[FG-ORG, p. 26-29]

All surrogate spike recovery results met Quanterra QC acceptance criteria.

PROJECT REPORTING LIMIT (PRL)

3.3 Did sample results meet project reporting limits? yes ____ no ____

PRL's were not provided in Sampling and Analysis Plan (SAP).

FIELD DUPLICATES

3.4 Did field duplicate results meet frequency and QC acceptance criteria?yes √ no ____

(1 set per sampling period; RPD < 30 %)

Field duplicate results met QC acceptance criteria.

EQUIPMENT BLANKS

3.5 Did equipment blank results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set for non-dedicated pump; analytes <3 x RL)

[FG-ORG, p. 20-25]

No equipment blanks were collected.

AMBIENT and TRIP BLANKS (water samples only)

3.6 Did blank results meet frequency and QC acceptance criteria? yes ____ no √

(ambient and trip blank frequency varies per sampling period)

[FG-ORG, p. 20-25]

Trip blank results for sample CAFB-S-TB did not meet QC acceptance criteria. Ambient condition blank was not collected for this sampling period.

TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

3.7 List number and level of TICs for each sample analyzed on TIC data sheet.

[FG-ORG, p. 41-44]

DUPLICATE CONTROL SAMPLES (DCSs)

3.8 Did DCS results meet frequency and QC acceptance criteria? yes √ no ____

(1 DCS per quarter; %R and RPD within 3 SD of historical results of lab performance)

[FG-ORG, p. 32-33]

All DCS results met QC acceptance criteria.

SINGLE CONTROL SAMPLES (SCSs)

3.9 Did SCS results meet frequency and QC acceptance criteria? yes √ no ____

(1 SCS per sample lot; %R limits established by laboratory)

[FG-ORG, p. 32-33]

All SCS results met QC acceptance criteria.

LABORATORY METHOD BLANKS

3.10 Did method blank results meet frequency and QC acceptance criteria? yes √ no ____

(1 method blank per batch; analyte concentration ≤ RL except for common lab contaminants ≤ 5 times RL)

[FG-ORG, p. 20-25]

All method blank results were ND or J value (less than RL) and met QC acceptance criteria.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

3.11 Did MS/MSD results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set per quarter; method SW8260A: %R and RPD varies)

[FG-ORG, p. 30-31]

MS/MSD samples were not collected.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

3.12 Did initial calibrations meet frequency and QC acceptance criteria? yes ____ no ____

[FG-ORG, p. 12-16]

Not reviewed.

3.13 Did continuing calibrations meet frequency and QC acceptance criteria? yes ____ no ____

[FG-ORG, p. 17-19]

Not reviewed.

GC/MS TUNING

3.14 Did BFB tuning results meet frequency and QC acceptance criteria? yes ____ no ____

[FG-ORG, p. 9-11]

Not reviewed.

INTERNAL STANDARDS (IS)

3.15 Did IS results meet frequency and QC acceptance criteria? yes _____ no _____

(all blanks, standards, and samples; IS area limits within 50 to 200%)
[FG-ORG, p. 35-36]

Not reviewed

SAMPLE RESULT VERIFICATION

3.16 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? [FG-ORG, p. 47] yes _____ no _____

Not reviewed

LEVEL I and II -- Data Validation

ANALYTE RESULTS WITH DATA QUALIFIERS

3.17 Summarize analyte results with data qualifiers. List pertinent information on qualified-data worksheet: For sample CAFB-B had qualifier J for 2-Butanone(MEK).
Sample CAFB-D had qualifier J for trichloroethene.
Sample CAFB-U had qualifiers J for both dichlorodifluoromethane and trichlorofluoromethane.

Trip blank sample CAFB-C-TB had qualifier J for acetone.

3.18 Additional comments:

SECTION 4.0: TOTAL ORGANIC CARBON (TOC)-- METHOD SW9060

Name of reviewer(s) and review date: Fredrick E. Gebhardt 26NOV01

LEVEL I AND II -- Data Validation

HOLDING TIMES

4.1 Were project-required analytical holding times met? yes √ no ____

(28-day limit from sample date to analysis date for water samples)

[FG-ORG, p. 6-8]

sample date: 21-22AUG01 analysis date limit: 18-19SEP01

Samples were analyzed by 7SEP01 and met required holding times.

PROJECT REPORTING LIMIT (PRL)

4.2 Did sample results meet project reporting limits? yes √ no ____

(Quanterra RL: 1.0 mg/L)

PRL was not provided in SAP. Reporting limit was not raised on any of the samples for method SW9060.

FIELD DUPLICATES

4.3 Did field duplicate results meet frequency and QC acceptance criteria? yes √ no ____

(1 set per each sampling period; RPD <30 %)

Field duplicate resuts were within acceptance criteria.

EQUIPMENT BLANKS

4.4 Did equipment blank results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set for non-dedicated pum; target compound concentration ≤ RL)

[FG-ORG, p. 20-25]

Equipment blanks were not collected.

LABORATORY CONTROL SAMPLES (LCSs)

4.5 Did LCS results meet frequency and QC acceptance criteria? yes √ no ____

(1 LCS per batch; %R and RPD within 3 SD of historical results of Lab performance)

[FG-ORG, p. 32-33]

All LCS results were within acceptance criteria.

LABORATORY METHOD BLANK

4.6 Did method blank results meet frequency and QC acceptance criteria? yes √ no ____

(1 method blank per batch)

[FG-ORG, p. 20-25]

Laboratory method blank results were ND and met QC acceptance criteria.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

4.7 Did MS/MSD results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set per quarter)

[FG-ORG, p. 30-31]

MS/MSD samples were not collected.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

4.8 Did initial and continuing calibrations meet frequency and QC criteria? yes ____ no ____

[FG-ORG, p. 12-16]

Not reviewed.

SAMPLE RESULT VERIFICATION

4.9 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? yes ____ no ____

Not reviewed.

4.10 Additional comments: Samples CAFB-C, CAFB-O, and CAFB-T had qualifier B which means that it is estimated and less than reporting limit.

SECTION 5.0: TOTAL ORGANIC HALOGENS (TOX) METHOD SW9020B

Name of reviewer(s) and review date: Fredrick E. Gebhardt 26NOV01

LEVEL I AND II -- Data Validation

HOLDING TIMES

5.1 Were project-required analytical holding times met? yes √ no ____

(28-day limit from sample date to analysis date for water samples)

[FG-ORG, p. 6-8]

sample date: 21-22AUG01 analysis date limit: 18-19SEP01

Samples were analyzed by 11SEP01, and met required holding times.

PROJECT REPORTING LIMIT

5.2 Did sample results meet project reporting limits? yes √ no ____

(Quanterra RL: 30 μg/L)

PRL was not provided in SAP. Reporting limits were not raised for any of the samples for TOX analyses.

FIELD DUPLICATES

5.3 Did field duplicate results meet frequency and QC acceptance criteria? yes √ no ____

(1 set per each sampling period; RPD ≤ 30 %)

Field duplicate results did meet QC acceptance criteria.

EQUIPMENT BLANKS

5.4 Did equipment blank results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set for non-dedicated pump; target compound concentration ≤ RL)

[FG-ORG, p. 20-25]

Equipment blanks were not collected.

LABORATORY CONTROL SAMPLES (LCSs)

5.5 Did LCS results meet frequency and QC acceptance criteria? yes √ no ____

(1 LCS per batch; %R within 80 to 120% and RPD < 20%)

[FG-ORG, p. 32-33]

LCS results met QC acceptance criteria.

LABORATORY METHOD BLANKS

5.6 Did method blank results meet frequency and QC acceptance criteria? yes √ no ____

(1 method blank per quarter)

[FG-ORG, p. 20-25]

Laboratory method blank results were ND and met QC acceptance criteria.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

5.7 Did MS/MSD results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set per quarter; %R within 80 to 120 %; RPD < 20 %)

[FG-ORG, p. 30-31]

MS/MSD samples were not collected.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

5.8 Did initial and continuing calibrations meet frequency and QC criteria? yes ____ no ____

[FG-ORG, p. 12-16]

Not reviewed.

SAMPLE RESULT VERIFICATION

5.9 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? yes ____ no ____

Not reviewed.

5.10 Additional comments: Samples had CAFB-B, CAFB-BB, CAFB-C, CAFB-D, CAFB-O, CAFB-S, CAFB-T, and CAFB-U had qualifier V which means elevated reporting limit due to limited sample volume.

SECTION 6.0: APPENDIX-IX, PESTICIDES AND PCB'S-- METHOD SW3520/SW8081A AND SW8082

Name of reviewer(s) and review date: Fredrick E. Gebhardt 26NOV01

LEVEL I AND II -- Data Validation

HOLDING TIMES

4.1 Were project-required analytical holding times met? yes √ no ____

(7-day limit from sample date to extraction date and 40-day limit from extraction date to analysis date)
[FG-ORG, p. 49-50]

sample date: 21AUG01 extraction date limit: 28AUG01
extraction date: 28AUG01 analysis date limit: 30SEP01

Samples were extracted by 28AUG01 and were analyzed by 6SEP01.
All samples met required extraction and analysis holding times.

SURROGATE SPIKE RECOVERY

4.2 Did surrogate spike results meet frequency and QC acceptance criteria? yes ____ no √

(frequency: all samples and blanks: %R varies)
[FG-ORG, p. 66-68]

Surrogate spike recovery for CAFB-F by method SW8081A was outside stated control limits.

PROJECT REPORTING LIMIT

4.3 Did sample results meet project reporting limits? yes √ no ____

PRL's were not provided in SAP. Reporting limits were not raised for any of the samples.

FIELD DUPLICATES

4.4 Did field duplicate results meet frequency and QC acceptance criteria?yes _____ no _____

(1 set per sampling period; RPD ≤ 30%)

Field duplicate was not collected for this sampling round.

EQUIPMENT BLANKS

4.5 Did equipment blank results meet frequency and QC acceptance criteria? yes _____ no _____

(1 set for non-dedicated pump; target compound concentration ≤ RL)

[FG-ORG, p. 62-65]

N/A - See Comment 2.8.

DUPLICATE CONTROL SAMPLES (DCSs)

4.6 Did DCS results meet frequency and QC acceptance criteria? yes √ no _____

(1 DCS per quarter; %R and RPD within 3 SD of historical results of lab performance)

[FG-ORG, p. 71-72]

All DCS results were within control limits.

SINGLE CONTROL SAMPLES (SCSs)

4.7 Did SCS results meet frequency and QC acceptance criteria? yes √ no _____

(1 SCS per quarter; %R limits established by laboratory)

[FG-ORG, p. 71-72]

SCS results met QC acceptance criteria.

LABORATORY METHOD BLANKS

4.8 Did method blank results meet frequency and QC acceptance criteria?yes √ no _____

(1 method blank per batch; concentration ≤ 2 times RL)

[FG-ORG, p. 62-65]

All method blank results were ND and met QC acceptance criteria.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

4.9 Did MS/MSD results meet frequency and QC acceptance criteria? yes _____ no _____

(1 set per quarter; %R and RPD limits varies)

[FG-ORG, p. 69-70]

MS/MSD were not collected.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

4.10 Did initial and continuing calibrations meet frequency and QC criteria?yes _____ no _____

[FG-ORG, p. 55-58]

Not reviewed

SAMPLE RESULT VERIFICATION

4.11 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? yes _____ no _____

Not reviewed

ANALYTE RESULTS WITH DATA QUALIFIERS

4.12 Summarize analyte results with data qualifiers. List pertinent information on qualified-data worksheet: CAFB-F sample had qualifier J for aldrin, beta-BHC, delta-BHC, endosulfan I, endosulfan sulfate, heptachlor, and heptachlor epoxide.

CAFB-F sample also had qualifier COL for endosulfan, endosulfan sulfate, and heptachlor epoxide.

J - estimated result, result less than reported limit.
COL - more than 40% difference between primary and confirmation column results. The lower of the two results is reported.

4.13 Additional comments: None.

SECTION 7.0: APPENDIX-IX, METALS (TOTAL)-- METHODS SW3005/SW6010B (ALUMINUM, BARIUM, BERYLLIUM, CALCIUM, COBALT, COPPER, IRON, MAGNESIUM, MANGANESE, MOLYBDENUM, NICKEL, POTASSIUM, SODIUM, TIN, VANADIUM, AND ZINC), SW3005/SW6020 (ANTIMONY, ARSENIC, CADMIUM, CHROMIUM, LEAD, SELENIUM, SILVER, AND THALLIUM), AND SW3020/SW7470A (MERCURY).

Name of reviewer(s) and review date: Fredrick E. Gebhardt 26NOV01

LEVEL I AND II -- Data Validation

HOLDING TIMES

5.1 Were project-required analytical holding times met? yes √ no ____

(180-day limit from sample date to analysis, except mercury-28 days)
[FG-INORG, p. 6-7]

Mercury sample date: 21AUG01 analysis date limit: 30SEP01
All rest sample date: 21AUG01 analysis date limit: 17FEB02

Mercury was analyzed by 13SEP01 and rest of the samples were analyzed by 13SEP01 and met required holding times.

PROJECT REPORTING LIMIT (PRL)

5.2 Did sample results meet project reporting limits? yes √ no ____

PRL's were not provided in SAP. Severn Trent reporting limits were not raised for any of the samples.

FIELD DUPLICATES

5.3 Did field duplicate results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set for each sampling period; RPD < 30 %)

[FG-INORG, p. 35]

Field duplicate was not collected for this sampling round.

EQUIPMENT BLANKS

5.4 Did equipment blank results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set for non-dedicated pump; analytes < 3 x RL)

[FG-INORG, p. 16-18]

N/A - See Comment 2.8.

DUPLICATE CONTROL SAMPLES (DCSs)

5.5 Did DCS results meet frequency and QC acceptance criteria? yes √ no ____

(1 DCS per quarter; % R and RPD within 3 SD of historical results of lab performance)

[FG-INORG, p. 25-26]

All DCS results met QC acceptance criteria.

LABORATORY METHOD BLANKS

5.6 Did method blank results meet frequency and QC acceptance criteria? yes √ no ____

(1 method blank per batch; analyte concentration ≤ RL except for common lab contaminants ≤ 2 times RL)

[FG-INORG, p. 16-18]

All method blank results were ND or below reporting limit and met QC acceptance criteria.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

5.7 Did MS/MSD results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set per quarter; %R and RPD varies)

[FG-INORG, p. 27-29]

MS/MSD were not collected.

LEVEL II -- Data Validation

CALIBRATION

5.8 Did initial (ICV) and continuing (CCV) calibrations meet QC acceptance criteria? **[FG-INORG, p.** 8-15] yes _____ no _____

Not reviewed.

INTERELEMENT CHECK SAMPLES (method SW6010 only)

5.9 Did interelement check results meet frequency and QC criteria? yes _____ no _____

(within 20% of known value)
[FG-INORG, p. 19-21]

Not reviewed.

ANALYTICAL SPIKE RECOVERY (all methods except SW6010 and mercury)

5.10 Did analytical spike results meet frequency and QC acceptance criteria? yes _____ no _____

(every sample; %R within 80-120% except when sample results are ND, the %R within 40-120%)
[FG-INORG, p. 27-29]

Not reviewed.

SAMPLE RESULT VERIFICATION

5.11 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? **[FG-INORG, p. 36]** yes _____ no _____

Not reviewed.

LEVEL I AND II -- Data Validation

ANALYTE RESULTS WITH DATA QUALIFIERS

5.12 Summarize analyte results with data qualifiers. List pertinent information on qualified-data worksheet: CAFB-F sample had quilifier B for colbalt, copper, nickel, molybdenum, mercury, arsenic , and cadium.

5.13 Additional comments: None.

SECTION 8.0: SULFATE--METHOD MCAWW300.0A

Name of reviewer(s) and review date: Fredrick E. Gebhardt 26NOV01

LEVEL I AND II -- Data Validation

HOLDING TIMES

6.1 Were project-required analytical holding times met? yes √ no ____

(28-day limit from sample date to analysis date for water samples)
[FG-INORG, p. 6-7]

sample date: 21AUG01 analysis date limit: 19SEP01

All samples were analyzed by 13SEP01 and met required holding times.

PROJECT REPORTING LIMIT

6.2 Did sample results meet project reporting limits? yes ____ no √

PRL's were not provided in SAP. Reporting limits were raised for all samples due to high analyte levels.

FIELD DUPLICATES

6.3 Did field duplicate results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set per each sampling period; RPD < 30%)
[FG-INORG, p. 35]

Field duplicate was not collected for this sampling round.

EQUIPMENT BLANKS

6.4 Did equipment blank results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set for non-dedicated pump; target compound concentration ≤ 3 times RL)
[FG-INORG, p. 16-18]

N/A - See Comment 2.8.

DUPLICATE CONTROL SAMPLES (DCSs)

6.5 Did DCS results meet frequency and QC acceptance criteria? yes √ no ____

(1 DCS per batch; %R and RPD within 3 SD of historical results of lab performance)

[FG-INORG, p. 25-26]

All DCS results met QC acceptance criteria.

LABORATORY METHOD BLANKS

6.6 Did method blank results meet frequency and QC acceptance criteria? yes √ no ____

(1 method blank per batch; concentration ≤ 2 times RL)

[FG-INORG, p. 16-18]

Laboratory method blank result was ND and met QC acceptance criteria

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

6.7 Did MS/MSD results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set per quarter; %R and RPD varies)

[FG-INORG, p. 27-29]

The MS/MSD were not collected.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

6.8 Did initial and continuing calibrations meet frequency and QC criteria? yes ____ no ____

(%R within 90-110%)

[FG-INORG, p. 8-15]

Not reviewed

SAMPLE RESULT VERIFICATION

6.9 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? **[FG-INORG, p. 36]** yes ____ no ____

Not reviewed

6.10 Additional comments: All samples had qualifier Q (reporting limit is elevated due to high analyte levels).

SECTION 9.0: NITRATE AND NITRITE--METHOD MCAWW353.2/354.1

Name of reviewer(s) and review date: Fredrick E. Gebhardt 26NOV01

LEVEL I AND II -- Data Validation

HOLDING TIMES

7.1 Were project-required analytical holding times met? yes ____ no √

(48-hour limit from sample date to analysis date for Nitrite -MCAWW354.1)
(28-day limit from sample date to analysis date for Nitrate -MCAWW353.2)

[FG-INORG, p. 6-7]

Nitrite sample date: 21AUG01 analysis date limit: 23AUG01
Nitrate sample date: 21AUG01 analysis date limit: 19SEP01

Nitrite samples were analyzed by 29AUG01 and nitrate samples were analyzed by 24AUG01. Nitrite sample missed holding times due to shipping, nitrate sample met holding time.

PROJECT REPORTING LIMIT

7.2 Did sample results meet project reporting limits? yes √ no ____

The reporting limits were not raised for any of the samples and met project reporting limits.

FIELD DUPLICATES

7.3 Did field duplicate results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set per each sampling period; RPD < 30%)

[FG-INORG, p. 35]

Field duplicate sample was not collected for this sampling round.

EQUIPMENT BLANKS

7.4 Did equipment blank results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set for non-dedicated pump; target compound concentration < 3 times RL)

[FG-INORG, p. 16-18]

N/A - See Comment 2.8.

DUPLICATE CONTROL SAMPLES (DCSs)

7.5 Did DCS results meet frequency and QC acceptance criteria? yes √ no ____

(1 DCS per batch; %R and RPD within 3 SD of historical results of lab performance)

[FG-INORG, p. 25-26]

All DCS results met QC acceptance criteria.

LABORATORY METHOD BLANKS

7.6 Did method blank results meet frequency and QC acceptance criteria? yes √ no ____

(1 method blank per batch; concentration ≤ 2 times RL)

[FG-INORG, p. 16-18]

Laboratory method blank results were ND and met QC acceptance criteria.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

7.7 Did MS/MSD results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set per quarter; %R and RPD varies)

[FG-INORG, p. 27-29]

MS/MSD were not collected.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

7.8 Did initial and continuing calibrations meet frequency and QC criteria? yes ____ no ____

(%R within 90-110%)

[FG-INORG, p. 8-15]

Not reviewed

SAMPLE RESULT VERIFICATION

7.9 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? **[FG-INORG, p. 36]** yes ____ no ____

Not reviewed

7.10 Additional comments: None.

SECTION 10.0: SULFIDE--METHOD SW9030B/9034

Name of reviewer(s) and review date: Fredrick E. Gebhardt 26NOV01

LEVEL I AND II -- Data Validation

HOLDING TIMES

8.1 Were project-required analytical holding times met? yes √ no ____

(7-day limit from sample date to analysis date for water samples)
[FG-INORG, p. 6-7]

sample date: 21AUG01 analysis date limit: 28AUG01

All samples were analyzed by 28AUG01 and met required holding times.

PROJECT REPORTING LIMIT

8.2 Did sample results meet project reporting limits? yes √ no ____
(Quanterra RL: 0.05 mg/L)

PRL's were not provided in SAP. Reporting limits were not raised for any of the samples.

FIELD DUPLICATES

8.3 Did field duplicate results meet frequency and QC acceptance criteria?yes ____ no ____
(1 set per each sampling period; RPD ≤ 30%)
[FG-INORG, p. 35]

Field duplicate sample was not collected for this sampling round.

EQUIPMENT BLANKS

8.4 Did equipment blank results meet frequency and QC acceptance criteria? yes ____ no ____
(1 set for non-dedicated pump; target compound concentration ≤ 3 times RL)
[FG-INORG, p. 16-18]

N/A - See Comment 2.8.

DUPLICATE CONTROL SAMPLES (DCSs)

8.5 Did DCS results meet frequency and QC acceptance criteria? yes √ no ____

(1 DCS per batch; %R and RPD within 3 SD of historical results of lab performance)

[FG-INORG, p. 25-26]

All DCS results met QC acceptance criteria.

LABORATORY METHOD BLANKS

8.6 Did method blank results meet frequency and QC acceptance criteria? yes √ no ____

(1 method blank per batch; concentration ≤ 2 times RL)

[FG-INORG, p. 16-18]

Laboratory method blank result was ND and met QC acceptance criteria.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

8.7 Did MS/MSD results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set per quarter; %R and RPD varies)

[FG-INORG, p. 27-29]

MS/MSD were not collected.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

8.8 Did initial and continuing calibrations meet frequency and QC criteria? yes ____ no ____

(%R within 90-110%)

[FG-INORG, p. 8-15]

Not reviewed

SAMPLE RESULT VERIFICATION

8.9 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? **[FG-INORG, p. 36]** yes ____ no ____

Not reviewed

8.10 Additional comments: None.

SECTION 11.0: TOTAL DISSOLVED SOLIDS (TDS)-- METHOD MCAWW160.1

Name of reviewer(s) and review date: Fredrick E. Gebhardt 26NOV01

LEVEL I AND II -- Data Validation

HOLDING TIMES

9.1 Were project-required analytical holding times met? yes √ no ____

(7-day limit from sample date to analysis date for water samples)

[FG-INORG, p. 6-7]

sample date: 21AUG01 analysis date limit: 28AUG01

Samples were analyzed by 27AUG01 and met required holding times.

PROJECT REPORTING LIMIT (PRL)

9.2 Did sample results meet project reporting limits? yes √ no ____

(Quanterra RL: 10 mg/L)

PRL was not provided in SAP. Reporting limit was not raised on any of the samples.

FIELD DUPLICATES

9.3 Did field duplicate results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set per each sampling period; RPD <30 %)

[FG-INORG, p. 35]

Field duplicate sample was not collected for this sampling round.

EQUIPMENT BLANKS

9.4 Did equipment blank results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set for non-dedicated pump; target compound concentration ≤ 3XRL)

[FG-INORG, p. 16-18]

N/A - See Comment 2.8.

DUPLICATE CONTROL SAMPLES (DCSs)

9.5 Did DCS results meet frequency and QC acceptance criteria? yes √ no ____

(1 DCS per batch; %R 86-106% and RPD ≤ 10 %)

[FG-INORG, p. 25-26]

All DCS results were within acceptance criteria.

LABORATORY METHOD BLANK

9.6 Did method blank results meet frequency and QC acceptance criteria? yes √ no ____

(1 method blank per batch; concentration ≤ 2 X RL)

[FG-INORG, p. 16-18]

Laboratory method blank result was ND and met QC acceptance criteria.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

9.7 Did MS/MSD results meet frequency and QC acceptance criteria? yes ____ no ____

(1 set per quarter; %R 86-106% and RPD ≤ 10%)

[FG-INORG, p. 27-29]

MS/MSD results were not collected.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

9.8 Did initial and continuing calibrations meet frequency and QC criteria? yes ____ no ____

(%R within 90-110%)

[FG-INORG, p. 8-15]

Not reviewed.

SAMPLE RESULT VERIFICATION

9.9 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? **[FG-INORG, p. 36]** yes ____ no ____

Not reviewed.

9.10 Additional comments: None.

Appendix A -- Laboratory Data Validation Checklist

Instruction Notes for the Data Validation Checklist

This data validation checklist will be used when validating the chemical analytical results. Data validation is a systematic and independent verification of data quality and consists of checking, verifying, evaluating, and qualifying the chemical analytical results.

Two different levels of data validation are used with level I being not as detailed or as rigorous as level II. Level I data validation includes: (1) checking holding times limits, (2) evaluating the results of field and laboratory quality-control (QC) samples such as field replicates, matrix spikes, surrogate samples, and duplicate control samples, and (3) checking that contamination during sample processing has not occurred in QC blanks such as equipment, method, ambient, and trip blanks. Most of the information and data used to conduct a level I data validation is contained in the summary-data reports prepared by the reporting laboratory. Level II data validation includes all the level I guidelines plus using the raw-data reports prepared by the reporting laboratory to: (1) check that the laboratory instruments have been properly tuned and calibrated, and (2) verify that selected sample results do not have any omissions, problems, discrepancies, transcription errors, and reduction (dilution, conversion) errors.

Field samples (environmental and QC) are processed and analyzed by the reporting laboratory in specific groups of samples called sample projects (also called sample cases). A sample project usually consists of 20 or fewer samples that are collected from one or more sampling locations (monitoring well) in a given sampling period. Numerous laboratory QC samples also are analyzed with the field samples for each sample project.

This data validation checklist is designed to be used when validating the analytical results for a given sample project and it has a multi-level organization. The first part of the checklist contains general information (section 1.0) about the scope (who, when, how, and what) of the data validation and data reports and completeness (section 2.0) for each sample project. Sections 1.0 and 2.0 will be completed and included with all data validation checklists. The data validation checklist also contains numerous supplemental sections which are listed at the bottom of the first page of this document. These supplemental checklist sections are used for specific analytical methods and will be marked with a checkmark (√) when they are completed for a given sample project. Specific project-required frequency and QC acceptance criteria, and pertinent reference page numbers are listed with most of the checklist items. The major data-validation references are the USEPA guidance documents (USEPA 1994).

Checklist Abbreviations, Acronyms, and Notes

Abbreviations:

Al	aluminum
Ag	silver
As	arsenic
CAP	Chromic Acid Pit
CCV	continuing calibration verification
Cr	chromium
DCS	duplicate control sample
Ba	barium
Be	beryllium
Ca	calcium
Cd	cadmium
Cl	chloride
Co	cobalt
Conc.	concentration
Cu	copper
Diss.	dissolved
DRO	diesel range organics with GC/FID analysis C10-C28
DU	duplicate environmental sample
EB	equipment blank
Fe	iron
FG-INORG	Functional guidelines (EPA) for evaluating inorganic analyses
FG-ORG	Functional guidelines (EPA) for evaluating organic analyses
Fl	fluoride
GFAA	graphite furnace atomic absorption
Hg	mercury
ICP	inductively coupled plasma
ID	identification
IS	internal standards
J	estimated value qualifier
K	potassium
MCAWW	"Methods for Chemical Analysis of Water and Wastes"', EPA-600/4-79-020, March 1983 subsequent revisions.
Mg	magnesium
mg/L	milligrams per liter
Mn	manganese
Mo	molybdenum
MS/MSD	matrix spike/matrix spike duplicate

Checklist Abbreviations, Acronyms, and Notes -- *continued*

Abbreviations:

MW	monitoring well
Na	sodium
Ni	nickel
NO_2	nitrate
NO_3	nitrite
PAC	Chromic Acid Pit duplicate sample identification
Pb	lead
PO_4	orthophosphate
PRL	project reporting limit
QC	quality control
RCLs	Recovery Control Limits
RL	reporting limits
RMAL	Rocky Mountain Analytical Laboratory
RPD	relative percent difference
SA	environmental sample
SAP	Sampling and Analysis Plan
Sb	antimony
SCS	single control sample
Se	selenium
Sn	tin
SO_4	sulfate
SVOC	semivolatile organic compounds
TB	trip blank
TDS	total dissolved solids
TIC	tentatively identified compound
Tl	thallium
TOC	total organic carbon
Tot.	total
TOX	total organic halogen
TPH	total petroleum hydrocarbons
TSS	total suspended solids
USEPA	United States Environmental Protection Agency
USGS/WRD	United States Geological Survey, Water Resources Division
V	vanadium
VOC	volatile organic compounds
Zn	zinc

Checklist Abbreviations, Acronyms, and Notes -- *continued*

Abbreviations:

µg/L	microgram per liter
<	less than
>	greater than
%	percent
%R	percent recovery

USEPA, 1994, USEPA Contract laboratory program national functional guidelines for organic data review, February, 1994, Publication 9240.1-05, Document number PB94-963501, 124 p.

NOTE: this reference is abbreviated FG-ORG in this checklist.

USEPA, 1994, USEPA contract laboratory program national functional guidelines for inorganic data review, February, 1994, Publication 9240.1-05-01, Document number PB94-963502, 42 p.

NOTE: this reference is abbreviated FG-INORG in this checklist.

USGS, 1992, Laboratory data validation checklist: Wyoming District, U.S. Geological Survey checklist prepared for the U.S. Air Force, multiple pages.

COPY FOR YOUR INFORMATION

CONTRACT LABORATORY DATA-REVIEW WORKSHEET

1.0 GENERAL INFORMATION Laboratory Lot Number: DIH240209

Data reviewer: Richard Daddow Review date: 10/2/01

District, Project, & Account #: New Mexico Cannon AFB 4635-36004

Sample collection date: 8/21-22/01 Sample matrix/no.: water

No. of sample types in lot: Environmental 9 Trip blank 2 Equip. blank ____

MS/MSD ____ Other: ____

2.0 INVOICE STATUS FOR LOT: OK Invoice copy attached X

3.0 DATA REPORTS and FILES

Date of Lab analytical report: 9/21/01 Number of copies: bound 1 unbound 2

No. of volumes of raw-data report: ____ No. of CD copies of raw-data report: 1

Raw-data report reviewed? Yes ____ No X Electronic data files on CD? Yes X No ____

EDD file format: NWIS X STL standard ____ ERPIMS ____ DODEC ____

Comments—Data Reports ____

4.0 SAMPLE ANALYSES *(Page numbers listed in worksheet refer to lab analytical report)*

4.1 Were accelerated turn-around times (TATs) requested for analyses? Yes ____ No X

If yes, list TAT period and if completed: ____

4.2 Were analyses on chain-of-custody (COC) form performed by lab? YES X **NO** ____

If **no**, list missing or cancelled analyses and reason for non-performance: ____

Some samples collected on 8/21/01 and not received at lab until 8/24/01 -

4.3 Were the samples properly preserved, labeled, no lab log-in problems, and(or) at appropriate temperature (<6 deg. C) upon receipt by the laboratory: Yes ____ No X

If **no**, list sample/lab IDs, and associated problems with when delivered at laboratory:

~~Sa~~ Trip blank was documented CAFB-S on COC and CAFB-S-TB on sample container. Lab logged in-sample ID of CAFB-S-TB (p. 2 and 107)

Laboratory Lot No: D1H240209

4.4 Were preparation (extraction) and(or) analysis holding times met? Yes ____ No X

If **no**, list analytical methods and sample/lab IDs for samples that exceeded holding-time limits:

Sample CAFB-F (-002) was received outside holding time for method 353.2 (NO_3) and 3~~54.1~~ (NO_2) ~~and~~ 354.1 (NO_3) analyses - UGR project staff were contacted by lab and instructed to proceed w/analysis.

4.5 Did surrogate recoveries meet QC acceptance criteria? Yes ____ No X NA ____

If **no**, list methods, surrogates, associated sample/lab IDs, lab report page #s: ____

8081A (appendix IX) 1 surrogate sample: CAFB-F (-007) p. 42,

4.6 Were dilution factors greater than 1 for ***organic*** analyses? Yes ____ No X NA ____

If **yes**, list analytical method, lab/sample IDs, and reason for raised dilution factors: dilution ____ high-analyte levels ____ matrix interferences ____ other ____

4.7 Were dilution factors greater than 1 for **inorganic** analyses? Yes X No ____ NA ____

If **yes**, list analytical method, lab/sample IDs, and reason for raised dilution factors: dilution ____ high-analyte levels X matrix interferences ____ other limited sample volume

9020B (TOX) sample: CAFB-T (-001) p. 46; CAFB-B (-002) p. 47; CAFB-BB (-003) (p. 48); CAFB-U (-004) p. 49; CAFB-S (-005) p. 50; CAFB-C (-008) p. 52; CAFB-D (-009) (p. 53); CAFB-Q (-010) p. 54. 300 (SO_4) CAFB-F (-007) p. 51.

4.8 Additional comments about sample analyses: ____

Laboratory Lot No: 01H240209

5.0 QUALITY CONTROL (QC) ANALYSES and RESULTS

5.1 Did lab control samples (LCS/LSCD) meet percent recoveries (%R) criteria? Yes___ No___

If **no**, list method, analytes, LCS/LCSD, and report page #s:

5.2 Were any target analytes detected in the **Laboratory Method Blanks**? Yes X No___

If **yes**, list method, analytes, report page #s:

8260B 2 analytes (p. 60) (p. 61)
6020 Cr, Pb (p. 78-79)
9020B (TOX) p. 96, 9060 (TOC) p. 96

5.3 Did the **MS/MSD** results meet %R or RPD acceptance criteria? Yes___ No X NA___

Note: matrix spike and matrix spike duplicate (MS/MSD) data are used to evaluate the effect of sample matrix on the analytical process and should be only used in conjunction with other available lab QC data. In some cases, MS samples not directly associated with this lot may be used by the laboratory.

List analytical method and if MS samples are associated with this lot.

If did not meet acceptance criteria also list analytes; MS, MSD or RPD; and lab report page #:

8260B, 6010B	associated MS lot # yes___	no X
7470A (Hg) RPD (p. 80)	associated MS lot # yes___	no X
~~6010B Ag~~ 6020 Ag MS/MSD (p. 82)	associated MS lot # yes X	no___
300 (SO_4), 9020B (TOX), 9060 (TOC	associated MS lot # yes___	no X
314 (perchlorate), 354.1 (NO_2)	associated MS lot # yes X	no___
	associated MS lot # yes___	no___

No MS results reported for method(s): 8081A, 8082

5.4 Additional comments about QC results:

Laboratory Lot No: 01N240209

6.0 ANALYTICAL METHODS USED in this LABORATORY LOT NUMBER

X VOCs by GC/MS--method 8260B app. IX *[water (W) or solids (S) analysis holding-time (HT) of 14 days]*

____ Gasoline Range Organics (GRO) + BTEX--method 8015M-GRO *[W and S: analysis HT 14 days]*

____ Diesel Range Organics-method 8015M-DRO *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*

X Pesticides by GC--method 8081A app. IX *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*

X PCBs by GC--method 8082 *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

____ Pesticides by GC--method 8141A *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*

____ Herbicides by GC--method 8151A *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

____ SVOCs by GC/MS--method 8270C *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

____ Dioxins and Furans--methods 8280 or 8290 *[W and S: prep HT 30 days; analysis HT 45 days]*

____ PAHs by HPLC method 8310 *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

____ Explosives by HPLC method 8330 *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

____ Hexane extractable materials (HEM and SGT-HEM)--method 1664 *[W: analysis HT 28 days]*

X Total organic carbon (TOC)--methods 415.1 or 9060 *[W: analysis HT 28 days]*

____ Dissolved organic carbon (DOC)--methods 415.1 or 9060 *[W: analysis HT 28 days]*

X Total organic halides (TOX)--method 9020 *[W: analysis HT 28 days]*

X Metals by ICP--method 6010B/200.7 Dissolved _____ Total X *[W and S: analysis HT 180 days]*

X Metals by ICP/MS--method 6020/200.8 Dissolved _____ Total X *[W and S: analysis HT 180 days]*

____ Metals by GFAA methods *[W and S: analysis HT 180 days]* Methods:Sb-7041, As-7060, Cd-7131 Cr-7191, Pb-7421, Se-7740, Tl-7841 List GFAA metals: _____

____ Hexavalent chromium--method 7196 *[W: analysis HT **24-48 hours**]*

____ Mercury by CVAA--method 7470A (W) and 7471A (S) *[W and S: analysis HT 28 days]*

X Inorganic anions--method 300 *[W: analysis HT **48 hours**- NO_2, NO_3, ortho-P; HT 28 days--Br,Cl ,F, SO_4]*

X Total dissolved solids (TDS)--method 160.1 and(or) TSS--method 160.2 *[W: analysis HT 7 days]*

____ Total alkalinity--method 310.1 *[W: analysis HT 14 days]*

____ Nitrogen, ammonia--method 350.1 *[W: analysis HT 28 days]*

____ Nitrogen, TKN--method 351.2 *[W: analysis HT 28 days]*

X Nitrogen, nitrate + nitrite--method 353.2 *[W: analysis HT 28 days]* NO_3 or NO_2 only *[HT **48 hours**]*

X Nitrogen, nitrite--method 354.1 *[W: analysis HT **48 hours**]*

____ Total phosphorus--method 365.3 *[W: analysis HT 28 days]*

____ Cyanide, total and amenable--methods 9010B or 9012A *[W and S: analysis HT 14 days]*

X Other analyses: 9030B Sulfider, 914 perchlorate

QC DATA ASSOCIATION SUMMARY

D1H240209

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	GW	SW846 9060		1241268	1241204
	GW	SW846 9020B		1255274	1250240
	GW	SW846 8260B		1248393	1248207
	GW	EPA 314.0		1262183	1262060
002	GW	SW846 9060		1241268	1241204
	GW	SW846 9020B		1255274	1250240
	GW	SW846 8260B		1248393	1248207
	GW	EPA 314.0		1262183	1262060
003	GW	SW846 9060		1241268	1241204
	GW	SW846 9020B		1255274	1250240
	GW	SW846 8260B		1248393	1248207
	GW	EPA 314.0		1262183	1262060
004	GW	SW846 9060		1253208	1253070
	GW	SW846 9020B		1255274	1250240
	GW	SW846 8260B		1248393	1248207
	GW	EPA 314.0		1262183	1262060
005	GW	SW846 9060		1253208	1253070
	GW	SW846 9020B		1255274	1250240
	GW	SW846 8260B		1248393	1248207
	GW	EPA 314.0		1262183	1262060
006	GW	SW846 8260B		1248393	1248207
007	GW	MCAWW 160.1		1240202	1242076
	GW	MCAWW 353.2		1257177	
	GW	MCAWW 354.1		1242278	1242122
	GW	MCAWW 300.0A		1256303	1256191
	GW	SW846 6020		1242494	1242262
	GW	SW846 7470A		1240384	1240196
	GW	SW846 8082		1240171	
	GW	SW846 8081A		1240173	
	GW	SW846 8260B		1248393	1248207
	GW	SW846 6010B		1240380	1240183
	GW	SW846 9030B/9034		1241268	
	GW	EPA 314.0		1262183	1262060
008	GW	SW846 9060		1253208	1253070
	GW	SW846 9020B		1255274	1250240
	GW	SW846 8260B		1248393	1248207
	GW	EPA 314.0		1262183	1262060

QC DATA ASSOCIATION SUMMARY

D1H240209

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
009	GW	SW846 9060		1253208	1253070
	GW	SW846 9020B		1255274	1250240
	GW	SW846 8260B		1248393	1248207
	GW	EPA 314.0		1262183	1262060
010	GW	SW846 9060		1253208	1253070
	GW	SW846 9020B		1255274	1250240
	GW	SW846 8260B		1248393	1248207
	GW	EPA 314.0		1262183	1262060
011	GW	SW846 8260B		1248393	1248207

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D1H240209 Work Order #...: EJ3HK1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: D1I050000-393 EJ3HK1AD-LCSD
Prep Date.....: 08/31/01 Analysis Date..: 08/31/01
Prep Batch #...: 1248393 Analysis Time..: 11:43
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	107	(79 - 119)			SW846 8260B
	106	(79 - 119)	0.46	(0-20)	SW846 8260B
Benzene	94	(79 - 119)			SW846 8260B
	94	(79 - 119)	0.12	(0-20)	SW846 8260B
Chlorobenzene	93	(76 - 116)			SW846 8260B
	94	(76 - 116)	1.5	(0-20)	SW846 8260B
Toluene	92	(75 - 122)			SW846 8260B
	93	(75 - 122)	0.66	(0-20)	SW846 8260B
Trichloroethene	99	(81 - 121)			SW846 8260B
	100	(81 - 121)	0.67	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(80 - 120)
	99	(80 - 120)
1,2-Dichloroethane-d4	88	(72 - 127)
	91	(72 - 127)
4-Bromofluorobenzene	91	(79 - 119)
	92	(79 - 119)
Toluene-d8	101	(79 - 119)
	101	(79 - 119)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: D1H240209 Work Order #...: EJ3HK1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: D1I050000-393 EJ3HK1AD-LCSD
Prep Date.....: 08/31/01 Analysis Date..: 08/31/01
Prep Batch #...: 1248393 Analysis Time..: 11:43
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethene	10.0	10.7	ug/L	107		SW846 8260B
	10.0	10.6	ug/L	106	0.46	SW846 8260B
Benzene	10.0	9.40	ug/L	94		SW846 8260B
	10.0	9.39	ug/L	94	0.12	SW846 8260B
Chlorobenzene	10.0	9.29	ug/L	93		SW846 8260B
	10.0	9.43	ug/L	94	1.5	SW846 8260B
Toluene	10.0	9.22	ug/L	92		SW846 8260B
	10.0	9.28	ug/L	93	0.66	SW846 8260B
Trichloroethene	10.0	9.94	ug/L	99		SW846 8260B
	10.0	10.0	ug/L	100	0.67	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(80 - 120)
	99	(80 - 120)
1,2-Dichloroethane-d4	88	(72 - 127)
	91	(72 - 127)
4-Bromofluorobenzene	91	(79 - 119)
	92	(79 - 119)
Toluene-d8	101	(79 - 119)
	101	(79 - 119)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: D1H240209 Work Order #...: EJ3HK1AA Matrix.....: WATER
MB Lot-Sample #: D1I050000-393

Prep Date.....: 08/31/01 Analysis Time..: 12:31

Analysis Date..: 08/31/01 Prep Batch #...: 1248393
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	10	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
Carbon disulfide	ND	1.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	2.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	1.0	ug/L	SW846 8260B
2-Butanone (MEK)	**3.3 J**	**5.0**	**ug/L**	**SW846 8260B**
Acetonitrile	ND	20	ug/L	SW846 8260B
Acrolein	ND	20	ug/L	SW846 8260B
Acrylonitrile	ND	20	ug/L	SW846 8260B
Chloroprene	ND	1.0	ug/L	SW846 8260B
Allyl chloride	ND	2.0	ug/L	SW846 8260B

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: D1H240209 Work Order #...: EJ3HK1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Dibromomethane	ND	1.0	ug/L	SW846 8260B
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	2.0	ug/L	SW846 8260B
1,4-Dioxane	**21 J**	**200**	**ug/L**	**SW846 8260B**
Ethyl methacrylate	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B
Iodomethane	ND	1.0	ug/L	SW846 8260B
Isobutyl alcohol	ND	50	ug/L	SW846 8260B
Methacrylonitrile	ND	10	ug/L	SW846 8260B
Methyl methacrylate	ND	1.0	ug/L	SW846 8260B
Propionitrile	ND	4.0	ug/L	SW846 8260B
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
1,2,3-Trichloropropane	ND	1.0	ug/L	SW846 8260B
Vinyl acetate	ND	2.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	SW846 8260B
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(80 - 120)
1,2-Dichloroethane-d4	90	(72 - 127)
4-Bromofluorobenzene	91	(79 - 119)
Toluene-d8	100	(79 - 119)

NOTE(S):

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

J Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

Method Blank Report

GC/MS Volatiles

Lot-Sample #: D1I050000-393 B **Work Order #:** EJ3HK1AA **Matrix:** WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/L

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D1H240209 Work Order #...: EJKMK1AC-MS Matrix.....: WATER
MS Lot-Sample #: D1H250105-002 EJKMK1AD-MSD
Date Sampled...: 08/21/01 16:50 Date Received..: 08/24/01
Prep Date.....: 08/31/01 Analysis Date..: 08/31/01
Prep Batch #...: 1248393 Analysis Time..: 13:19
Dilution Factor: 50

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	98	(79 - 119)			SW846 8260B
	96	(79 - 119)	2.3	(0-20)	SW846 8260B
Benzene	87	(79 - 119)			SW846 8260B
	87	(79 - 119)	0.0	(0-20)	SW846 8260B
Chlorobenzene	86	(76 - 116)			SW846 8260B
	87	(76 - 116)	0.64	(0-20)	SW846 8260B
Toluene	84	(75 - 122)			SW846 8260B
	83	(75 - 122)	0.40	(0-20)	SW846 8260B
Trichloroethene	91	(81 - 121)			SW846 8260B
	90	(81 - 121)	0.66	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(80 - 120)
	105	(80 - 120)
1,2-Dichloroethane-d4	94	(72 - 127)
	99	(72 - 127)
4-Bromofluorobenzene	94	(79 - 119)
	97	(79 - 119)
Toluene-d8	102	(79 - 119)
	100	(79 - 119)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: D1H240209 Work Order #...: EJKMK1AC-MS Matrix.....: WATER
MS Lot-Sample #: D1H250105-002 EJKMK1AD-MSD
Date Sampled...: 08/21/01 16:50 Date Received..: 08/24/01
Prep Date.....: 08/31/01 Analysis Date..: 08/31/01
Prep Batch #...: 1248393 Analysis Time..: 13:19
Dilution Factor: 50

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethene	ND	500	489	ug/L	98		SW846 8260B
	ND	500	478	ug/L	96	2.3	SW846 8260B
Benzene	ND	500	434	ug/L	87		SW846 8260B
	ND	500	434	ug/L	87	0.0	SW846 8260B
Chlorobenzene	ND	500	431	ug/L	86		SW846 8260B
	ND	500	433	ug/L	87	0.64	SW846 8260B
Toluene	ND	500	418	ug/L	84		SW846 8260B
	ND	500	417	ug/L	83	0.40	SW846 8260B
Trichloroethene	160	500	612	ug/L	91		SW846 8260B
	160	500	608	ug/L	90	0.66	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(80 - 120)
	105	(80 - 120)
1,2-Dichloroethane-d4	94	(72 - 127)
	99	(72 - 127)
4-Bromofluorobenzene	94	(79 - 119)
	97	(79 - 119)
Toluene-d8	102	(79 - 119)
	100	(79 - 119)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: D1H240209 Work Order #...: EJMXP1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: D1H280000-173 EJMXP1AD-LCSD
Prep Date.....: 08/28/01 Analysis Date..: 09/06/01
Prep Batch #...: 1240173 Analysis Time..: 00:09
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
4,4'-DDT	**95**	**(68 - 147)**			**SW846 8081A**
	98	**(68 - 147)**	**3.4**	**(0-30)**	**SW846 8081A**
Aldrin	**86**	**(55 - 137)**			**SW846 8081A**
	87	**(55 - 137)**	**0.90**	**(0-30)**	**SW846 8081A**
Dieldrin	**92**	**(68 - 146)**			**SW846 8081A**
	95	**(68 - 146)**	**3.3**	**(0-30)**	**SW846 8081A**
Endrin	**91**	**(66 - 143)**			**SW846 8081A**
	94	**(66 - 143)**	**3.6**	**(0-30)**	**SW846 8081A**
gamma-BHC (Lindane)	**94**	**(68 - 142)**			**SW846 8081A**
	97	**(68 - 142)**	**3.5**	**(0-30)**	**SW846 8081A**
Heptachlor	**89**	**(59 - 143)**			**SW846 8081A**
	91	**(59 - 143)**	**2.1**	**(0-30)**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	81	(15 - 162)
	84	(15 - 162)
Tetrachloro-m-xylene	79	(49 - 133)
	80	(49 - 133)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: D1H240209 Work Order #...: EJMXP1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: D1H280000-173 EJMXP1AD-LCSD
Prep Date.....: 08/28/01 Analysis Date..: 09/06/01
Prep Batch #...: 1240173 Analysis Time..: 00:09
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
4,4'-DDT	0.500	0.475	ug/L	95		SW846 8081A
	0.500	0.492	ug/L	98	3.4	SW846 8081A
Aldrin	0.500	0.430	ug/L	86		SW846 8081A
	0.500	0.434	ug/L	87	0.90	SW846 8081A
Dieldrin	0.500	0.460	ug/L	92		SW846 8081A
	0.500	0.475	ug/L	95	3.3	SW846 8081A
Endrin	0.500	0.453	ug/L	91		SW846 8081A
	0.500	0.470	ug/L	94	3.6	SW846 8081A
gamma-BHC (Lindane)	0.500	0.468	ug/L	94		SW846 8081A
	0.500	0.485	ug/L	97	3.5	SW846 8081A
Heptachlor	0.500	0.445	ug/L	89		SW846 8081A
	0.500	0.454	ug/L	91	2.1	SW846 8081A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	81	(15 - 162)
	84	(15 - 162)
Tetrachloro-m-xylene	79	(49 - 133)
	80	(49 - 133)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: D1H240209 Work Order #...: EJMXP1AA Matrix.....: WATER
MB Lot-Sample #: D1H280000-173

Prep Date.....: 08/28/01 Analysis Time..: 23:40

Analysis Date..: 09/05/01 Prep Batch #...: 1240173
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Aldrin	ND	0.050	ug/L	SW846 8081A
alpha-BHC	ND	0.050	ug/L	SW846 8081A
beta-BHC	ND	0.050	ug/L	SW846 8081A
delta-BHC	ND	0.050	ug/L	SW846 8081A
gamma-BHC (Lindane)	ND	0.050	ug/L	SW846 8081A
alpha-Chlordane	ND	0.050	ug/L	SW846 8081A
gamma-Chlordane	ND	0.050	ug/L	SW846 8081A
4,4'-DDD	ND	0.050	ug/L	SW846 8081A
4,4'-DDE	ND	0.050	ug/L	SW846 8081A
4,4'-DDT	ND	0.050	ug/L	SW846 8081A
Diallate	ND	1.0	ug/L	SW846 8081A
Dieldrin	ND	0.050	ug/L	SW846 8081A
Endosulfan I	ND	0.050	ug/L	SW846 8081A
Endosulfan II	ND	0.050	ug/L	SW846 8081A
Endosulfan sulfate	ND	0.050	ug/L	SW846 8081A
Endrin	ND	0.050	ug/L	SW846 8081A
Endrin aldehyde	ND	0.050	ug/L	SW846 8081A
Endrin ketone	ND	0.050	ug/L	SW846 8081A
Heptachlor	ND	0.050	ug/L	SW846 8081A
Heptachlor epoxide	ND	0.050	ug/L	SW846 8081A
Isodrin	ND	0.10	ug/L	SW846 8081A
Kepone	ND	1.0	ug/L	SW846 8081A
Methoxychlor	ND	0.10	ug/L	SW846 8081A
Toxaphene	ND	2.0	ug/L	SW846 8081A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	81	(15 - 162)
Tetrachloro-m-xylene	78	(49 - 133)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: D1H240209 Work Order #...: EJMW41AC-LCS Matrix.....: WATER
LCS Lot-Sample#: D1H280000-171 EJMW41AD-LCSD
Prep Date.....: 08/28/01 Analysis Date..: 09/06/01
Prep Batch #...: 1240171 Analysis Time..: 11:23
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aroclor 1016	88	(73 - 123)			SW846 8082
	86	(73 - 123)	3.2	(0-20)	SW846 8082
Aroclor 1260	91	(77 - 120)			SW846 8082
	87	(77 - 120)	5.0	(0-20)	SW846 8082

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	81	(52 - 129)
	80	(52 - 129)
Tetrachloro-m-xylene	71	(54 - 113)
	67	(54 - 113)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: D1H240209 Work Order #...: EJMW41AC-LCS Matrix.....: WATER
LCS Lot-Sample#: D1H280000-171 EJMW41AD-LCSD
Prep Date.....: 08/28/01 Analysis Date..: 09/06/01
Prep Batch #...: 1240171 Analysis Time..: 11:23
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Aroclor 1016	2.00	1.77	ug/L	88		SW846 8082
	2.00	1.71	ug/L	86	3.2	SW846 8082
Aroclor 1260	2.00	1.82	ug/L	91		SW846 8082
	2.00	1.74	ug/L	87	5.0	SW846 8082

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	81	(52 - 129)
	80	(52 - 129)
Tetrachloro-m-xylene	71	(54 - 113)
	67	(54 - 113)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: D1H240209
MB Lot-Sample #: D1H280000-171
Work Order #...: EJMW41AA
Matrix.....: WATER
Prep Date.....: 08/28/01
Analysis Time..: 10:50
Analysis Date..: 09/06/01
Prep Batch #...: 1240171
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Aroclor 1016	ND	1.0	ug/L	SW846 8082
Aroclor 1221	ND	1.0	ug/L	SW846 8082
Aroclor 1232	ND	1.0	ug/L	SW846 8082
Aroclor 1242	ND	1.0	ug/L	SW846 8082
Aroclor 1248	ND	1.0	ug/L	SW846 8082
Aroclor 1254	ND	1.0	ug/L	SW846 8082
Aroclor 1260	ND	1.0	ug/L	SW846 8082

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	77	(52 - 129)
Tetrachloro-m-xylene	70	(54 - 113)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D1H240209 Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Aluminum	96	(89 - 109)			SW846 6010B	09/03-09/06/01	1240380
	100	(89 - 109)	3.5	(0-20)	SW846 6010B	09/03-09/06/01	1240380
		Dilution Factor: 1					
Barium	100	(92 - 115)			SW846 6010B	09/03-09/06/01	1240380
	102	(92 - 115)	1.4	(0-20)	SW846 6010B	09/03-09/06/01	1240380
		Dilution Factor: 1					
Beryllium	95	(91 - 117)			SW846 6010B	09/03-09/10/01	1240380
	95	(91 - 117)	0.31	(0-20)	SW846 6010B	09/03-09/10/01	1240380
		Dilution Factor: 1					
Calcium	96	(88 - 108)			SW846 6010B	09/03-09/06/01	1240380
	97	(88 - 108)	1.2	(0-20)	SW846 6010B	09/03-09/06/01	1240380
		Dilution Factor: 1					
Cobalt	96	(91 - 111)			SW846 6010B	09/03-09/10/01	1240380
	96	(91 - 111)	0.08	(0-20)	SW846 6010B	09/03-09/10/01	1240380
		Dilution Factor: 1					
Copper	98	(93 - 113)			SW846 6010B	09/03-09/06/01	1240380
	100	(93 - 113)	1.6	(0-20)	SW846 6010B	09/03-09/06/01	1240380
		Dilution Factor: 1					
Iron	98	(92 - 114)			SW846 6010B	09/03-09/06/01	1240380
	100	(92 - 114)	1.5	(0-20)	SW846 6010B	09/03-09/06/01	1240380
		Dilution Factor: 1					
Magnesium	98	(93 - 113)			SW846 6010B	09/03-09/06/01	1240380
	100	(93 - 113)	1.5	(0-20)	SW846 6010B	09/03-09/06/01	1240380
		Dilution Factor: 1					
Manganese	99	(89 - 114)			SW846 6010B	09/03-09/06/01	1240380
	100	(89 - 114)	1.5	(0-20)	SW846 6010B	09/03-09/06/01	1240380
		Dilution Factor: 1					
Nickel	99	(89 - 109)			SW846 6010B	09/03-09/06/01	1240380
	101	(89 - 109)	1.4	(0-20)	SW846 6010B	09/03-09/06/01	1240380
		Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D1H240209 Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Potassium	96	(87 - 110)			SW846 6010B	09/03-09/06/01	1240380
	96	(87 - 110)	0.89	(0-20)	SW846 6010B	09/03-09/06/01	1240380
		Dilution Factor: 1					
Sodium	95	(91 - 111)			SW846 6010B	09/03-09/06/01	1240380
	99	(91 - 111)	3.9	(0-20)	SW846 6010B	09/03-09/06/01	1240380
		Dilution Factor: 1					
Tin	90	(89 - 109)			SW846 6010B	09/03-09/10/01	1240380
	90	(89 - 109)	0.16	(0-20)	SW846 6010B	09/03-09/10/01	1240380
		Dilution Factor: 1					
Vanadium	100	(88 - 115)			SW846 6010B	09/03-09/06/01	1240380
	102	(88 - 115)	1.7	(0-20)	SW846 6010B	09/03-09/06/01	1240380
		Dilution Factor: 1					
Zinc	98	(83 - 111)			SW846 6010B	09/03-09/06/01	1240380
	99	(83 - 111)	1.1	(0-20)	SW846 6010B	09/03-09/06/01	1240380
		Dilution Factor: 1					
Molybdenum	102	(90 - 110)			SW846 6010B	09/03-09/10/01	1240380
	102	(90 - 110)	0.07	(0-20)	SW846 6010B	09/03-09/10/01	1240380
		Dilution Factor: 1					
Mercury	107	(84 - 114)			SW846 7470A	09/12-09/13/01	1240384
	108	(84 - 114)	0.57	(0-10)	SW846 7470A	09/12-09/13/01	1240384
		Dilution Factor: 1					
Antimony	96	(86 - 119)			SW846 6020	09/10-09/13/01	1242494
	98	(86 - 119)	2.1	(0-20)	SW846 6020	09/10-09/13/01	1242494
		Dilution Factor: 1					
Arsenic	95	(86 - 114)			SW846 6020	09/10-09/13/01	1242494
	94	(86 - 114)	1.2	(0-20)	SW846 6020	09/10-09/13/01	1242494
		Dilution Factor: 1					
Cadmium	95	(85 - 115)			SW846 6020	09/10-09/13/01	1242494
	95	(85 - 115)	0.53	(0-20)	SW846 6020	09/10-09/13/01	1242494
		Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D1H240209 Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Chromium	100	(85 - 115)			SW846 6020	09/10-09/13/01	1242494
	99	(85 - 115)	0.88	(0-20)	SW846 6020	09/10-09/13/01	1242494
		Dilution Factor: 1					
Lead	89	(85 - 115)			SW846 6020	09/10-09/13/01	1242494
	90	(85 - 115)	0.61	(0-20)	SW846 6020	09/10-09/13/01	1242494
		Dilution Factor: 1					
Selenium	96	(85 - 115)			SW846 6020	09/10-09/13/01	1242494
	95	(85 - 115)	0.80	(0-20)	SW846 6020	09/10-09/13/01	1242494
		Dilution Factor: 1					
Silver	95	(85 - 114)			SW846 6020	09/10-09/13/01	1242494
	95	(85 - 114)	0.13	(0-20)	SW846 6020	09/10-09/13/01	1242494
		Dilution Factor: 1					
Thallium	90	(85 - 115)			SW846 6020	09/10-09/13/01	1242494
	92	(85 - 115)	2.1	(0-20)	SW846 6020	09/10-09/13/01	1242494
		Dilution Factor: 1					

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D1H240209 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Aluminum	2000	1930	ug/L	96		SW846 6010B	09/03-09/06/01	1240380
	2000	2000	ug/L	100	3.5	SW846 6010B	09/03-09/06/01	1240380
			Dilution Factor: 1					
Barium	2000	2000	ug/L	100		SW846 6010B	09/03-09/06/01	1240380
	2000	2030	ug/L	102	1.4	SW846 6010B	09/03-09/06/01	1240380
			Dilution Factor: 1					
Beryllium	50.0	47.5	ug/L	95		SW846 6010B	09/03-09/10/01	1240380
	50.0	47.4	ug/L	95	0.31	SW846 6010B	09/03-09/10/01	1240380
			Dilution Factor: 1					
Calcium	50000	48100	ug/L	96		SW846 6010B	09/03-09/06/01	1240380
	50000	48700	ug/L	97	1.2	SW846 6010B	09/03-09/06/01	1240380
			Dilution Factor: 1					
Cobalt	500	482	ug/L	96		SW846 6010B	09/03-09/10/01	1240380
	500	482	ug/L	96	0.08	SW846 6010B	09/03-09/10/01	1240380
			Dilution Factor: 1					
Copper	250	246	ug/L	98		SW846 6010B	09/03-09/06/01	1240380
	250	250	ug/L	100	1.6	SW846 6010B	09/03-09/06/01	1240380
			Dilution Factor: 1					
Iron	1000	983	ug/L	98		SW846 6010B	09/03-09/06/01	1240380
	1000	998	ug/L	100	1.5	SW846 6010B	09/03-09/06/01	1240380
			Dilution Factor: 1					
Magnesium	50000	49100	ug/L	98		SW846 6010B	09/03-09/06/01	1240380
	50000	49800	ug/L	100	1.5	SW846 6010B	09/03-09/06/01	1240380
			Dilution Factor: 1					
Manganese	500	495	ug/L	99		SW846 6010B	09/03-09/06/01	1240380
	500	502	ug/L	100	1.5	SW846 6010B	09/03-09/06/01	1240380
			Dilution Factor: 1					
Nickel	500	496	ug/L	99		SW846 6010B	09/03-09/06/01	1240380
	500	503	ug/L	101	1.4	SW846 6010B	09/03-09/06/01	1240380
			Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D1H240209 Matrix.....: WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Potassium	50000	47800	ug/L	96		SW846 6010B	09/03-09/06/01	1240380
	50000	48200	ug/L	96	0.89	SW846 6010B	09/03-09/06/01	1240380
			Dilution Factor: 1					
Sodium	50000	47600	ug/L	95		SW846 6010B	09/03-09/06/01	1240380
	50000	49500	ug/L	99	3.9	SW846 6010B	09/03-09/06/01	1240380
			Dilution Factor: 1					
Tin	2000	1800	ug/L	90		SW846 6010B	09/03-09/10/01	1240380
	2000	1810	ug/L	90	0.16	SW846 6010B	09/03-09/10/01	1240380
			Dilution Factor: 1					
Vanadium	500	502	ug/L	100		SW846 6010B	09/03-09/06/01	1240380
	500	510	ug/L	102	1.7	SW846 6010B	09/03-09/06/01	1240380
			Dilution Factor: 1					
Zinc	500	489	ug/L	98		SW846 6010B	09/03-09/06/01	1240380
	500	494	ug/L	99	1.1	SW846 6010B	09/03-09/06/01	1240380
			Dilution Factor: 1					
Molybdenum	1000	1020	ug/L	102		SW846 6010B	09/03-09/10/01	1240380
	1000	1020	ug/L	102	0.07	SW846 6010B	09/03-09/10/01	1240380
			Dilution Factor: 1					
Mercury	5.00	5.37	ug/L	107		SW846 7470A	09/12-09/13/01	1240384
	5.00	5.40	ug/L	108	0.57	SW846 7470A	09/12-09/13/01	1240384
			Dilution Factor: 1					
Antimony	200	191	ug/L	96		SW846 6020	09/10-09/13/01	1242494
	200	195	ug/L	98	2.1	SW846 6020	09/10-09/13/01	1242494
			Dilution Factor: 1					
Arsenic	200	190	ug/L	95		SW846 6020	09/10-09/13/01	1242494
	200	187	ug/L	94	1.2	SW846 6020	09/10-09/13/01	1242494
			Dilution Factor: 1					
Cadmium	200	190	ug/L	95		SW846 6020	09/10-09/13/01	1242494
	200	189	ug/L	95	0.53	SW846 6020	09/10-09/13/01	1242494
			Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D1H240209 Matrix.....: WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chromium	200	200	ug/L	100		SW846 6020	09/10-09/13/01	1242494
	200	198	ug/L	99	0.88	SW846 6020	09/10-09/13/01	1242494
			Dilution Factor: 1					
Lead	200	179	ug/L	89		SW846 6020	09/10-09/13/01	1242494
	200	180	ug/L	90	0.61	SW846 6020	09/10-09/13/01	1242494
			Dilution Factor: 1					
Selenium	200	192	ug/L	96		SW846 6020	09/10-09/13/01	1242494
	200	190	ug/L	95	0.80	SW846 6020	09/10-09/13/01	1242494
			Dilution Factor: 1					
Silver	200	190	ug/L	95		SW846 6020	09/10-09/13/01	1242494
	200	191	ug/L	95	0.13	SW846 6020	09/10-09/13/01	1242494
			Dilution Factor: 1					
Thallium	200	180	ug/L	90		SW846 6020	09/10-09/13/01	1242494
	200	183	ug/L	92	2.1	SW846 6020	09/10-09/13/01	1242494
			Dilution Factor: 1					

NOTE(S):

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

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D1H240209 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: D1H280000-380 **Prep Batch #...:** 1240380						
Aluminum	ND	100	ug/L	SW846 6010B	09/03-09/06/01	EJN2G1AP
		Dilution Factor: 1				
		Analysis Time..: 17:32				
Barium	ND	10.0	ug/L	SW846 6010B	09/03-09/06/01	EJN2G1AD
		Dilution Factor: 1				
		Analysis Time..: 17:32				
Beryllium	ND	2.0	ug/L	SW846 6010B	09/03-09/10/01	EJN2G1AQ
		Dilution Factor: 1				
		Analysis Time..: 21:02				
Calcium	ND	200	ug/L	SW846 6010B	09/03-09/06/01	EJN2G1A3
		Dilution Factor: 1				
		Analysis Time..: 17:32				
Cobalt	ND	10.0	ug/L	SW846 6010B	09/03-09/10/01	EJN2G1A0
		Dilution Factor: 1				
		Analysis Time..: 21:02				
Copper	ND	20.0	ug/L	SW846 6010B	09/03-09/06/01	EJN2G1AR
		Dilution Factor: 1				
		Analysis Time..: 17:32				
Iron	ND	100	ug/L	SW846 6010B	09/03-09/06/01	EJN2G1AT
		Dilution Factor: 1				
		Analysis Time..: 17:32				
Magnesium	ND	200	ug/L	SW846 6010B	09/03-09/06/01	EJN2G1A4
		Dilution Factor: 1				
		Analysis Time..: 17:32				
Manganese	ND	10.0	ug/L	SW846 6010B	09/03-09/06/01	EJN2G1AU
		Dilution Factor: 1				
		Analysis Time..: 17:32				
Nickel	ND	40.0	ug/L	SW846 6010B	09/03-09/06/01	EJN2G1AV
		Dilution Factor: 1				
		Analysis Time..: 17:32				
Potassium	ND	3000	ug/L	SW846 6010B	09/03-09/06/01	EJN2G1A5
		Dilution Factor: 1				
		Analysis Time..: 17:32				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D1H240209 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Sodium	ND	5000	ug/L	SW846 6010B	09/03-09/06/01	EJN2G1A6
		Dilution Factor: 1				
		Analysis Time..: 17:32				
Tin	ND	100	ug/L	SW846 6010B	09/03-09/10/01	EJN2G1A1
		Dilution Factor: 1				
		Analysis Time..: 21:02				
Vanadium	ND	10.0	ug/L	SW846 6010B	09/03-09/06/01	EJN2G1AW
		Dilution Factor: 1				
		Analysis Time..: 17:32				
Zinc	ND	20.0	ug/L	SW846 6010B	09/03-09/06/01	EJN2G1AX
		Dilution Factor: 1				
		Analysis Time..: 17:32				
Molybdenum	ND	20.0	ug/L	SW846 6010B	09/03-09/10/01	EJN2G1A2
		Dilution Factor: 1				
		Analysis Time..: 21:02				
MB Lot-Sample #: D1H280000-384 **Prep Batch #...:** 1240384						
Mercury	ND	0.20	ug/L	SW846 7470A	09/12-09/13/01	EJN7M1AA
		Dilution Factor: 1				
		Analysis Time..: 18:08				
MB Lot-Sample #: D1H300000-494 **Prep Batch #...:** 1242494						
Antimony	ND	1.0	ug/L	SW846 6020	09/10-09/13/01	EJVRQ1AA
		Dilution Factor: 1				
		Analysis Time..: 16:35				
Arsenic	ND	5.0	ug/L	SW846 6020	09/10-09/13/01	EJVRQ1AC
		Dilution Factor: 1				
		Analysis Time..: 16:35				
Cadmium	ND	1.0	ug/L	SW846 6020	09/10-09/13/01	EJVRQ1AD
		Dilution Factor: 1				
		Analysis Time..: 16:35				
Chromium	**1.3**	**1.0**	**ug/L**	**SW846 6020**	**09/10-09/13/01**	**EJVRQ1AJ**
		Dilution Factor: 1				
		Analysis Time..: 16:35				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D1H240209 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Lead	0.20 B	1.0	ug/L	SW846 6020	09/10-09/13/01	EJVRQ1AE
		Dilution Factor: 1				
		Analysis Time..: 16:35				
Selenium	ND	5.0	ug/L	SW846 6020	09/10-09/13/01	EJVRQ1AF
		Dilution Factor: 1				
		Analysis Time..: 16:35				
Silver	ND	1.0	ug/L	SW846 6020	09/10-09/13/01	EJVRQ1AG
		Dilution Factor: 1				
		Analysis Time..: 16:35				
Thallium	ND	1.0	ug/L	SW846 6020	09/10-09/13/01	EJVRQ1AH
		Dilution Factor: 1				
		Analysis Time..: 16:35				

NOTE(S):

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

B Estimated result. Result is less than RL.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D1H240209 Matrix.....: WATER
Date Sampled...: 08/19/01 11:25 Date Received..: 08/21/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D1H210169-001 Prep Batch #...: 1240384							
Mercury	114	(84 - 114)			SW846 7470A	09/12-09/13/01	EJAH51EA
	97 *	(84 - 114)	16	(0-10)	SW846 7470A	09/12-09/13/01	EJAH51EC
		Dilution Factor: 1					
		Analysis Time..: 18:19					

NOTE(S):

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

* Relative percent difference (RPD) is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1H240209 Matrix.....: WATER
Date Sampled...: 08/19/01 11:25 Date Received..: 08/21/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT		UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D1H210169-001 Prep Batch #...: 1240384										
Mercury										
	ND	5.00	5.68		ug/L	114		SW846 7470A	09/12-09/13/01	EJAH51EA
	ND	5.00	4.83	*	ug/L	97	16	SW846 7470A	09/12-09/13/01	EJAH51EC
					Dilution Factor: 1					
					Analysis Time..: 18:19					

NOTE(S):

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

* Relative percent difference (RPD) is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D1H240209 **Matrix.....:** GW
Date Sampled...: 08/21/01 09:45 **Date Received..:** 08/24/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D1H240209-007 **Prep Batch #...:** 1242494							
Antimony	100	(86 - 119)			SW846 6020	09/10-09/13/01	EJH7H1CH
	94	(86 - 119)	6.1	(0-20)	SW846 6020	09/10-09/13/01	EJH7H1CJ
		Dilution Factor: 1					
		Analysis Time..: 17:02					
Arsenic	96	(86 - 114)			SW846 6020	09/10-09/13/01	EJH7H1CK
	96	(86 - 114)	0.02	(0-20)	SW846 6020	09/10-09/13/01	EJH7H1CL
		Dilution Factor: 1					
		Analysis Time..: 17:02					
Cadmium	94	(85 - 115)			SW846 6020	09/10-09/13/01	EJH7H1CM
	94	(85 - 115)	0.30	(0-20)	SW846 6020	09/10-09/13/01	EJH7H1CN
		Dilution Factor: 1					
		Analysis Time..: 17:02					
Chromium	98	(85 - 115)			SW846 6020	09/10-09/13/01	EJH7H1C0
	96	(85 - 115)	2.6	(0-20)	SW846 6020	09/10-09/13/01	EJH7H1C1
		Dilution Factor: 1					
		Analysis Time..: 17:02					
Lead	85	(85 - 115)			SW846 6020	09/10-09/13/01	EJH7H1CP
	87	(85 - 115)	1.8	(0-20)	SW846 6020	09/10-09/13/01	EJH7H1CQ
		Dilution Factor: 1					
		Analysis Time..: 17:02					
Selenium	98	(85 - 115)			SW846 6020	09/10-09/13/01	EJH7H1CR
	99	(85 - 115)	0.82	(0-20)	SW846 6020	09/10-09/13/01	EJH7H1CT
		Dilution Factor: 1					
		Analysis Time..: 17:02					
Silver	17 N	(85 - 114)			SW846 6020	09/10-09/13/01	EJH7H1CU
	19 N	(85 - 114)	12	(0-20)	SW846 6020	09/10-09/13/01	EJH7H1CV
		Dilution Factor: 1					
		Analysis Time..: 17:02					
Thallium	88	(85 - 115)			SW846 6020	09/10-09/13/01	EJH7H1CW
	90	(85 - 115)	1.9	(0-20)	SW846 6020	09/10-09/13/01	EJH7H1CX
		Dilution Factor: 1					
		Analysis Time..: 17:02					

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1H240209 **Matrix.....:** GW
Date Sampled...: 08/21/01 09:45 **Date Received..:** 08/24/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D1H240209-007 **Prep Batch #...:** 1242494									
Antimony									
	2.0	200	201	ug/L	100		SW846 6020	09/10-09/13/01	EJH7H1CH
	2.0	200	189	ug/L	94	6.1	SW846 6020	09/10-09/13/01	EJH7H1CJ
				Dilution Factor: 1					
				Analysis Time..: 17:02					
Arsenic									
	4.0	200	197	ug/L	96		SW846 6020	09/10-09/13/01	EJH7H1CK
	4.0	200	197	ug/L	96	0.02	SW846 6020	09/10-09/13/01	EJH7H1CL
				Dilution Factor: 1					
				Analysis Time..: 17:02					
Cadmium									
	0.74	200	188	ug/L	94		SW846 6020	09/10-09/13/01	EJH7H1CM
	0.74	200	188	ug/L	94	0.30	SW846 6020	09/10-09/13/01	EJH7H1CN
				Dilution Factor: 1					
				Analysis Time..: 17:02					
Chromium									
	10.6	200	208	ug/L	98		SW846 6020	09/10-09/13/01	EJH7H1C0
	10.6	200	202	ug/L	96	2.6	SW846 6020	09/10-09/13/01	EJH7H1C1
				Dilution Factor: 1					
				Analysis Time..: 17:02					
Lead									
	10.2	200	180	ug/L	85		SW846 6020	09/10-09/13/01	EJH7H1CP
	10.2	200	184	ug/L	87	1.8	SW846 6020	09/10-09/13/01	EJH7H1CQ
				Dilution Factor: 1					
				Analysis Time..: 17:02					
Selenium									
	7.1	200	203	ug/L	98		SW846 6020	09/10-09/13/01	EJH7H1CR
	7.1	200	205	ug/L	99	0.82	SW846 6020	09/10-09/13/01	EJH7H1CT
				Dilution Factor: 1					
				Analysis Time..: 17:02					
Silver									
	1.6	200	35.5 N	ug/L	17		SW846 6020	09/10-09/13/01	EJH7H1CU
	1.6	200	40.2 N	ug/L	19	12	SW846 6020	09/10-09/13/01	EJH7H1CV
				Dilution Factor: 1					
				Analysis Time..: 17:02					

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1H240209 Matrix.....: GW
Date Sampled...: 08/21/01 09:45 Date Received..: 08/24/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Thallium									
	ND	200	176	ug/L	88		SW846 6020	09/10-09/13/01	EJH7H1CW
	ND	200	179	ug/L	90	1.9	SW846 6020	09/10-09/13/01	EJH7H1CX

Dilution Factor: 1
Analysis Time..: 17:02

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D1H240209 Matrix.....: WATER
Date Sampled...: 08/22/01 13:57 Date Received..: 08/24/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D1H250165-019 Prep Batch #...: 1240380							
Aluminum	100	(89 - 109)			SW846 6010B	09/03-09/06/01	EJK621A5
	101	(89 - 109)	0.19	(0-20)	SW846 6010B	09/03-09/06/01	EJK621A6
		Dilution Factor: 1					
		Analysis Time..: 17:52					
Barium	101	(92 - 115)			SW846 6010B	09/03-09/06/01	EJK621A0
	101	(92 - 115)	0.39	(0-20)	SW846 6010B	09/03-09/06/01	EJK621A1
		Dilution Factor: 1					
		Analysis Time..: 17:52					
Beryllium	95	(91 - 117)			SW846 6010B	09/03-09/10/01	EJK621A8
	97	(91 - 117)	1.9	(0-20)	SW846 6010B	09/03-09/10/01	EJK621A9
		Dilution Factor: 1					
		Analysis Time..: 22:42					
Calcium	96	(88 - 108)			SW846 6010B	09/03-09/06/01	EJK621C8
	95	(88 - 108)	0.67	(0-20)	SW846 6010B	09/03-09/06/01	EJK621C9
		Dilution Factor: 1					
		Analysis Time..: 17:52					
Cobalt	97	(91 - 111)			SW846 6010B	09/03-09/10/01	EJK621CX
	99	(91 - 111)	1.8	(0-20)	SW846 6010B	09/03-09/10/01	EJK621C0
		Dilution Factor: 1					
		Analysis Time..: 22:42					
Copper	100	(93 - 113)			SW846 6010B	09/03-09/06/01	EJK621CC
	99	(93 - 113)	1.0	(0-20)	SW846 6010B	09/03-09/06/01	EJK621CD
		Dilution Factor: 1					
		Analysis Time..: 17:52					
Iron	99	(92 - 114)			SW846 6010B	09/03-09/06/01	EJK621CF
	100	(92 - 114)	0.56	(0-20)	SW846 6010B	09/03-09/06/01	EJK621CG
		Dilution Factor: 1					
		Analysis Time..: 17:52					
Magnesium	100	(93 - 113)			SW846 6010B	09/03-09/06/01	EJK621DC
	99	(93 - 113)	0.83	(0-20)	SW846 6010B	09/03-09/06/01	EJK621DD
		Dilution Factor: 1					
		Analysis Time..: 17:52					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D1H240209 Matrix.....: WATER
Date Sampled...: 08/22/01 13:57 Date Received..: 08/24/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	100	(89 - 114)			SW846 6010B	09/03-09/06/01	EJK621CJ
	99	(89 - 114)	0.38	(0-20)	SW846 6010B	09/03-09/06/01	EJK621CK
		Dilution Factor: 1					
		Analysis Time..: 17:52					
Nickel	100	(89 - 109)			SW846 6010B	09/03-09/06/01	EJK621CM
	100	(89 - 109)	0.20	(0-20)	SW846 6010B	09/03-09/06/01	EJK621CN
		Dilution Factor: 1					
		Analysis Time..: 17:52					
Potassium	96	(87 - 110)			SW846 6010B	09/03-09/06/01	EJK621DF
	95	(87 - 110)	0.59	(0-20)	SW846 6010B	09/03-09/06/01	EJK621DG
		Dilution Factor: 1					
		Analysis Time..: 17:52					
Sodium	100	(91 - 111)			SW846 6010B	09/03-09/06/01	EJK621DJ
	97	(91 - 111)	1.0	(0-20)	SW846 6010B	09/03-09/06/01	EJK621DK
		Dilution Factor: 1					
		Analysis Time..: 17:52					
Tin	90	(89 - 109)			SW846 6010B	09/03-09/10/01	EJK621C2
	91	(89 - 109)	1.8	(0-20)	SW846 6010B	09/03-09/10/01	EJK621C3
		Dilution Factor: 1					
		Analysis Time..: 22:42					
Vanadium	102	(88 - 115)			SW846 6010B	09/03-09/06/01	EJK621CQ
	101	(88 - 115)	0.51	(0-20)	SW846 6010B	09/03-09/06/01	EJK621CR
		Dilution Factor: 1					
		Analysis Time..: 17:52					
Zinc	98	(83 - 111)			SW846 6010B	09/03-09/06/01	EJK621CU
	98	(83 - 111)	0.25	(0-20)	SW846 6010B	09/03-09/06/01	EJK621CV
		Dilution Factor: 1					
		Analysis Time..: 17:52					
Molybdenum	104	(90 - 110)			SW846 6010B	09/03-09/10/01	EJK621C5
	106	(90 - 110)	1.8	(0-20)	SW846 6010B	09/03-09/10/01	EJK621C6
		Dilution Factor: 1					
		Analysis Time..: 22:42					

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1H240209 **Matrix.....:** WATER
Date Sampled...: 08/22/01 13:57 **Date Received..:** 08/24/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D1H250165-019 **Prep Batch #...:** 1240380									
Aluminum									
	ND	2000	2010	ug/L	100		SW846 6010B	09/03-09/06/01	EJK621A5
	ND	2000	2010	ug/L	101	0.19	SW846 6010B	09/03-09/06/01	EJK621A6
			Dilution Factor: 1						
			Analysis Time..: 17:52						
Barium									
	18.0	2000	2040	ug/L	101		SW846 6010B	09/03-09/06/01	EJK621A0
	18.0	2000	2040	ug/L	101	0.39	SW846 6010B	09/03-09/06/01	EJK621A1
			Dilution Factor: 1						
			Analysis Time..: 17:52						
Beryllium									
	ND	50.0	47.5	ug/L	95		SW846 6010B	09/03-09/10/01	EJK621A8
	ND	50.0	48.4	ug/L	97	1.9	SW846 6010B	09/03-09/10/01	EJK621A9
			Dilution Factor: 1						
			Analysis Time..: 22:42						
Calcium									
	37600	50000	85700	ug/L	96		SW846 6010B	09/03-09/06/01	EJK621C8
	37600	50000	85100	ug/L	95	0.67	SW846 6010B	09/03-09/06/01	EJK621C9
			Dilution Factor: 1						
			Analysis Time..: 17:52						
Cobalt									
	ND	500	484	ug/L	97		SW846 6010B	09/03-09/10/01	EJK621CX
	ND	500	493	ug/L	99	1.8	SW846 6010B	09/03-09/10/01	EJK621C0
			Dilution Factor: 1						
			Analysis Time..: 22:42						
Copper									
	ND	250	250	ug/L	100		SW846 6010B	09/03-09/06/01	EJK621CC
	ND	250	247	ug/L	99	1.0	SW846 6010B	09/03-09/06/01	EJK621CD
			Dilution Factor: 1						
			Analysis Time..: 17:52						
Iron									
	73.0	1000	1060	ug/L	99		SW846 6010B	09/03-09/06/01	EJK621CF
	73.0	1000	1070	ug/L	100	0.56	SW846 6010B	09/03-09/06/01	EJK621CG
			Dilution Factor: 1						
			Analysis Time..: 17:52						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1H240209 Matrix.....: WATER
Date Sampled...: 08/22/01 13:57 Date Received..: 08/24/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Magnesium									
	20100	50000	70000	ug/L	100		SW846 6010B	09/03-09/06/01	EJK621DC
	20100	50000	69400	ug/L	99	0.83	SW846 6010B	09/03-09/06/01	EJK621DD
			Dilution Factor: 1						
			Analysis Time..: 17:52						
Manganese									
	26.0	500	524	ug/L	100		SW846 6010B	09/03-09/06/01	EJK621CJ
	26.0	500	522	ug/L	99	0.38	SW846 6010B	09/03-09/06/01	EJK621CK
			Dilution Factor: 1						
			Analysis Time..: 17:52						
Nickel									
	ND	500	500	ug/L	100		SW846 6010B	09/03-09/06/01	EJK621CM
	ND	500	499	ug/L	100	0.20	SW846 6010B	09/03-09/06/01	EJK621CN
			Dilution Factor: 1						
			Analysis Time..: 17:52						
Potassium									
	2100	50000	50000	ug/L	96		SW846 6010B	09/03-09/06/01	EJK621DF
	2100	50000	49700	ug/L	95	0.59	SW846 6010B	09/03-09/06/01	EJK621DG
			Dilution Factor: 1						
			Analysis Time..: 17:52						
Sodium									
	94100	50000	144000	ug/L	100		SW846 6010B	09/03-09/06/01	EJK621DJ
	94100	50000	142000	ug/L	97	1.0	SW846 6010B	09/03-09/06/01	EJK621DK
			Dilution Factor: 1						
			Analysis Time..: 17:52						
Tin									
	ND	2000	1790	ug/L	90		SW846 6010B	09/03-09/10/01	EJK621C2
	ND	2000	1830	ug/L	91	1.8	SW846 6010B	09/03-09/10/01	EJK621C3
			Dilution Factor: 1						
			Analysis Time..: 22:42						
Vanadium									
	ND	500	508	ug/L	102		SW846 6010B	09/03-09/06/01	EJK621CQ
	ND	500	505	ug/L	101	0.51	SW846 6010B	09/03-09/06/01	EJK621CR
			Dilution Factor: 1						
			Analysis Time..: 17:52						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D1H240209 **Matrix.....:** WATER
Date Sampled...: 08/22/01 13:57 **Date Received..:** 08/24/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc									
	9.9	500	502	ug/L	98		SW846 6010B	09/03-09/06/01	EJK621CU
	9.9	500	501	ug/L	98	0.25	SW846 6010B	09/03-09/06/01	EJK621CV
			Dilution Factor: 1						
			Analysis Time..: 17:52						
Molybdenum									
	ND	1000	1040	ug/L	104		SW846 6010B	09/03-09/10/01	EJK621C5
	ND	1000	1060	ug/L	106	1.8	SW846 6010B	09/03-09/10/01	EJK621C6
			Dilution Factor: 1						
			Analysis Time..: 22:42						

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: D1H240209 Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Halogens		Work Order #: EKDX41AC	LCS Lot-Sample#: D1I120000-274		
	88	(79 - 115)	SW846 9020B	09/11/01	1255274
		Dilution Factor: 1			
		Analysis Time..: 12:00			

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: D1H240209 Matrix.....: WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Halogens			Work Order #:	EKDX41AC	LCS Lot-Sample#:	D1I120000-274	
	100	88.2	ug/L	88	SW846 9020B	09/11/01	1255274
			Dilution Factor: 1				
			Analysis Time..: 12:00				

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: D1H240209 Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate		WO#:EKGVX1AC-LCS/EKGVX1AD-LCSD LCS Lot-Sample#: D1I140000-177					
	103	(90 - 110)			MCAWW 353.2	08/24/01	1257177
	101	(90 - 110)	1.7	(0-10)	MCAWW 353.2	08/24/01	1257177
		Dilution Factor: 1					
Nitrite		WO#:EJTAK1AC-LCS/EJTAK1AD-LCSD LCS Lot-Sample#: D1H300000-278					
	103	(90 - 110)			MCAWW 354.1	08/24-08/29/01	1242278
	101	(90 - 110)	1.7	(0-10)	MCAWW 354.1	08/24-08/29/01	1242278
		Dilution Factor: 1					
Perchlorate		WO#:EKNPH1AC-LCS/EKNPH1AD-LCSD LCS Lot-Sample#: D1I190000-183					
	95	(80 - 120)			EPA 314.0	09/18/01	1262183
	95	(80 - 120)	0.10	(0-20)	EPA 314.0	09/18/01	1262183
		Dilution Factor: 1					
Sulfate		WO#:EKF061AC-LCS/EKF061AD-LCSD LCS Lot-Sample#: D1I130000-303					
	101	(90 - 110)			MCAWW 300.0A	09/12/01	1256303
	100	(90 - 110)	0.15	(0-10)	MCAWW 300.0A	09/12/01	1256303
		Dilution Factor: 1					
Total Dissolved Solids		WO#:EJRX81AC-LCS/EJRX81AD-LCSD LCS Lot-Sample#: D1H280000-202					
	96	(86 - 106)			MCAWW 160.1	08/27/01	1240202
	95	(86 - 106)	1.2	(0-20)	MCAWW 160.1	08/27/01	1240202
		Dilution Factor: 1					
Total Organic Carbon		WO#:EJQ6J1AC-LCS/EJQ6J1AD-LCSD LCS Lot-Sample#: D1H290000-268					
	103	(90 - 110)			SW846 9060	08/29/01	1241268
	103	(90 - 110)	0.35	(0-10)	SW846 9060	08/29/01	1241268
		Dilution Factor: 1					
Total Organic Carbon		WO#:EJ9GH1AC-LCS/EJ9GH1AD-LCSD LCS Lot-Sample#: D1I100000-208					
	102	(90 - 110)			SW846 9060	09/07/01	1253208
	100	(90 - 110)	2.5	(0-10)	SW846 9060	09/07/01	1253208
		Dilution Factor: 1					
Total Sulfide		WO#:EJQFX1AC-LCS/EJQFX1AD-LCSD LCS Lot-Sample#: D1H290000-288					
	84	(70 - 130)			SW846 9030B/9034	08/28/01	1241288
	90	(70 - 130)	7.5	(0-20)	SW846 9030B/9034	08/28/01	1241288
		Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: D1H240209 Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: D1H240209 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate		WO#:EKGVX1AC-LCS/EKGVX1AD-LCSD LCS Lot-Sample#: D1I140000-177						
	0.0400	0.0412	mg/L	103		MCAWW 353.2	08/24/01	1257177
	0.0400	0.0405	mg/L	101	1.7	MCAWW 353.2	08/24/01	1257177
		Dilution Factor: 1						
Nitrite		WO#:EJTAK1AC-LCS/EJTAK1AD-LCSD LCS Lot-Sample#: D1H300000-278						
	0.0400	0.0412	mg/L	103		MCAWW 354.1	08/24-08/29/01	1242278
	0.0400	0.0405	mg/L	101	1.7	MCAWW 354.1	08/24-08/29/01	1242278
		Dilution Factor: 1						
Perchlorate		WO#:EKNPH1AC-LCS/EKNPH1AD-LCSD LCS Lot-Sample#: D1I190000-183						
	200	191	ug/L	95		EPA 314.0	09/18/01	1262183
	200	190	ug/L	95	0.10	EPA 314.0	09/18/01	1262183
		Dilution Factor: 1						
Sulfate		WO#:EKF061AC-LCS/EKF061AD-LCSD LCS Lot-Sample#: D1I130000-303						
	25.0	25.1	mg/L	101		MCAWW 300.0A	09/12/01	1256303
	25.0	25.1	mg/L	100	0.15	MCAWW 300.0A	09/12/01	1256303
		Dilution Factor: 1						
Total Dissolved Solids		WO#:EJRX81AC-LCS/EJRX81AD-LCSD LCS Lot-Sample#: D1H280000-202						
	500	480	mg/L	96		MCAWW 160.1	08/27/01	1240202
	500	474	mg/L	95	1.2	MCAWW 160.1	08/27/01	1240202
		Dilution Factor: 1						
Total Organic Carbon		WO#:EJQ6J1AC-LCS/EJQ6J1AD-LCSD LCS Lot-Sample#: D1H290000-268						
	25.0	25.6	mg/L	103		SW846 9060	08/29/01	1241268
	25.0	25.7	mg/L	103	0.35	SW846 9060	08/29/01	1241268
		Dilution Factor: 1						
Total Organic Carbon		WO#:EJ9GH1AC-LCS/EJ9GH1AD-LCSD LCS Lot-Sample#: D1I100000-208						
	25.0	25.5	mg/L	102		SW846 9060	09/07/01	1253208
	25.0	24.9	mg/L	100	2.5	SW846 9060	09/07/01	1253208
		Dilution Factor: 1						
Total Sulfide		WO#:EJQFX1AC-LCS/EJQFX1AD-LCSD LCS Lot-Sample#: D1H290000-288						
	24.4	20.4	mg/L	84		SW846 9030B/9034	08/28/01	1241288
	24.4	22.0	mg/L	90	7.5	SW846 9030B/9034	08/28/01	1241288
		Dilution Factor: 1						

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: D1H240209 Matrix.....: WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #

NOTE(S):

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

METHOD BLANK REPORT

General Chemistry

Client Lot #...: D1H240209 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate		Work Order #: EKGVX1AA		MB Lot-Sample #:	D1I140000-177	
	ND	0.10	mg/L	MCAWW 353.2	08/24/01	1257177
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Nitrite		Work Order #: EJTAK1AA		MB Lot-Sample #:	D1H300000-278	
	ND	0.010	mg/L	MCAWW 354.1	08/24-08/29/01	1242278
		Dilution Factor: 1				
		Analysis Time..: 13:45				
Perchlorate		Work Order #: EKNPH1AA		MB Lot-Sample #:	D1I190000-183	
	ND	20.0	ug/L	EPA 314.0	09/18/01	1262183
		Dilution Factor: 1				
		Analysis Time..: 17:10				
Sulfate		Work Order #: EKF061AA		MB Lot-Sample #:	D1I130000-303	
	ND	5.0	mg/L	MCAWW 300.0A	09/12/01	1256303
		Dilution Factor: 1				
		Analysis Time..: 16:41				
Total Dissolved Solids		Work Order #: EJRX81AA		MB Lot-Sample #:	D1H280000-202	
	ND	10.0	mg/L	MCAWW 160.1	08/27/01	1240202
		Dilution Factor: 1				
		Analysis Time..: 15:00				
Total Organic Halogens		Work Order #: EKDX41AA		MB Lot-Sample #:	D1I120000-274	
	5.2 B	**30.0**	**ug/L**	**SW846 9020B**	**09/11/01**	**1255274**
		Dilution Factor: 1				
		Analysis Time..: 12:00				
Total Organic Carbon		Work Order #: EJQ6J1AA		MB Lot-Sample #:	D1H290000-268	
	0.52 B	**1.0**	**mg/L**	**SW846 9060**	**08/29/01**	**1241268**
		Dilution Factor: 1				
		Analysis Time..: 08:00				
Total Organic Carbon		Work Order #: EJ9GH1AA		MB Lot-Sample #:	D1I100000-208	
	0.95	**1.0**	**mg/L**	**SW846 9060**	**09/07/01**	**1253208**
		Dilution Factor: 1				
		Analysis Time..: 08:00				
Total Sulfide		Work Order #: EJQFX1AA		MB Lot-Sample #:	D1H290000-288	
	ND	4.0	mg/L	SW846 9030B/9034	08/28/01	1241288
		Dilution Factor: 1				
		Analysis Time..: 12:00				

(Continued on next page)

METHOD BLANK REPORT

General Chemistry

Client Lot #...: D1H240209 Matrix.....: WATER

NOTE(S):

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

B Estimated result. Result is less than RL.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: D1H240209 Matrix.....: WATER
Date Sampled...: 08/28/01 08:30 Date Received..: 08/29/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate		WO#: EKATV1EM-MS/EKATV1EN-MSD				MS Lot-Sample #: D1I110138-001	
	101	(90 - 110)			MCAWW 300.0A	09/12/01	1256303
	103	(90 - 110)	1.1	(0-10)	MCAWW 300.0A	09/12/01	1256303
		Dilution Factor: 1					
		Analysis Time..: 17:12					
Total Organic Halogens		WO#: EJQAL1CQ-MS/EJQAL1CR-MSD				MS Lot-Sample #: D1H290146-001	
	86	(79 - 115)			SW846 9020B	09/06/01	1250444
	99	(79 - 115)	8.3	(0-18)	SW846 9020B	09/06/01	1250444
		Dilution Factor: 1					
		Analysis Time..: 12:00					
Total Organic Carbon		WO#: EJDDF1CC-MS/EJDDF1CD-MSD				MS Lot-Sample #: D1H220165-001	
	106	(90 - 110)			SW846 9060	08/29/01	1241261
	109	(90 - 110)	2.7	(0-10)	SW846 9060	08/29/01	1241261
		Dilution Factor: 1					
		Analysis Time..: 08:00					
Total Organic Carbon		WO#: EJNEJ1AP-MS/EJNEJ1AQ-MSD				MS Lot-Sample #: D1H280167-004	
	100	(90 - 110)			SW846 9060	09/07/01	1253208
	102	(90 - 110)	1.9	(0-10)	SW846 9060	09/07/01	1253208
		Dilution Factor: 1					
		Analysis Time..: 08:00					

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: D1H240209 Matrix.....: WATER
Date Sampled...: 08/28/01 08:30 Date Received..: 08/29/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate			WO#: EKATV1EM-MS/EKATV1EN-MSD				MS Lot-Sample #: D1I110138-001		
	16.0	25.0	41.3	mg/L	101		MCAWW 300.0A	09/12/01	1256303
	16.0	25.0	41.7	mg/L	103	1.1	MCAWW 300.0A	09/12/01	1256303
			Dilution Factor: 1						
			Analysis Time..: 17:12						
Total Organic Halogens			WO#: EJQAL1CQ-MS/EJQAL1CR-MSD				MS Lot-Sample #: D1H290146-001		
	562	1000	1430	ug/L	86		SW846 9020B	09/06/01	1250444
	562	1000	1550	ug/L	99	8.3	SW846 9020B	09/06/01	1250444
			Dilution Factor: 1						
			Analysis Time..: 12:00						
Total Organic Carbon			WO#: EJDDF1CC-MS/EJDDF1CD-MSD				MS Lot-Sample #: D1H220165-001		
	1.9	25.0	28.4	mg/L	106		SW846 9060	08/29/01	1241261
	1.9	25.0	29.2	mg/L	109	2.7	SW846 9060	08/29/01	1241261
			Dilution Factor: 1						
			Analysis Time..: 08:00						
Total Organic Carbon			WO#: EJNEJ1AP-MS/EJNEJ1AQ-MSD				MS Lot-Sample #: D1H280167-004		
	1.8	25.0	26.8	mg/L	100		SW846 9060	09/07/01	1253208
	1.8	25.0	27.3	mg/L	102	1.9	SW846 9060	09/07/01	1253208
			Dilution Factor: 1						
			Analysis Time..: 08:00						

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: D1H240209 Matrix.....: GW
Date Sampled...: 08/21/01 09:45 Date Received..: 08/24/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrite		WO#: EJH7H1CF-MS/EJH7H1CG-MSD				MS Lot-Sample #: D1H240209-007	
	96	(90 - 110)			MCAWW 354.1	08/24-08/29/01	1242278
	96	(90 - 110)	0.68	(0-10)	MCAWW 354.1	08/24-08/29/01	1242278
		Dilution Factor: 1					
		Analysis Time..: 13:45					
Perchlorate		WO#: EJH6R1AF-MS/EJH6R1AG-MSD				MS Lot-Sample #: D1H240209-001	
	98	(80 - 120)			EPA 314.0	09/18/01	1262183
	96	(80 - 120)	2.3	(0-20)	EPA 314.0	09/18/01	1262183
		Dilution Factor: 1					
		Analysis Time..: 17:39					

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: D1H240209
Date Sampled...: 08/21/01 09:45 Date Received..: 08/24/01

Matrix.....: GW

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrite				WO#: EJH7H1CF-MS/EJH7H1CG-MSD			MS Lot-Sample #: D1H240209-007		
	0.0054	0.100	0.102	mg/L	96		MCAWW 354.1	08/24-08/29/01	1242278
	0.0054	0.100	0.101	mg/L	96	0.68	MCAWW 354.1	08/24-08/29/01	1242278
			Dilution Factor: 1						
			Analysis Time..: 13:45						
Perchlorate				WO#: EJH6R1AF-MS/EJH6R1AG-MSD			MS Lot-Sample #: D1H240209-001		
	ND	100	98.3	ug/L	98		EPA 314.0	09/18/01	1262183
	ND	100	96.1	ug/L	96	2.3	EPA 314.0	09/18/01	1262183
			Dilution Factor: 1						
			Analysis Time..: 17:39						

NOTE(S):

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

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: D1H240209 Work Order #...: EJJGX-SMP Matrix.....: WATER
EJJGX-DUP
Date Sampled...: 08/20/01 11:22 Date Received..: 08/23/01
% Moisture.....: 100 Dilution Factor: Initial Wgt/Vol:

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: D1H240235-004		
	814	812	mg/L	0.25	(0-20)	MCAWW 160.1	08/27/01	1240202

Dilution Factor: 1 Analysis Time..: 15:00

1.1°C
QB 8/22

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 463538100

Sampling Location
Cannon Air Force Base, NM

Team Leader
Project chief: Fredrick E. Gebhardt

PACKING AND SHIPPING DETAILS

Packed and Sealed for Shipping by
R.K. DeWees

Seal Number
135619

Delivered to Shipper by
R.K. DeWees

Airbill Number
827368342705

Sampling Status
☐ Done ☒ Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
21 AUG 2001	1155	CAFB-T	Ground water	5	All Appx-IX: TOC-SW9060, TOX-SW9020, VOC-SW5030/SW8260B, Perchlorate-EPA 314.0	Environmental Sample
21 AUG	1310	CAFB-B	"	"	"	
"	1310	CAFB-BB	"	"	"	
21 AUG	1410	CAFB U	"	"	"	
~~21 AUG~~		~~CAFB-U~~	~~WATER~~ ~~PURE~~	~~5~~	~~TRIP BLANK~~	

Additional Comments
ALL VOC'S ARE IN COOLER WITH CAFB-F & CAFB-S

CHAIN OF CUSTODY RECORD

Relinquished by (signed)	Received by (signed)	Date	Time
[signature]	[signature]	8/22/01	830

LABORATORY LOG-IN OF SAMPLE SHIPPING CONTAINER

Analytical Laboratory
Severn Trent Services
4955 Yarrow Street
Arvada, CO 80002
ph: (303) 421-6611

Attention: Karen Kuoppala

Seal Intact upon Receipt
☐ Yes ☐ No

Condition of Contents

Contents Temperature

Laboratory Project Number

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 463538100

Sampling Location: Cannon Air Force Base, NM

Team Leader: Project chief: Fredrick E. Gebhardt

PACKING AND SHIPPING DETAILS

Packed and Sealed for Shipping by: R.K. DeWees

Delivered to Shipper by: R.K. DeWees

Seal Number: 135622

Airbill Number: 827368342707

Sampling Status: ☐ Done ☒ Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
21 AUG 2001	1105	CAFB-S	Ground water	5	All Appx-IX: TOC-SW9060, TOX-SW9020, VOC-SW5030/SW8260B, Perchlorate-EPA 314.0	Environmental Sample
~~21 AUG 2001~~	~~1105~~	~~CAFB-S~~	—	—	←	
21 AUG	1105	CAFB-S	ULTRA PURE	3	TRIP BLANK	

Additional Comments: ALL VOC'S IN THIS COOLER

CHAIN OF CUSTODY RECORD

Relinquished by (signed)	Received by (signed)	Date	Time
[signature]	[signature]	8/21/01	0830

LABORATORY LOG-IN OF SAMPLE SHIPPING CONTAINER

Analytical Laboratory: Severn Trent Services, 4955 Yarrow Street, Arvada, CO 80002, ph: (303) 421-6611

Attention: Karen Kuoppala

Seal Intact upon Receipt: ☐ Yes ☐ No

Condition of Contents:

Contents Temperature:

Laboratory Project Number:

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

0.2°C

Project Name & Number Cannon Air Force Base, Ground Water Sampling 463538100 ~~463536004~~	PACKING AND SHIPPING DETAILS Packed and Sealed for Shipping by: R.K. DeWees Seal Number: 135622
Sampling Location Sewage Lagoons, (wells ~~B~~, F, ~~G~~, ~~H~~) Cannon Air Force Base, New Mexico	Delivered to Shipper by: R.K. DeWees Airbill Number: 827368342707
Team Leader Project chief - Fredrick E. Gebhardt	Sampling Status: ☐ Done ☒ Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
21 Aug 2001	0955	CAFB- F	GROUND-WATER	10	All Apx-IX: SW8260B, SW8081, SW8082, SW6010 -Total (Al, Ba, Be, Ca, Co, Cu, Fe, Mg, Mn, Mo, Ni, K, Na, Sn, V, Zn), SW6020-ICP-MS (Sb, Ag, Cd, As, Cr, Pb, Se, Tl), SW7470 (Hg), NITRATE-E353.2, NIRITE-E354.1, SULFATE-E300, TDS-E160., SULFIDE-SW9030. PERCHLORATE- EPA 314.0	ENVIRONMENTAL SAMPLE

Additional Comments: ALL VOA'S IN THIS COOLER

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 ☐ Yes ☐ No
R.K. DeWees	(signature)	08/24/01	0830	~~Quantera Environmental~~ SEVERN TRENT 4955 Yarrow Street Arvada, CO 80002 ph: (303) 786-0184 Attention: Karen Kuoppala	Condition of Contents
					Contents Temperature
					Laboratory Project Number

3.8°C
cp 8/27

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 463538100

Sampling Location
Cannon Air Force Base, NM

Team Leader
Project chief: Fredrick E. Gebhardt

PACKING AND SHIPPING DETAILS

Packed and Sealed for Shipping by
R.K. DeWees

Seal Number
134268

Delivered to Shipper by
R.K. DeWees

Airbill Number
827368342692

Sampling Status ☐ Done ☒ Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
22 AUG 2001	0955	CAFB-C	Ground water	5	All Appx-IX: TOC-SW9060, TOX-SW9020, VOC-SW5030/SW8260B, Perchlorate-EPA 314.0	Environmental Sample
"	1030	CAFB-D	"	"	"	"
"	1200	CAFB-Q	"	"	"	"
22 AUG 2001	0955	CAFB-C-TB	ULTRA PURE	3	TRIP BLANK	

Additional Comments

CHAIN OF CUSTODY RECORD

Relinquished by (signed)	Received by (signed)	Date	Time
[signature]	[signature]	8/28/01	0830

LABORATORY LOG-IN OF SAMPLE SHIPPING CONTAINER

Analytical Laboratory
Severn Trent Services
4955 Yarrow Street
Arvada, CO 80002
ph: (303) 421-6611

Attention: Karen Kuoppala

Seal Intact upon Receipt ☐ Yes ☐ No

Condition of Contents

Contents Temperature

Laboratory Project Number

STL Denver

Sample Receiving Checklist

Lot #: DIN 240209 Date/Time Received: 08/22/01 0830 — 08/24/01 0830

Company Name & Sampling Site: USGS - Cannon

*Cooler #(s): 1 2 3

Temperatures (°C): 1.1 0.2 3.8

PM to Complete This Section: *Yes* *No*

Residual chlorine check required: ☐ ☐

Special instruction to Sample Receiving staff: 25228 Combine w/ cooler inventory

Unpacking & Labeling Check Points:

Some samples received 8/22, some 8/23 + some 8/24/01 QB

N/A	Yes	No		Initials
☐	☑	☐	1. Cooler seals intact. (N/A if hand delivered)	QB
☐	☑		2. Chain of custody present. received all by 3rd day.	
☐	☑		3. Bottles broken and/or are leaking, comment if yes.	QB
			PHOTOGRAPH BROKEN BOTTLES	
	☑	☐	4. Proper container & preservatives used (ref. Attachment D of SOP# DEN-QA-003)	
☐	☑	☐	5. pH of all samples checked and meet requirements, note exceptions.	
	☑	☐	6. Chain of custody includes "received by" and "relinquished" by signatures, dates, and times.	
	☑	☐	7. Receipt date(s) > 48 hours past the collection date(s)? If yes, notify PA/PM. 8/21	
	☑	☐	8. Chain of custody agrees with bottle count, comment if no.	
	☒	☒	9. Chain of custody agrees with labels, comment if no. TB	
☐	☑	☐	10. VOA samples filled completely, comment if no.	
☐	☑	☐	11. VOA vials preserved, check label. Preservative ☑HCl ☑4±2°C ☐Sodium Thiosulfate	
	☐	☑	12. Did samples require preservation with sodium thiosulfate?	
☐	☐	☑	13. If yes to #12, did the samples contain residual chlorine?	
☐	☐	☑	14. Sediment present in dissolved/filtered bottles.	
	☑	☐	15. Are analyses with short holding times requested?	
☐	☐	☑	16. Is extra sample volume provided for MS, MSD or matrix duplicates?	
	☐	☑	17. Multiphase samples present? If yes, comment below.	
	☐	☑	18. Any subsampling for volatiles? If yes, list samples.	
			PHOTOGRAPH MULTIPHASE SAMPLES	
☑	☐	☐	19. Subcontract COC signed and sent with samples to bottle prep?	
	☑	☐	20. Was sample labeling double checked by a second person?	
☑	☐	☐	21. Were sample bottles, COC and paperwork double checked for dissolved/filtered metals by a second person?	

Document any problems or discrepancies and the actions taken to resolve them on a Condition Upon Receipt Anomaly Report (CUR).

STL - Denver
Condition Upon Receipt Anomaly Report (CUR)

Client: USGS - Cannon AFB Date/Time: 08/24/01 1300

Lot No: D1H240209 Initiated by: [illegible]

Affected Samples COC#

Client ID	Lab ID	Analyses Requested
CAFB-S-TB		8260

CONDITION/ANOMALY/VARIANCE (CHECK ALL THAT APPLY):

☐COOLERS
- ☐Not Received, No Chain of Custody (COC)
- ☐Not Received but COC(s) Available
- ☐Leaking
- ☐Other:

☐ TEMPERATURE (greater than 6° C)
- ☐Cooler Temp
- ☐Temperature Blank

☐CUSTODY SEALS (COOLER(S)/CONTAINER(S)
- ☐None
- ☐ Not Intact
- ☐Other:

☐CHAIN OF CUSTODY (COCs)
- ☐Not relinquished by Client; No date/time Relinq.
- ☐ Incomplete Information
- ☐Other:

☐CONTAINERS
- ☐Leaking
- ☐Broken
- ☐Extra
- ☐Without Labels
- ☐VOA Vials with Headspace _____mm
- ☐Other:

☐ CONTAINER LABELS
- ☐Not the same ID/info as in COC
- ☐ Incomplete
- ☐ID COLLECTION ☐Time ☐Date ☐PRESERVATIVE
- ☐ Markings/Info smeared or illegible
- ☐Torn
- ☐Other:

☐ SAMPLES
- ☐Samples NOT RECEIVED but listed on COC ------ ☐will be noted on COC ☐ Client to send samples with new COC
- ☐Samples received but NOT LISTED on COC
- ☐Logged based on Label Information
- ☐Logged based on info from other samples on COC
- ☐ Logged according to Work Plan
- ☐Logged on HOLD UNTIL FURTHER NOTICE
- ☐ Other:
- ☐ Mislabeled as to tests, preservatives, etc.
- ☐Holding time expired
- ☐ Improper container used
- ☐Not preserved / Improper preservative used
- ☐ Improper pH _____ ☐ Lab to preserve sample
- ☐ Insufficient quantities for analysis

Comments: CAFB-S on COC - CAFB-S-TB on bottles. Used the ID from bottle to match other TB sent.

Client notified of expired holdtime 8-24-01 KK

Corrective Action:

☐ Client Informed: verbally on: 8-24-01 By: KK : In writing on: _____ By: _____

☐ Sample(s) processed "as is". _____

☐ Sample(s) on hold until: _____ If released, notify: _____

Sample Control Supervisor Review: _____ Date: _____

Project Management Review: KK Date: 08-24-01

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

N:\QA\Forms\Sample Receiving\ Condition Upon Receipt Report 1/4/99 version

APPENDIX III

Field Data

FIELD METHODS

Preperation for Purging and Sampling Cannon Air Force Base Landfill 5 wells.

- Water levels are first collected using a Solinst electric tape.
- Meters for collecting water field parameters are calibrated. Meters used are: Orion pH meter, model 250A; Orion conductance meter, model 126; YSI dissolve oxygen meter, model 57.
- Nitrogen gas is connected to air intake valve on purge/sample pump. Nitrogen gas pressure varies on each well.

Purging water before sampling.

- From each well, three well volumes of water or stabilization of field parameters is achieved before sampling. Field parameters are collected at the beginning of water purging then collected after every five gallons water purged. All water purged is contained in a water tank on site next to each well.
- Each well is equiped with a dedicated Bennett Pump. Dedicated pumps require no decontamination and no equipment blanks to be collected (except for initial installation).
- Bennett Pumps are a automatic reciprocating piston motor, operated by compressed air, which generates power for operating a double acting, piston fluid pump. Each pump is set just above the water table with an approximate ten foot extension discharge hose attached to the bottom of the pump and submerged in the groundwater.

Sampling.

- Nitrogen gas pressure is reduced. EPA's Groundwater Sampling Protocol are followed for sampling procedures and the order in which each sample bottle is collected.
- After samples are collected, each bottle will be labeled, bagged, and stored on ice until samples are packed and ready for shipping.
- Each label will have the following data: Collecting agency; Location; Sample ID; Date and time; Sample type; Analytical methods; Collectors; Bottle type and number.

Shipping.

- Sample bottles will be packed in a cooler with bagged ice and packing material. Analytical Request/Chain of Custody forms will be placed in a sealed plastic bag on top of the sample bottles. Coolers will be sealed with strapping tape and a Chain of Custody Seal with seal number.
- Coolers will be shipped by Federal Express shipping company. Coolers will be shipped overnight, and shipped on the same day samples were collected.

Sample container and preservation requirements
Landfill 5

Parameters and methods	Bottle Size and Type	Preservatives
Appendix-IX, Volatile Organic Compounds SW8260B	Three 40 ml glass vials	200 uL 50 % Hydrochloric Acid, Chilled to maintain 4 degrees Celsius
Total Organic Carbon (TOC) SW9060	16 oz. glass	2 mL 50% Sulfuric Acid, pH<2, Chilled to maintain 4 degrees Celsius
Total Organic Halogen, (TOX), SW9020B	8 oz. glass (amber)	1 mL 50% Sulfuric Acid, pH<2, Chilled to maintain 4 degrees Celsius
Perchlorate, EPA 314.0	8 oz. polyethylene	None, Chilled to maintain 4 degrees Celsius

Sample container and preservation requirements
Sewage Lagoon

Parameters and methods	Bottle Size and Type	Preservatives
Appendix-IX, Volatile Organic Compounds SW8260b	Three 40 ml glass vials	200 uL 50 % Hydrochloric Acid, Chilled to maintain 4 degrees Celsius
Appendix-IX, Pesticides and PCB's SW8081A/8082	Two 32 oz. glass	None, Chilled to maintain 4 degrees Celsius
Appendix-IX, Total Metals: 16 metals by SW6010B, 8 by SW6020, and mercury by SW7470A	16 oz. polyethylene	10 mL 20% Nitric Acid, pH<2
Nitrate, MCAWW353.2	16 oz. glass	2 mL 50% Sulfuric Acid, pH<2, Chilled to maintain 4 degrees Celsius
Nitrite , MCAWW354.1 Sulfate, MCAWW300.0A Total dissolved solids (TDS), MCAWW160.1	32 oz. polyethylene	None, Chilled to maintain 4 degrees Celsius
Sulfide, SW9030B/9034	8 oz. polyethylene	1 mL 1N Zinc Acetate, plus 1 mL 50% Sodium Hydroxide, pH>9, Chilled to maintain 4 degrees Celsius
Perchlorate, EPA 314.0	8 oz. polyethylene	None, Chilled to maintain 4 degrees Celsius

8-21-01 CAFB WELL F

0800 FRED GEBHARDT, RK DEWEES & LOUIS ~~TRUJ~~ TRUJILLO OF THE USGS NM DIST. ARRIVE AT WELL F ON CAFB. WILL NEED TO REINSTALL THE PUMP, AFTER ~~EX~~ LENGTHENING THE HOSE BY 15 FT. PUMP WAS PREVIOUSLY OUT OF THE WATER.

0820 WATER LEVEL (MEASURED W/STEEL TAPE).
HELD 300.0 - CUT 9.45 = 290.55 MP CORRECTION 0.83 FT. WL 291.38 FT. FROM ~~TOC~~ TOH

0845 CALIBRATE PH METER MDL 250A S/N 1951 STD 7.0 · MTR 7.02 STD 10.01 MTR 10.08 CAL TO 10.03
SLOPE = 107.0 STD 7.0 = CAL @ 7.00
D.O. METER MDL 55 S/N 99J0723 AP ELEV 4,300
COND. MDL 126 S/N 51449068
STD 744 MTR 746
USE FLOW-THRU CHAMBER

TIME	VOLUME	TEMP.	COND	PH	D.O.
0856	< 1.0	19.0	824	7.05	3.29
0904	5.0	17.9	829	7.35	3.23
0910	10.0	17.9	829	7.40	3.18
0915	15.0	17.9	829	7.43	3.16
0921	20.0	18.0	827	7.45	3.19
0926	25	18.0	822	7.47	3.13
0931	30	18.0	822	7.48	3.12

CONT

8/21/01 CAFB F DEWEES/TRUJILLO

TIME	VOLUME	TEMP.	COND.	pH	D.O.
0935	35.0	18.0	817	7.49	3.11
0941	40.0	18.0	816	7.48	3.10

0945 COLLECT CAFB WELL-F ENVIRONMENTAL SAMPLE

1012 ARRIVE AT CAFB WELL S MEAS W/L 300 - 2.28 = 297.72 BELOW HANGER
IRRIG. WELL 350-400' WSW PUMPING.

TIME	VOLUME	TEMP.	pH	COND.	D.O.	
1017	<1.0	18.3	7.00	767	2.84	
1022	5.0	18.7	7.27	774	3.05	
1027	10.0	18.8	7.29	775	3.06	SWITCH NITRO TANKS
1033	15.0	18.8	7.31	780	3.12	
1038	20.0	18.7	7.34	782	3.18	
1043	25.0	18.7	7.35	782	3.21	
1048	30.0	18.6	7.35	782	3.21	
1052	35.0	18.6	7.36	783	3.24	
1057	40.0	18.6	7.36	783	3.24	

1105 COLLECT CAFB-S ENVIRONMENTAL SAMPLE

21AUG 01 CAFB DEWEES/TRUJILLO

1100 ARRIVE AT CAFB-T MEAS. W/L W/STEEL TAPE
304.0 - 7.66 = 296.34 BELOW HANGER

TIME	VOLUME	TEMP.	pH	COND	D.O.
1114	<1.0	20.0	7.09	822	~~1.90~~ 2.90
1120	5.0	18.8	7.32	827	3.13
1124	10.0	18.5	7.34	843	3.16
1129	15.0	18.6	7.36	852	3.19
1134	20.0	18.6	7.37	846	3.20
1138	25.0	18.7	7.34	846	3.21
1143	30.0	18.7	7.35	850	3.23 — CHANGE NITROGEN
1149	35.0	18.6	7.33	840	3.22
1153	40.0	18.6	7.31	847	3.21

1155 COLLECT CAFB-T ENVIRONMENTAL SAMPLE

1210 WELL B DUMP DATA & MEAS. W/L
300.0 - 2.95 = 297.05 - 2.52 = 294.53

TIME	VOLUME	TEMP	pH	COND	D.O.
1330	<5.0	18.9	7.08	—	1.55

COND PROBE NOT WORKING. TRIED DIFFERENT METER & DIFF. PROBE READS Ø

1339	10.0	18.8	7.16	—	1.60
1343	15.0	18.8	7.20	—	1.54
1348	20.0	18.8	7.25		1.77

CONT.

21 AUG 01 CAFB WELL B DEWEES/TRUJILLO

LOUIS THINKS THE PACK RAT MAY HAVE FALLEN INTO WELL

TIME	VOLUME	TEMP	pH	COND.	D.O.
1252	25.0	18.8	7.31	—	2.20
1257	30.0	18.8	7.37	—	2.57
1301	35.0	18.7	7.37	—	2.50
1305	40.0	18.8	7.40	—	2.60

1310 COLLECT CAFB WELL B ENVIRONMENTAL SAMPLE
" " " BB DUPLICATE "

1320 ARRIVE AT CAFB-4 MEAS W/L W/STEEL TAPE
300.0 - 4.33 = 295.67

TIME	VOLUME	TEMP	pH	COND.	D.O.	
1325	<1.0	19.3	7.56	—	2.88	
1330	5.0	18.8	8.19	—	2.93	
1334	10.0	18.7	7.88	—	3.06	
1340	15.0	18.8	8.05	—	3.07	CHANGE NITROGEN
1345	20.0	18.7	8.25	—	3.06	
1351	25.0	18.7	8.17	—	3.03	
1356	30.0	18.8	8.15	—	3.01	
1401	35.0	18.8	8.08	—	3.02	
1406	40.0	18.7	8.07	—	3.03	

1410 COLLECT CAFB-4 ENVIRONMENTAL SAMPLE

22 AUG 01 CAFB DEWEES/TRUJILLO

0820 ARRIVE AT CAFB-C MEAS W/L 304.0-0.96=303.04
CALIBRATE METERS
PH METER ORION MDL 230A S/N 9150
PH BUFFER 7.0 & 10.01 SLOPE 101.4
COND MTR MDL 135 S/N 1348625 744 COND

TIME	VOLUME	TEMP.	PH	COND	D.O.
0915	<5.0	17.3	7.45	532	1.50
0923	10.0	18.8	7.52	519	1.31
0928	15.0	18.7	7.47	519	1.42
0933	20.0	18.6	7.75	515	1.34
0937	25.0	18.6	8.24	516	1.32
0941	30.0	18.7	8.51	517	1.31 - CHANGE NITROGEN CYL.
0947	35.0	18.8	8.68	519	1.30
0952	40.0	18.7	8.97	516	1.28

IRRIG. WELL <100' SOUTH PUMPING UPON ARRIVAL
CONDUCTANCE TAKEN FROM THE BUCKET, PROBE TOO SMALL TO FIT IN FLOW-THRU

0955 COLLECT CAFB-C ENV. SAMPLE

22 AUG 01 CAFB-D DEWEES | TRUJILLO

1005 ARRIVE CAFB-D MEAS. W/L W/STEEL TAPE
330.0 - 34.12 = 295.88 BELOW HANGER

TIME	VOLUME	TEMP.	pH	COND	D.O.
1012	<1.0	19.1	8.87	502	3.10
1016	5.0	18.5	8.77	509	2.45
1021	10.0	18.5	8.95	513	2.40
1025	15.0	18.5	9.08	512	2.38
1029	20.0	18.5	9.15	513	2.35
1033	25.0	18.5	9.21	513	2.28
1037	30.0	18.5	9.39	514	2.25
1042	35.0	18.5	9.48	514	2.20
1046	40.0	18.5	9.66	514	2.18

pH METER QUESTIONABLE, BUT OTHERS DON'T SEEM TO BE WORK EITHER.

1050 COLLECT CAFB-D ENVIRONMENTAL SAMPLE

1105 ARRIVE AT CAFB-Q MEAS. W/L W/STEEL TAPE
295.0 - 7.05 = 287.95
MEAS W/L AT ~~WELL~~ CAFB-A W/STEEL TAPE
300.0 - 12.10 = 287.90 BELOW HANGER

TIME	VOLUME	TEMP	pH	COND.	D.O.
1114	<1.0	20.4	9.71	672	3.09
1118	5.0	18.9	9.53	674	3.47

CONT

22 AUG 01 CAFB DEWEES / TRUJILLO

TIME	VOLUME	TEMP	pH	COND.	D.O.	
1123	10.0	18.8	9.50	675	3.51	CHANGE NITROGEN CYL
1130	15.0	18.8	9.54	683	3.45	
1135	20.0	18.7	9.54	675	3.25	
1140	25.0	18.7	9.50	673	3.37	
1144	30.0	18.7	9.47	675	3.41	
1149	35.0	18.7	9.45	673	3.46	
1154	40.0	18.7	9.43	673	3.48	

1200 COLLECT CAFB-Q ENVIRONMENTAL SAMPLE

SAMPLING COMPLETE