CAFB 03

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

Mr. Robert S. Pyeatt
Deputy Base Civil Engineer
506 N DL Ingram Blvd
Cannon AFB NM 88103-5003

JUN 2003

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 CY 2002 groundwater monitoring and sampling reports as follows: the semi-annual report for Monitoring Wells (MW) B, C, D, Q, S, T and U at Landfill No. 5 (SWMU 113) and the annual report for Monitoring Wells E, F, G and H at the Sewage Lagoons (SWMU 101) at Cannon Air Force Base taken in March 2002. 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 EPA groundwater Maximum Contaminant Levels (MCLs) 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 MCL goal for drinking water in wells MW-E and MW-H at the sewage lagoons during the March sampling event, but the level at MW-F decreased to below the MCL. The elevated lead levels consistent with previous sampling and concentrations are decreasing over time. Pesticides were not detected in MW-F during the August 2002 sampling event indicating that the previous detection of analytes was an anomaly caused either by the crop duster observed in the area during the 2001 sampling or the installation of a new pump-hose system prior to the 2001 sampling event. At MW-D in Landfill No. 5, trichloroethene was detected, but well below the EPA MCL drinking-water standard. Again, this reading was consistent with previous sampling at this well. There was no detection of sulfides at MW-S in 2002 indicating that the 2001 detection may have been a laboratory error since the associated trip blank also detected this analyte at a similar level.

The results of the CY 2002 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. Peter P. Zamie at (505)784-4639.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or person who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely

ROBERT S. PYEATT, GS-13

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

10/1/2002

ENTERED

Cannon Air Force Base, New Mexico

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

Analytical Results of Samples Collected March 12-14, 2002

Prepared for

United States Air Force Air Combat Command
Cannon Air Force Base

October 2002

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, F, G, and H for samples collected March 14, 2002, 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 12-13, 2002, at Landfill 5, Cannon Air Force Base, New Mexico 9

Monitoring well identification reports 13

Monitoring well semi-annual and annual sampling reports 24

APPENDIX I

Analytical Results from Severn Trent Services Laboratory for Ground-Water Samples Collected March 12, 2002

Severn Trent Services Report No. D2C130228 (CAFB-D and Q) I-1

Exective summary (Detection Highlights) I-6

Volatile organics I-11

Semivolatile organics I-23

Page

APPENDIX I--Continued

Analytical Results from Severn Trent Services Laboratory for Ground-Water Samples Collected March 12, 2002

Pesticides and PCB's I-38

Herbicides I-44

Dioxins and Furans I-47

Polynuclear aromatic hydrocarbons I-50

Total metals I-53

General chemistry (perchlorate) I-59

APPENDIX II

Analytical Results from Severn Trent Services Laboratory for Ground-Water Samples Collected March 13, 2002

Severn Trent Services Report No. D2C140285 (CAFB-B, C, S, T, and U) II-1

Executive summary (Detection Highlights) II-4

Volatile organics II-10

Semivolatile organics II-28

Pesticides and PCB's II-58

Herbicides II-68

Dioxins and Furans II-74

Polynuclear aromatic hydrocarbons II-79

Page

APPENDIX II--Continued

Analytical Results from Severn Trent Services Laboratory for Ground-Water Samples Collected March 13, 2002

Total metals..... II-84

General chemistry (perchlorate)..... II-94

APPENDIX III

Analytical Results from Severn Trent Services Laboratory for Ground-Water Samples Collected March 14, 2002

Severn Trent Services Report No. D2C150182 (CAFB-E, F, G, and H)..... III-1

Executive summary (Detection Highlights)..... III-6

Volatile organics..... III-12

Pesticides and PCB's..... III-30

Total metals..... III-40

General chemistry (Nitrate and perchlorate)..... III-50

APPENDIX IV

Laboratory Quality Assurance / Quality Control Results

Laboratory data validation checklist for D2C130228, D2C140285 and D2C150182..... IV-1

Page

APPENDIX IV--Continued

Laboratory Quality Assurance / Quality Control Results

DODEC laboratory data review worksheet for D2C130228, D2C140285, and D2C150182 ..... IV-46

Severn Trent Report No. D2C130228 quality control summary IV-58

U.S. Geological Survey, Water Resources Division, New Mexico District analytical request / chain of custody IV-130

Severn Trent sample receiving checklist IV-135

Severn Trent No. D2C140285 quality control summary IV-136

U.S. Geological Survey, Water Resources Division, New Mexico District analytical request / chain of custody IV-215

Severn Trent sample receiving checklist IV-220

Severn Trent No. D2C150182 quality control summary IV-221

U.S. Geological Survey, Water Resources Division, New Mexico District analytical request / chain of custody IV-263

Severn Trent sample receiving checklists IV-265

APPENDIX V

Field Data

Field methods V-1

Sample container and preservation requirements V-2

Field notes V-4

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 four wells around the sewage lagoons and seven wells around Landfill 5, CAFB, on March 12-14, 2002.

The monitoring wells sampled at the sewage lagoons are upgradient well E and downgradient wells F, G and H. Downgradient well F at the sewage lagoons is also normally sampled at this time. Wells E, F, 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. All four wells around the sewage lagoons were 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). All seven wells around Landfill 5 were also sampled for perchlorate by method EPA 314.0.

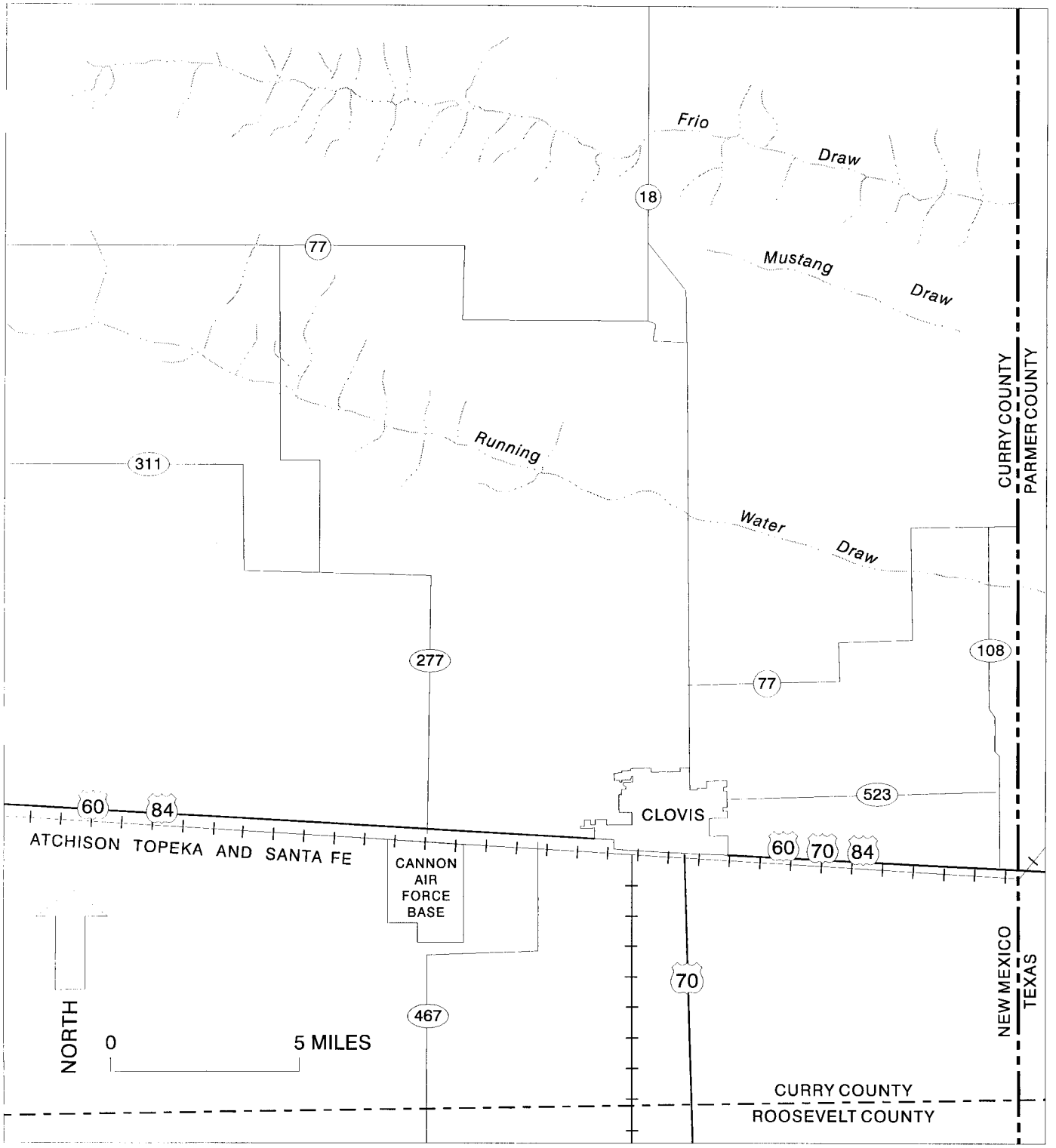
Concentrations of analytes detected in ground water samples from wells at the sewage lagoons are presented in table 1. Only those concentrations detected above the reporting limits are discussed in this summary. Barium was detected in water samples from wells E, F, G, and H at concentrations of 52.8, 39.9, 32.4 and 36.9 μg/L, respectively. The USEPA MCL standard for barium is 2,000 μg/L. Chromium was not detected in any of the water samples from the four wells around the sewage lagoons. Lead was detected in a water sample from well E and H, at concentrations of 6.7 and 2.7 μg/L, respectively. The USEPA maximum contaminant level goal (SMCLG) standard for lead is zero. Selenium was detected in water samples from wells E, F, G, and H at concentrations of 5.3, 6.7, 5.9 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 wells G and H at a concentration of 20.2 and 81.1 μg/L, respectively. The USEPA SMCL standard for zinc is 5,000 μg/L. Sulfate was detected in all four wells at concentrations ranging from 85.2 μg/L (well E) to 170 μg/L (well G). The USEPA MCL standard for sulfate is 500,000 μg/L.

Note: On August 21, 2001 well F had it's pump-hose system reinstalled and was then sampled. An unusual detection of low concentrations of pesticides was discovered in the ground water sample. This must have been a short term introduction of these contaminantes, they did not appear in the ground water samples collected on March 14, 2002.

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 S at concentration of 1.6 μg/L. 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 25.1 μg/L (well B) to 90.3 μg/L (well D). Iron was detected in wells Q and T at concentrations of 290 μg/L and 115 μg/L, respectively. Manganese was detected in the water samples from well Q, at a concentration of 18.0 μg/L. 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 5.9 μg/L (well S) to 7.8 μg/L (well T). Nickel was detected in the water samples from well Q, at a concentration of 43.0 μg/L. The

USEPA SMCL standard for nickel is 100 μg/L. Chromium, lead, or zinc were not detected in any of the samples collected from wells around Landfill 5.

As part of the quality assurance and quality control (QA/QC) procedures for the sewage lagoons and Landfill 5 sites, three trip blanks, two 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.



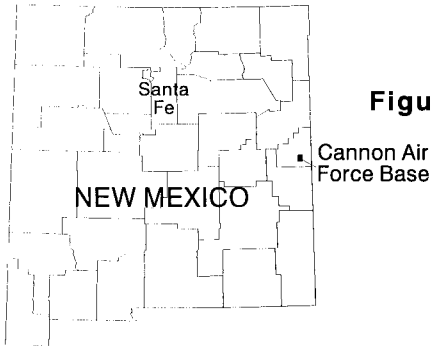


Figure 1. Location of Cannon Air Force Base, New Mexico.

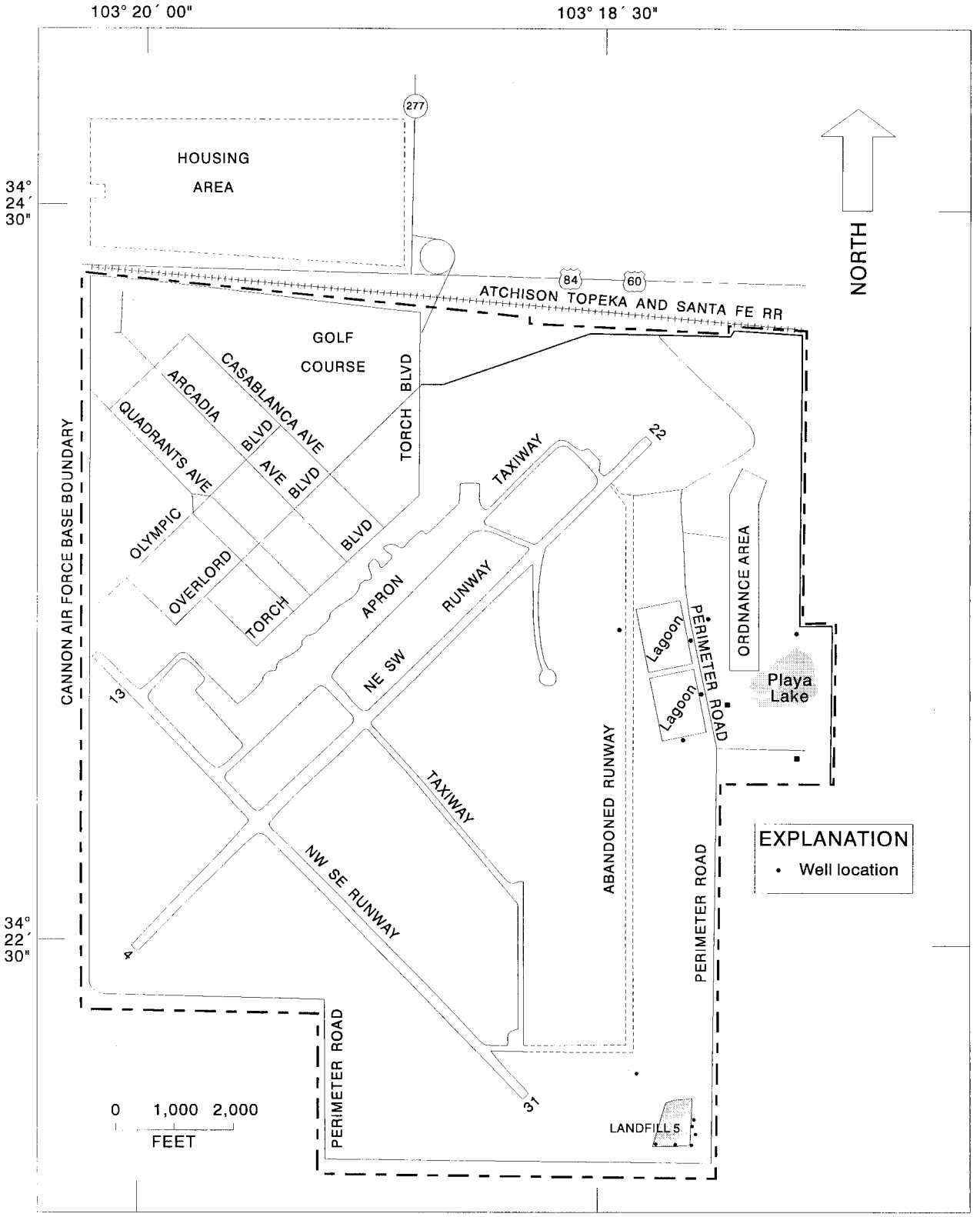


Figure 2. Cannon Air Force Base and location of sewage lagoons and Landfill 5.

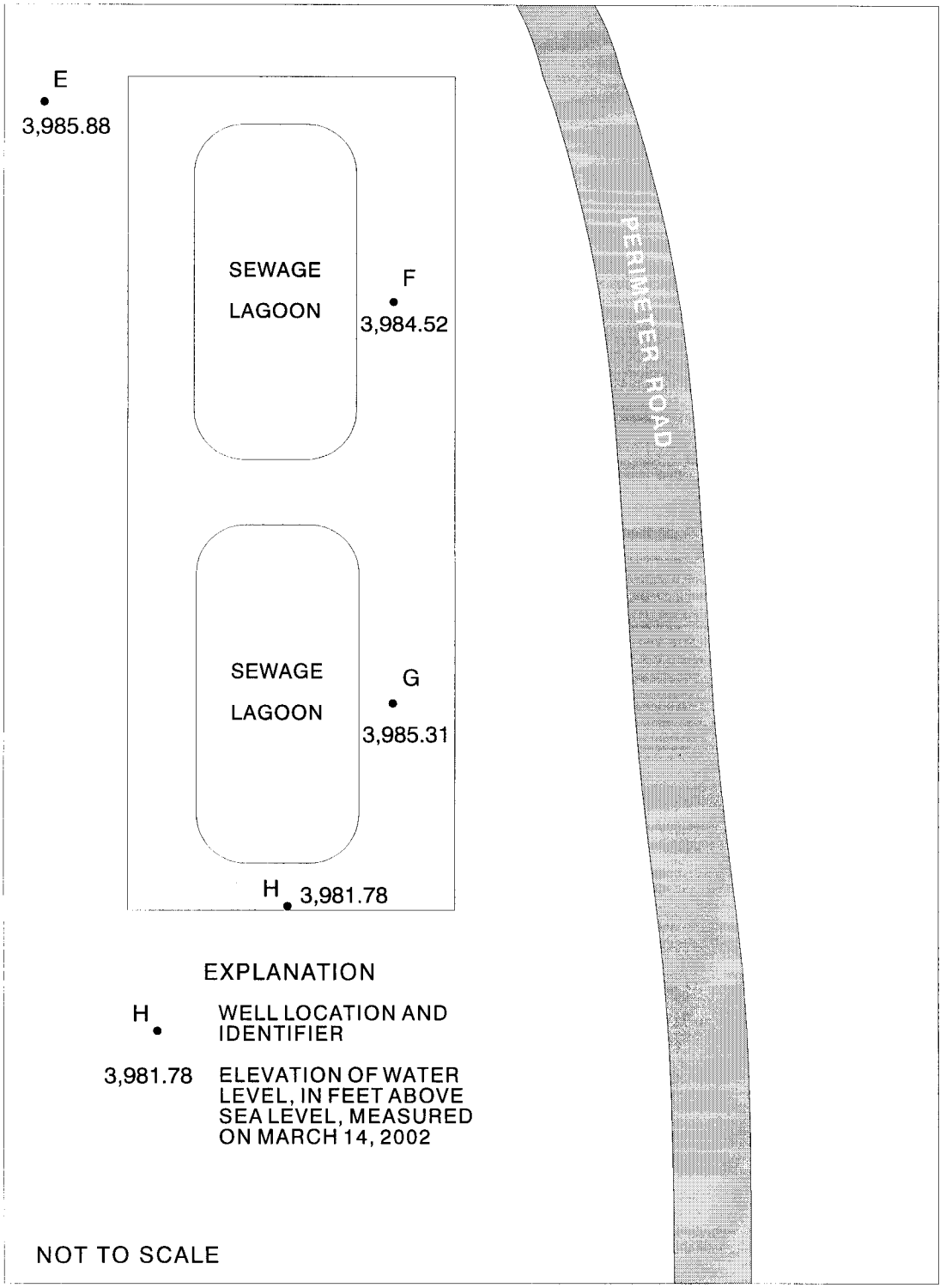


Figure 3. Location of monitoring wells around the sewage lagoons.

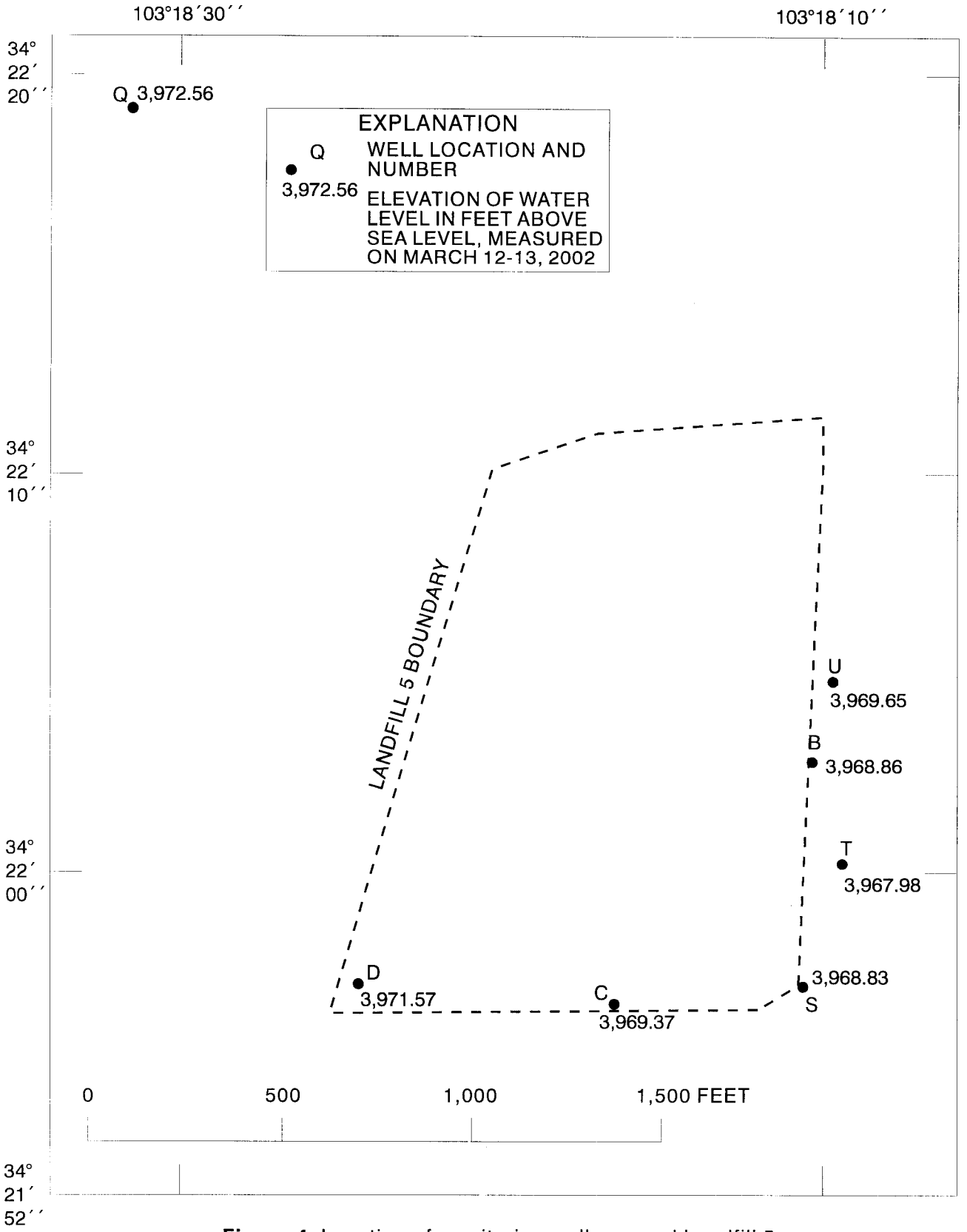


Figure 4. Location of monitoring wells around Landfill 5.

Table 1.--Summary of concentrations of analytes in ground water from monitoring wells E, F, G, and H for samples collected March 14, 2002 at the sewage lagoons, Cannon Air Force Base, New Mexico

[RL, reporting limit; µg/L, micrograms per liter; ND, not detected; B & J, 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 3-14-2002		F/CAFB-F 3-14-2002		G/CAFB-G 3-14-2002		H/CAFB-H 3-14-2002	
Analytes and Methods	Result	RL	Result	RL	Result	RL	Result	RL
Appendix-IX Volatile organics, SW8260B, (µg/L)								
Tetrachloroethene	2.1	1.0	ND	1.0	ND	1.0	ND	1.0
Trichloroethene	ND	1.0	ND	1.0	ND	1.0	ND	1.0
Metals, Total (µg/L)								
Aluminum SW6010B	ND	100	ND	100	71.8 B	100	ND	100
Arsenic SW6020	2.8 B	5.0	2.9	5.0	3.1 B	5.0	3.3 B	5.0
Barium SW6010B	52.8	10.0	39.9	10.0	32.4	10.0	36.9	10.0
Cadmium SW6020	ND	1.0	0.37 B	1.0	0.032 B	1.0	0.03 B	1.0
Calcium SW6010B	50,000	200	49,600	200	58,100	200	43,200	200
Chromium SW6020	6.9 J	1.0	2.0 J	1.0	3.6 J	1.0	5.7 J	1.0
Copper SW6010B	ND	20.0	ND	20.0	ND	20.0	5.8 B	20.0
Iron SW6010B	93.0 B	100	44.0 B	100	83.8 B	100	310	100
Lead SW6020	6.7	1.0	0.45 B	1.0	0.51 B	1.0	2.7	1.0
Magnesium SW6010B	44,600	200	45,500	200	54,500	200	39,200	200
Manganese SW6010B	5.2 B	10.0	1.2 B	10.0	3.3 B	10.0	10.6	10.0
Nickel SW6010B	ND	40.0	ND	40.0	ND	40.0	9.5 B	40.0
Potassium SW6010B	6,900	3,000	7,200	3,000	7,320	3,000	6,800	3,000
Selenium SW6020	5.3	5.0	6.7	5.0	5.9	5.0	6.7	5.0
Sodium SW6010B	59,500	5,000	49,300	5,000	52,900	5,000	53,300	5,000
Vanadium SW6010B	18.4	10.0	17.4	10.0	18.0	10.0	20.1	10.0
Zinc SW6010B	ND	20.0	14.7 B	20.0	20.2	20.0	81.1	20.0
General Inorganics (mg/L)								
Sulfate MCAWW300.0A	85.2 Q	25.0	132 Q	25.0	170 Q	25.0	129 Q	25.0
Nitrate MCAWW353.2	1.6	0.10	1.2	0.10	4.2	0.10	1.8	0.10
Total Dissolved Solids,	549	10.0	525	10.0	624	10.0	478	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 12-13, 2002, 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 3-13-2002		C/CAFB-C 3-13-2002		D/CAFB-D 3-12-2002		D/CAFB-D-1(Dup) 3-12-2002		Q/CAFB-Q 3-12-2002	
Analytes and Methods	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Appendix-IX Volatiles, SW8260B (µg/L)										
Chloromethane	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0
Dichlorodifluoroethane	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0
Trichloroethene	ND	1.0	ND	1.0	0.83 J	1.0	0.81	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	ND	100	ND	100	ND	100	ND	100	ND	100
Arsenic, SW6010	4.6 B	5.0	5.8	5.0	4.6 B	5.0	4.5 B	5.0	4.7 B	5.0
Barium, SW6010B	25.1	10.0	36.4	10.0	90.3	10.0	83.2	10.0	28.1	10.0
Calcium, SW6010B	36,100	200	28,800	200	32,300	200	31,800	200	41,700	200
Chromium, SW6020	1.9 J	1.0	1.6 J	1.0	1.1 J	1.0	1.0	1.0	16.6 J	1.0
Copper, SW6010B	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0
Iron, SW6010B	43.0 B	100	17.0 B	100	26.4 B	100	24.1 B	100	290	100
Lead, SW6020	0.22 B	1.0	ND	1.0	ND	1.0	ND	1.0	0.18 B	1.0
Magnesium, SW6010B	35,200	200	29,000	200	32,800	200	32,200	200	39,900	200
Manganese, SW6010B	2.0 B	10.0	0.95 B	10.0	1.2 B	10.0	1.3 B	10.0	18.0	10.0
Molybdenium, SW6010B	4.1 B	20.0	4.7 B	20.0	3.0 B	20.0	3.5 B	20.0	4.7 B	20.0
Nickel, SW6010B	ND	40.0	ND	40.0	ND	40.0	ND	40.0	43.0	40.0
Potassium, SW6010B	5,930	3000	5,600	3000	6,110	3000	5,930	3000	6,090	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 12-13, 2002, at Landfill 5, Cannon Air Force Base, New Mexico

Well/sample ID: Date sampled:	B/CAFB-B 3-13-2002		C/CAFB-C 3-13-2002		D/CAFB-D 3-12-20002		D/CAFB-D-1(Dup) 3-12-2002		Q/CAFB-Q 3-12-2002	
Analytes and Methods	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Metals, Total (µg/L)										
Selenium, SW6020	6.2	5.0	0.86 B	5.0	0.21 B	5.0	0.24 B	5.0	6.6	5.0
Sodium, SW6010B	53,400	5,000	48,000	5,000	50,800	5,000	50,000	5,000	49,800	5,000
Vanadium, SW6010B	22.7	10.0	38.9	10.0	33.4	10.0	33.1	10.0	24.2	10.0
Zinc, SW6010B	ND	20.0	ND	20.0	8.0 B	20.0	ND	20.0	3.3 B	20.0
General Chemistry										
Perchlorate (µg/L), EPA314	ND	20.0	ND	20.0	ND	20.0	ND	20.0	ND	20.0
Total Organic Carbon (mg/L), SW9060	0.38 B,J	1.0	0.62 B,J	1.0	ND	1.0	ND	1.0	0.69 B	1.0
Total Cyanide (mg/L), SW846/9012A	0.0081 B	0.010	0.0059 B	0.010	0.0065 B	0.010	0.0068 B	0.010	0.0060 B	0.010
Total Organic Halogens (µg/L), SW846/9020B	ND	30.0	ND	30.0	4.5 B	30.0	ND	30.0	ND	30.0
Total Sulfide (mg/L), SW9030B/9034	ND	4.0	ND	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 12-13, 2002, 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:	S/CAFB-S 3-13-2002		T/CAFB-T 3-13-2002		U/CAFB-U 3-13-2002	
Analytes and Methods	Result	RL	Result	RL	Result	RL
Appendix-IX Volatiles, SW8260B (µg/L)						
Chloromethane	0.43 J	2.0	ND	2.0	ND	2.0
Dichlorodifluoroethane	ND	1.0	ND	1.0	ND	1.0
Trichloroethene	1.6	1.0	ND	1.0	ND	1.0
Trichlorofluoromethane	ND	1.0	ND	1.0	ND	1.0
Metals, Total (µg/L)						
Aluminum, SW6010B	ND	100	55.8 B	100	20.4 B	100
Arsenic, SW6010	4.5 B	5.0	4.7 B	5.0	4.3 B	5.0
Barium, SW6010B	31.7	10.0	33.5	10.0	26.9	10.0
Calcium, SW6010B	44,700	200	46,900	200	44,200	200
Chromium, SW6020	1.8	1.0	2.5 J	1.0	1.8 J	1.0
Copper, SW6010B	ND	1.0	ND	1.0	ND	1.0
Iron, SW6010B	28.1	100	115	100	20.9 B	100
Lead, SW6020	0.15 B	1.0	ND	1.0	ND	1.0
Magnesium, SW6010B	42,900	200	44,600	200	39,900	200
Manganese, SW6010B	3.6 B	10.0	4.2 B	10.0	2.1 B	10.0
Molybdenium, SW6010B	5.1 B	20.0	3.8 B	20.0	4.7 B	20.0
Nickel, SW6010B	ND	40.0	ND	40.0	ND	40.0
Potassium, SW6010B	6,590	3000	6,800	3000	6,550	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 12-13, 2002, at Landfill 5, Cannon Air Force Base, New Mexico

Well/sample ID: Date sampled:	S/CAFB-S 3-13-2002		T/CAFB-T 3-13-2002		U/CAFB-U 3-13-2002	
Analytes and Methods	Result	RL	Result	RL	Result	RL
Metals, Total (µg/L)						
Selenium, SW6020	5.9	5.0	7.8	5.0	6.3	5.0
Sodium, SW6010B	51,600	5,000	5,700	5,000	55,700	5,000
Vanadium, SW6010B	25.3	10.0	24.8	10.0	23.8	10.0
Zinc, SW6010B	18.0 B	20.0	12.0 B	20.0	5.3 B	20.0
General Chemistry						
Perchlorate (µg/L), EPA314	ND	20.0	ND	20.0	ND	20.0
Total Organic Carbon (mg/L), SW9060	0.43 B	1.0	1.1 J	1.0	1.2 J	1.0
Total Cyanide (mg/L), SW846/9012A	0.0052 B	0.010	0.0056 B	0.010	0.0081 B	0.010
Total Organic Halogens (µg/L), SW846/9020B	ND	30.0	ND	30.0	ND	30.0
Total Sulfide (mg/L), SW9030B/9034	ND	4.0	ND	4.0	ND	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 10-15-02 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 10-15-02 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 10-15-02 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 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 10-15-02 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 10-15-02 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 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 10-15-02 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 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 10-15-02 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 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 10-15-02 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 10-15-02 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 10-15-02 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 10-15-02 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 38.1 gallons

DATE SAMPLED 03-13-2002 LABORATORY SAMPLE I.D.# D2C140285

TIME SAMPLED 1030 DATE RECEIVED BY LAB 03-14-2002

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3968.86	03-13-2002
Flow Rate	00059	gal/min	0.80	03-13-2002
Pump Period	72004	min.	44	03-13-2002
Volume Evacuated	73675	gal	35.0	03-13-2002
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.	8.09	N/A	03-13-2002	field electrometer
Specific Conductivity	00095	umhos/cm	762	N/A	03-13-2002	field electrometer
T.O.X.	70354	ug/L	ND	30.0	03-19-2002	SW9020B
T.O.C.	00680	mg/L	0.38 J	1.0	04-04-2002	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 36.8 gallons

DATE SAMPLED 03-13-2002 LABORATORY SAMPLE I.D.# D2C140285

TIME SAMPLED 0900 DATE RECEIVED BY LAB 03-14-2002

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3969.37	03-13-2002
Flow Rate	00059	gal/min	0.65	03-13-2002
Pump Period	72004	min.	46	03-13-2002
Volume Evacuated	73675	gal	30.0	03-13-2002
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.	8.13	N/A	03-13-2002	field electrometer
Specific Conductivity	00095	umhos/cm	563	N/A	03-13-2002	field electrometer
T.O.X.	70354	ug/L	ND	30.0	03-19-2002	SW9020B
T.O.C.	00680	mg/L	0.62 J	1.0	04-04-2002	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 35.1 gallons

DATE SAMPLED 03-12-2002 LABORATORY SAMPLE I.D.# D2C130228

TIME SAMPLED 1315 DATE RECEIVED BY LAB 03-12-2002

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3971.57	03-12-2002
Flow Rate	00059	gal/min	0.69	03-12-2002
Pump Period	72004	min.	58	03-12-2002
Volume Evacuated	73675	gal	40.0	03-12-2002
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.	7.83	N/A	03-12-2002	field electrometer
Specific Conductivity	00095	umhos/cm	582	N/A	03-12-2002	field electrometer
T.O.X.	70354	ug/L	4.5 B	30.0	03-19-2002	SW9020B
T.O.C.	00680	mg/L	ND	1.0	04-03-2002	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-E

WELL DEPTH 370.00 feet WELL CASING VOLUME 43.4 gallons

DATE SAMPLED 03-14-2002 LABORATORY SAMPLE I.D.# D2C150182

TIME SAMPLED 1300 DATE RECEIVED BY LAB 03-15-2002

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3985.88	03-14-2002
Flow Rate	00059	gal/min	0.86	03-14-2002
Pump Period	72004	min.	35.0	03-14-2002
Volume Evacuated	73675	gal	30.0	03-14-2002
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.	7.92	N/A	03-14-2002	field electrometer
Specific Conductivity	00095	umhos/cm	900	N/A	03-14-2002	field electrometer

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 44.8 gallons

DATE SAMPLED 03-14-2002 LABORATORY SAMPLE I.D.# D2C150182

TIME SAMPLED 0910 DATE RECEIVED BY LAB 03-15-2002

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3984.52	03-14-2002
Flow Rate	00059	gal/min	1.0	03-14-2002
Pump Period	72004	min.	60	03-14-2002
Volume Evacuated	73675	gal	60	03-14-2002
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.	7.93	N/A	03-14-2002	field electrometer
Specific Conductivity	00095	umhos/cm	826	N/A	03-14-2002	field electrometer

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-G

WELL DEPTH 372.09 feet WELL CASING VOLUME 45.0 gallons

DATE SAMPLED 03-14-2002 LABORATORY SAMPLE I.D.# D2C150182

TIME SAMPLED 1040 DATE RECEIVED BY LAB 03-15-2002

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3985.31	03-14-2002
Flow Rate	00059	gal/min	0.85	03-14-2002
Pump Period	72004	min.	41	03-14-2002
Volume Evacuated	73675	gal	35.0	03-14-2002
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.	7.75	N/A	03-14-2002	field electrometer
Specific Conductivity	00095	umhos/cm	944	N/A	03-14-2002	field electrometer

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-H

WELL DEPTH 375.00 feet WELL CASING VOLUME 46.8 gallons

DATE SAMPLED 03-14-2002 LABORATORY SAMPLE I.D.# D2C150182

TIME SAMPLED 1200 DATE RECEIVED BY LAB 03-15-2002

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3981.78	03-14-2002
Flow Rate	00059	gal/min	0.90	03-14-2002
Pump Period	72004	min.	39	03-14-2002
Volume Evacuated	73675	gal	35.0	03-14-2002
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.	7.93	N/A	03-14-2002	field electrometer
Specific Conductivity	00095	umhos/cm	743	N/A	03-14-2002	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 1.4 gallons

DATE SAMPLED 03-12-2002 LABORATORY SAMPLE I.D.# D2C130228

TIME SAMPLED 1100 DATE RECEIVED BY LAB 03-12-2002

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3972.56	03-12-2002
Flow Rate	00059	gal/min	0.87	03-12-2002
Pump Period	72004	min.	46	03-12-2002
Volume Evacuated	73675	gal	40	03-12-2002
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.	7.99	N/A	03-12-2002	field electrometer
Specific Conductivity	00095	umhos/cm	763	N/A	03-12-2002	field electrometer
T.O.X.	70354	ug/L	ND	30.0	03-19-2002	SW9020B
T.O.C.	00680	mg/L	0.69 B	1.0	04-03-2002	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 38.5 gallons

DATE SAMPLED 03-13-2002 LABORATORY SAMPLE I.D.# D2C140285

TIME SAMPLED 1430 DATE RECEIVED BY LAB 03-14-2002

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3968.83	03-13-2002
Flow Rate	00059	gal/min	0.85	03-13-2002
Pump Period	72004	min.	41	03-13-2002
Volume Evacuated	73675	gal	35.0	03-13-2002
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.	8.12	N/A	03-13-2002	field electrometer
Specific Conductivity	00095	umhos/cm	775	N/A	03-13-2002	field electrometer
T.O.X.	70354	ug/L	ND	30.0	03-19-2002	SW9020B
T.O.C.	00680	mg/L	0.43 J	1.0	04-04-2002	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 03-13-2002 LABORATORY SAMPLE I.D.# D2C140285

TIME SAMPLED 1315 DATE RECEIVED BY LAB 03-13-2002

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3967.98	03-13-2002
Flow Rate	00059	gal/min	0.77	03-13-2002
Pump Period	72004	min.	39	03-13-2002
Volume Evacuated	73675	gal	30	03-13-2002
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.	8.10	N/A	03-13-2002	field electrometer
Specific Conductivity	00095	umhos/cm	845	N/A	03-13-2002	field electrometer
T.O.X.	70354	ug/L	ND	30.0	03-19-2002	SW9020B
T.O.C.	00680	mg/L	1.1 J	1.0	04-04-2002	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 40.3 gallons

DATE SAMPLED 03-13-2002 LABORATORY SAMPLE I.D.# D2C140285

TIME SAMPLED 1150 DATE RECEIVED BY LAB 03-14-2002

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3969.65	03-13-2002
Flow Rate	00059	gal/min	0.88	03-13-2002
Pump Period	72004	min.	40	03-13-2002
Volume Evacuated	73675	gal	35	03-13-2002
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.	8.19	N/A	03-13-2002	field electrometer
Specific Conductivity	00095	umhos/cm	773	N/A	03-13-2002	field electrometer
T.O.X.	70354	ug/L	ND	30.0	03-19-2002	SW9020B
T.O.C.	00680	mg/L	1.2 J	1.0	04-04-2002	SW9060

SIGNATURE: Fredrick E. Gebhardt

NAME (PRINTED): Fredrick E. Gebhardt

APPENDIX I

Analytical Results from Sevrn Trent Services Laboratory
for Ground-Water Samples Collected March 12, 2002
Report # D2C130228

SEVERN TRENT SERVICES

STL Denver

ANALYTICAL REPORT

Cannon AFB

Lot #: D2C130228

Richard Daddow

U.S. Geological Survey

STL DENVER

Karen Kuoppala
Project Manager

April 10, 2002

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.)*	139
• 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 D2C130228

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 with any exceptions noted below. 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.

This report contains the results for the three samples and one trip blank received under chain of custody on March 13, 2002.

Sample Receiving
The samples were received at a temperature of 3.7°C, 5.7°C, 4.7°C, 5.6°C, and 5.4°C.

One of the three voa vials for sample CAFB-D were received broken. There remained enough sample volume to proceed with all analyses.

Sample aliquots were sent to STL Sacramento for dioxins/furans analyses. All other analyses were performed at STL Denver.

GC/MS Volatile Organics, SW846 8260B
The MS/MSD performed on sample D2C130228-001 was in control for all recoveries and RPDs.

GCMS Semi-Volatile Organics, SW846 8270C
The MS/MSD performed on sample D2C130228-001 was in control for all recoveries and RPDs.

GC Semi-Volatile Organics – Pesticides, SW846 8081A
The MS/MSD performed on sample D2C130228-001 was in control for all recoveries and RPDs.

GC Semi-Volatile Organics – PCBs, SW846 8082
The MS/MSD performed on sample D2C130228-001 was in control for all recoveries and RPDs.

Continuing Calibration Verifications (CCVs) associated with samples D2C130228-001, 002, 003, and the MS/MSD performed on 001 demonstrated percent differences below –15% for Aroclor 1016. The average percent differences of all compounds in the CCVs were less than ±15%; therefore the CCVs met all criteria for the method.

GC Semi-Volatile Organics – Herbicides, SW846 8151A

The MS/MSD performed on sample D2C130228-001 was in control for all recoveries and RPDs.

Continuing Calibration Verifications (CCVs) associated with samples D2C130228-001 through 003 demonstrated percent differences greater than +15% for dinoseb and the surrogate DCAA. This may indicate a high bias in the sample results. Dinoseb was not detected in the associated samples. And the surrogate DCAA was recovered within control limits in all samples. The average percent differences of all compounds in the CCVs were within control limits; therefore the CCVs met all criteria for the method.

HRGC/HRMS – Dioxins/Furans, SW846 8280A

Due to an oversight in the laboratory a LCSD was not analyzed. The LCS was in control.

The MS/MSD performed on sample D2C130228-001 was in control for all recoveries and RPDs.

HPLC – PAHs, SW846 8310

The MS/MSD performed on sample D2C130228-001 was in control for all recoveries and RPDs.

Total Metals, SW846 6010b, 6020, 7470A

Chromium was detected in the method blank at a concentration below the reporting limit, but above the method detection limit. Associated positive sample results are flagged "J".

The method 6010B MSD performed on sample D2C130228-001 demonstrated recoveries below control limits for calcium, magnesium, sodium, vanadium, and molybdenum. The MS and all RPD values were in control.

The method 6020 and 7470A MS/MSDs performed on sample D2C130228-001 were in control.

General Chemistry, SW846 9012A, 9060, 9030B/9034, EPA 314.0

The method 9012A, 314.0, and 9020B MS/MSDs performed on sample D2C130228-001 were in control.

The method 9060 MS/MSD performed on sample D2C130228-001 demonstrated recoveries above control limits for TOC.

The method 9030B/9034 MSD performed on sample D2C130228-001 demonstrated a recovery below control limits for total sulfide. The MS was in control.

Quality Control Definitions of Terms

Term	Definition
Batch	A set of up to 20 field samples plus associated laboratory QC samples that are similar in composition (matrix) and that are processed within the same time period with the same reagent and standard lots.
Laboratory Control Sample and Laboratory Control Sample Duplicate (LCS/LCSD)	A volume of regent water for aqueous samples or a contaminant-free solid matrix (Ottawa sand) for soil and sediment samples which is spiked with known amounts of representative target analytes and required surrogates. A LCS is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects. An LCSD is a second Laboratory Control Sample.
Matrix Spike and Matrix Spike Duplicate (MS/MSD)	A filed sample fortified with known quantities of target analytes that are also added to the LCS. Matrix spike duplicate is a second matrix spike sample. MSs/MSDs are carried throughout he entire analytical process and are used to determine sample matrix effect on accuracy of the measurement system. The accuracy and precision estimated using MS/MSD is only representative of the precision of the sample that was spiked.
Method Blank	A sample composed of all the reagents (in the same quantities) in reagent water carried through the entire analytical process. The method blank is used to monitor the level of contamination introduced during sample preparation steps.
Surrogate	Organic constituents not expected to be detected in environmental media and are added to every sample and QC at a known concentration. Surrogates are used to determine the efficiency of the sample preparation and the analytical process.
Sample Duplicate	A second aliquot of an environmental sample, taken form the same sample container when possible, that is processed independently with the first sample aliquot. The results are used to assess the effect of the sample matrix on the precision of the analytical process. The precision estimated using this sample is not necessarily representative to the precision for other samples in the batch.
Method Detection Limit "MDL"	The method detection limit is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from replicate analyses of low level standards in a typical representative matrix.
Reporting Limit "RL"	The STL reporting limit is normally the lowest level at which measurements become quantitatively meaningful, ie., the quantitation limit, which is approximately three times the MDL. Some projects require RLs that are less than the quantitation limit to achieve particular maximum contaminant levels (MCLs) or relevant and appropriate requirements (ARARs), but RLs cannot be less than the statistically determined MDL.

Quality Control Definitions of Qualifiers

Qualifier	Definition
*	Surrogate or Relative Percent Difference (RPD) is outside control limits.
a	Spiked analyte recovery is outside control limits.
B	Organics: Method blank contamination. The associated method blank contains the target analyte at a reportable level. Inorganics: Estimated result. Result is less than the RL
DIL	The concentration is estimated or not reported due to dilution.
E	Estimated result. Result concentrations exceeds the calibration range.
G	Inorganics: Elevated reporting limit. The reporting limit is elevated due to matrix interference.
J	Organics: Estimated result. Result is less than RL Inorganics: Method blank contamination. The associated method blank contains the target analyte at a reportable level.
L	Serial dilution of a digestate in the analytical batch indicates that physical and chemical interferences are present
N	Spiked analyte recovery is outside stated control limits.
NC	The recovery and/or RPD were not calculated.
ND	Non-detect
p	Relative percent difference (RPD) is outside stated control limits.
Q	Elevated reporting limit. The reporting limit is elevated due to high analyte levels.
Wa	Post digestion spike recovery fell between 40-85% due to matrix interference.
Wb	Post digestion spike recovery fell between 115-150% due to matrix interference.
IC	Diluted due to high inorganic chloride.

EXECUTIVE SUMMARY - Detection Highlights

D2C130228

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
CAFB-D 03/12/02 13:15 001				
Arsenic	4.6 B	5.0	ug/L	SW846 6020
Chromium	1.1 J	1.0	ug/L	SW846 6020
Selenium	0.21 B	5.0	ug/L	SW846 6020
Molybdenum	3.0 B	20.0	ug/L	SW846 6010B
Barium	90.3	10.0	ug/L	SW846 6010B
Calcium	32300	200	ug/L	SW846 6010B
Iron	26.4 B	100	ug/L	SW846 6010B
Potassium	6110	3000	ug/L	SW846 6010B
Magnesium	32800	200	ug/L	SW846 6010B
Manganese	1.2 B	10.0	ug/L	SW846 6010B
Sodium	50800	5000	ug/L	SW846 6010B
Vanadium	33.4	10.0	ug/L	SW846 6010B
Trichloroethene	0.83 J	1.0	ug/L	SW846 8260B
Total Organic Halogens	4.5 B	30.0	ug/L	SW846 9020B
Cyanide, Total	0.0065 B	0.010	mg/L	SW846 9012A
CAFB-D-1 03/12/02 13:20 002				
Arsenic	4.5 B	5.0	ug/L	SW846 6020
Chromium	1.0 J	1.0	ug/L	SW846 6020
Selenium	0.24 B	5.0	ug/L	SW846 6020
Molybdenum	3.5 B	20.0	ug/L	SW846 6010B
Barium	83.2	10.0	ug/L	SW846 6010B
Calcium	31800	200	ug/L	SW846 6010B
Iron	24.1 B	100	ug/L	SW846 6010B
Potassium	5930	3000	ug/L	SW846 6010B
Magnesium	32200	200	ug/L	SW846 6010B
Manganese	1.3 B	10.0	ug/L	SW846 6010B
Sodium	50000	5000	ug/L	SW846 6010B
Vanadium	33.1	10.0	ug/L	SW846 6010B
Trichloroethene	0.87 J	1.0	ug/L	SW846 8260B
Cyanide, Total	0.0068 B	0.010	mg/L	SW846 9012A
CAFB-Q 03/12/02 11:10 003				
Arsenic	4.7 B	5.0	ug/L	SW846 6020
Chromium	16.6 J	1.0	ug/L	SW846 6020
Lead	0.18 B	1.0	ug/L	SW846 6020
Selenium	6.6	5.0	ug/L	SW846 6020
Molybdenum	4.7 B	20.0	ug/L	SW846 6010B
Barium	28.1	10.0	ug/L	SW846 6010B
Calcium	41700	200	ug/L	SW846 6010B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

D2C130228

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
CAFB-Q 03/12/02 11:10 003				
Iron	290	100	ug/L	SW846 6010B
Potassium	6090	3000	ug/L	SW846 6010B
Magnesium	39900	200	ug/L	SW846 6010B
Manganese	18.0	10.0	ug/L	SW846 6010B
Sodium	49800	5000	ug/L	SW846 6010B
Nickel	43.0	40.0	ug/L	SW846 6010B
Vanadium	24.2	10.0	ug/L	SW846 6010B
Zinc	3.3 B	20.0	ug/L	SW846 6010B
Total Organic Carbon	0.69 B	1.0	mg/L	SW846 9060
Cyanide, Total	0.0060 B	0.010	mg/L	SW846 9012A

METHODS SUMMARY

D2C130228

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

D2C130228

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	Roger Bain	018049
SW846 8151A	Sonya Dacar	011595
SW846 8260B	Mike Armstrong	002544
SW846 8270C	Judy Murray	016800
SW846 8280A	Mark Onishi	001984
SW846 8310	Sonya Dacar	011595
SW846 9012A	Ewa Kudla	001167
SW846 9020B	Duane Allee	001470
SW846 9030B/9034	Roger Winn	000597
SW846 9060	Dave Elkin	000901

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

D2C130228

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
EWCEN	001	CAFB-D	03/12/02	13:15
EWCE5	002	CAFB-D-1	03/12/02	13:20
EWCE6	003	CAFB-Q	03/12/02	11:10
EWCE7	004	CAFB-Q-TB	03/12/02	10:30

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-D

GC/MS Volatiles

Lot-Sample #...: D2C130228-001 **Work Order #...:** EWCEN1AA **Matrix.....:** WG
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02
Prep Date.....: 03/22/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2083130 **Analysis Time..:** 12:53
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

GC/MS Volatiles

Lot-Sample #...: D2C130228-001 **Work Order #...:** EWCEN1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	4.0	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	**0.83 J**	**1.0**	**ug/L**	**0.24**
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	93	(80 - 120)
1,2-Dichloroethane-d4	81	(72 - 127)
4-Bromofluorobenzene	93	(79 - 119)
Toluene-d8	104	(79 - 119)

NOTE(S):

J Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

CAFB-D

GC/MS Volatiles

Lot-Sample #: D2C130228-001 **Work Order #:** EWCEN1AA **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Silane, fluorotrimethyl-	420-56-4	3.32 J T2 M	5.0365	ug/L
Silanol, trimethyl-	1066-40-6	1.22 J T2 M	7.5617	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-1

GC/MS Volatiles

Lot-Sample #...: D2C130228-002 **Work Order #...:** EWCE51AM **Matrix.....:** WG
Date Sampled...: 03/12/02 13:20 **Date Received..:** 03/13/02
Prep Date.....: 03/22/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2083130 **Analysis Time..:** 14:08
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D-1

GC/MS Volatiles

Lot-Sample #...: D2C130228-002 **Work Order #...:** EWCE51AM **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	4.0	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	**0.87 J**	**1.0**	**ug/L**	**0.24**
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(80 - 120)
1,2-Dichloroethane-d4	89	(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

CAFB-D-1

GC/MS Volatiles

Lot-Sample #: D2C130228-002 **Work Order #:** EWCE51AM **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-Q

GC/MS Volatiles

Lot-Sample #...: D2C130228-003 **Work Order #...:** EWCE61AM **Matrix.....:** WG
Date Sampled...: 03/12/02 11:10 **Date Received..:** 03/13/02
Prep Date.....: 03/22/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2083130 **Analysis Time..:** 14:32
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

GC/MS Volatiles

Lot-Sample #...: D2C130228-003 **Work Order #...:** EWCE61AM **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	4.0	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	ND	1.0	ug/L	0.24
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	94	(80 - 120)
1,2-Dichloroethane-d4	87	(72 - 127)
4-Bromofluorobenzene	96	(79 - 119)
Toluene-d8	101	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-Q

GC/MS Volatiles

Lot-Sample #: D2C130228-003 **Work Order #:** EWCE61AM **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-Q-TB

GC/MS Volatiles

Lot-Sample #...: D2C130228-004 **Work Order #...:** EWCE71AA **Matrix.....:** WQ
Date Sampled...: 03/12/02 10:30 **Date Received..:** 03/13/02
Prep Date.....: 03/22/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2083130 **Analysis Time..:** 14:57
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q-TB

GC/MS Volatiles

Lot-Sample #...: D2C130228-004 **Work Order #...:** EWCE71AA **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	4.0	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	ND	1.0	ug/L	0.24
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	94	(80 - 120)
1,2-Dichloroethane-d4	87	(72 - 127)
4-Bromofluorobenzene	95	(79 - 119)
Toluene-d8	103	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-Q-TB

GC/MS Volatiles

Lot-Sample #: D2C130228-004 **Work Order #:** EWCE71AA **Matrix:** WQ

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		1.8 J	M	7.5561	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 Semivolatiles

Lot-Sample #...: D2C130228-001 **Work Order #...:** EWCEN1AC **Matrix.....:** WG
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02
Prep Date.....: 03/18/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2077377 **Analysis Time..:** 14:59
Dilution Factor: 1

Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	10	ug/L	1.0
Acenaphthylene	ND	10	ug/L	1.0
Acetophenone	ND	10	ug/L	1.4
2-Acetylaminofluorene	ND	100	ug/L	1.8
4-Aminobiphenyl	ND	50	ug/L	1.6
Aniline	ND	10	ug/L	1.2
Anthracene	ND	10	ug/L	1.2
Benzo(a)anthracene	ND	10	ug/L	1.3
Benzo(b)fluoranthene	ND	10	ug/L	2.2
Benzo(k)fluoranthene	ND	10	ug/L	2.2
Benzo(ghi)perylene	ND	10	ug/L	1.1
Benzo(a)pyrene	ND	10	ug/L	1.9
Benzyl alcohol	ND	10	ug/L	3.0
bis(2-Chloroethoxy) methane	ND	10	ug/L	1.4
bis(2-Chloroethyl)-ether	ND	10	ug/L	1.8
bis(2-Ethylhexyl) phthalate	ND	10	ug/L	1.9
4-Bromophenyl phenyl ether	ND	10	ug/L	1.3
Butyl benzyl phthalate	ND	10	ug/L	1.9
4-Chloroaniline	ND	10	ug/L	7.3
4-Chloro-3-methylphenol	ND	10	ug/L	1.3
2-Chloronaphthalene	ND	10	ug/L	1.4
2-Chlorophenol	ND	10	ug/L	1.5
4-Chlorophenyl phenyl ether	ND	10	ug/L	1.5
Chrysene	ND	10	ug/L	1.5
Dibenz(a,h)anthracene	ND	10	ug/L	1.6
Dibenzofuran	ND	10	ug/L	1.3
Di-n-butyl phthalate	ND	10	ug/L	2.1
1,2-Dichlorobenzene	ND	10	ug/L	1.9
1,3-Dichlorobenzene	ND	10	ug/L	2.5
1,4-Dichlorobenzene	ND	10	ug/L	2.2
3,3'-Dichlorobenzidine	ND	50	ug/L	16
2,4-Dichlorophenol	ND	10	ug/L	1.7
2,6-Dichlorophenol	ND	10	ug/L	2.1

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

GC/MS Semivolatiles

Lot-Sample #...: D2C130228-001 Work Order #...: EWCEN1AC Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Diethyl phthalate	ND	10	ug/L	2.0
4-Dimethylaminoazobenzene	ND	20	ug/L	3.2
7,12-Dimethylbenz(a)-anthracene	ND	20	ug/L	1.5
3,3'-Dimethylbenzidine	ND	20	ug/L	10
alpha,alpha-Dimethylphenethylamine	ND	50	ug/L	13
2,4-Dimethylphenol	ND	10	ug/L	2.1
Dimethyl phthalate	ND	10	ug/L	1.8
Di-n-octyl phthalate	ND	10	ug/L	2.0
1,3-Dinitrobenzene	ND	10	ug/L	2.5
4,6-Dinitro-2-methylphenol	ND	50	ug/L	15
2,4-Dinitrophenol	ND	50	ug/L	16
2,4-Dinitrotoluene	ND	10	ug/L	2.4
2,6-Dinitrotoluene	ND	10	ug/L	2.3
Diphenylamine	ND	10	ug/L	1.4
Ethyl methanesulfonate	ND	10	ug/L	2.7
Fluoranthene	ND	10	ug/L	2.0
Fluorene	ND	10	ug/L	1.4
Hexachlorobenzene	ND	10	ug/L	1.5
Hexachlorobutadiene	ND	10	ug/L	3.3
Hexachlorocyclopentadiene	ND	50	ug/L	9.1
Hexachloroethane	ND	10	ug/L	3.0
Hexachloropropene	ND	100	ug/L	1.5
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	1.3
Isophorone	ND	10	ug/L	1.6
Isosafrole	ND	20	ug/L	1.9
Methapyrilene	ND	50	ug/L	18
3-Methylcholanthrene	ND	20	ug/L	4.8
Methyl methanesulfonate	ND	10	ug/L	6.0
2-Methylnaphthalene	ND	10	ug/L	1.9
2-Methylphenol	ND	10	ug/L	1.6
3-Methylphenol	ND	10	ug/L	1.4
4-Methylphenol	ND	10	ug/L	1.4
Naphthalene	ND	10	ug/L	1.4
1,4-Naphthoquinone	ND	50	ug/L	1.8
1-Naphthylamine	ND	10	ug/L	3.3
2-Naphthylamine	ND	10	ug/L	2.6
2-Nitroaniline	ND	50	ug/L	1.6
3-Nitroaniline	ND	50	ug/L	6.7
4-Nitroaniline	ND	50	ug/L	4.4

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

GC/MS Semivolatiles

Lot-Sample #...: D2C130228-001 **Work Order #...:** EWCEN1AC **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Nitrobenzene	ND	10	ug/L	1.7
2-Nitrophenol	ND	10	ug/L	1.7
4-Nitrophenol	ND	50	ug/L	7.1
N-Nitrosodi-n-butylamine	ND	10	ug/L	1.8
N-Nitrosodiethylamine	ND	10	ug/L	1.6
N-Nitrosodimethylamine	ND	10	ug/L	1.7
N-Nitrosodi-n-propyl-amine	ND	10	ug/L	1.8
N-Nitrosodiphenylamine	ND	10	ug/L	5.3
N-Nitrosomethylethylamine	ND	10	ug/L	3.0
N-Nitrosomorpholine	ND	10	ug/L	3.9
N-Nitrosopiperidine	ND	10	ug/L	1.9
N-Nitrosopyrrolidine	ND	10	ug/L	2.4
5-Nitro-o-toluidine	ND	20	ug/L	3.0
Pentachlorobenzene	ND	10	ug/L	1.2
Pentachloroethane	ND	50	ug/L	1.9
Pentachloronitrobenzene	ND	50	ug/L	2.0
Pentachlorophenol	ND	50	ug/L	7.7
Phenacetin	ND	20	ug/L	4.2
Phenanthrene	ND	10	ug/L	1.2
Phenol	ND	10	ug/L	1.4
2-Piccline	ND	20	ug/L	1.2
Pronamide	ND	20	ug/L	1.4
Pyrene	ND	10	ug/L	1.7
Pyridine	ND	20	ug/L	12
Safrole	ND	20	ug/L	2.0
1,2,4,5-Tetrachloro-benzene	ND	10	ug/L	1.9
2,3,4,6-Tetrachlorophenol	ND	50	ug/L	2.2
1,2,4-Trichloro-benzene	ND	10	ug/L	1.8
2,4,5-Trichloro-phenol	ND	10	ug/L	1.1
2,4,6-Trichloro-phenol	ND	10	ug/L	1.1
1,3,5-Trinitrobenzene	ND	50	ug/L	1.4
Aramite	ND	20	ug/L	5.3
2,2'-oxybis(1-Chloropropane)	ND	10	ug/L	1.3
2-sec-Butyl-4,6-dinitro-phenol	ND	20	ug/L	1.1
2-Toluidine	ND	10	ug/L	1.2

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

GC/MS Semivolatiles

Lot-Sample #...: D2C130228-001 **Work Order #...:** EWCEN1AC **Matrix.....:** WG

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	68	(51 - 99)
Phenol-d5	68	(52 - 99)
Nitrobenzene-d5	70	(57 - 97)
2-Fluorobiphenyl	68	(49 - 98)
2,4,6-Tribromophenol	74	(53 - 108)
Terphenyl-d14	70	(38 - 119)

US GEOLOGICAL SURVEY

CAFB-D

GC/MS Semivolatiles

Lot-Sample #: D2C130228-001 **Work Order #:** EWCEN1AC **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		9.8 J	M	3.4109	ug/L
Unknown		15 J	M	3.8417	ug/L
Unknown		6.0 J	M	4.6342	ug/L
1-Propene, 1,1,2-trichloro-	21400-25-9	15 J	M	4.7034	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-1

GC/MS Semivolatiles

Lot-Sample #...: D2C130228-002 **Work Order #...:** EWCE51AN **Matrix.....:** WG
Date Sampled...: 03/12/02 13:20 **Date Received..:** 03/13/02
Prep Date.....: 03/18/02 **Analysis Date..:** 03/27/02
Prep Batch #...: 2077377 **Analysis Time..:** 12:23
Dilution Factor: 1

Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	10	ug/L	1.0
Acenaphthylene	ND	10	ug/L	1.0
Acetophenone	ND	10	ug/L	1.4
2-Acetylaminofluorene	ND	100	ug/L	1.8
4-Aminobiphenyl	ND	50	ug/L	1.6
Aniline	ND	10	ug/L	1.2
Anthracene	ND	10	ug/L	1.2
Benzo(a)anthracene	ND	10	ug/L	1.3
Benzo(b)fluoranthene	ND	10	ug/L	2.2
Benzo(k)fluoranthene	ND	10	ug/L	2.2
Benzo(ghi)perylene	ND	10	ug/L	1.1
Benzo(a)pyrene	ND	10	ug/L	1.9
Benzyl alcohol	ND	10	ug/L	3.0
bis(2-Chloroethoxy) methane	ND	10	ug/L	1.4
bis(2-Chloroethyl)-ether	ND	10	ug/L	1.8
bis(2-Ethylhexyl) phthalate	ND	10	ug/L	1.9
4-Bromophenyl phenyl ether	ND	10	ug/L	1.3
Butyl benzyl phthalate	ND	10	ug/L	1.9
4-Chloroaniline	ND	10	ug/L	7.3
4-Chloro-3-methylphenol	ND	10	ug/L	1.3
2-Chloronaphthalene	ND	10	ug/L	1.4
2-Chlorophenol	ND	10	ug/L	1.5
4-Chlorophenyl phenyl ether	ND	10	ug/L	1.5
Chrysene	ND	10	ug/L	1.5
Dibenz(a,h)anthracene	ND	10	ug/L	1.6
Dibenzofuran	ND	10	ug/L	1.3
Di-n-butyl phthalate	ND	10	ug/L	2.1
1,2-Dichlorobenzene	ND	10	ug/L	1.9
1,3-Dichlorobenzene	ND	10	ug/L	2.5
1,4-Dichlorobenzene	ND	10	ug/L	2.2
3,3'-Dichlorobenzidine	ND	50	ug/L	16
2,4-Dichlorophenol	ND	10	ug/L	1.7
2,6-Dichlorophenol	ND	10	ug/L	2.1

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D-1

GC/MS Semivolatiles

Lot-Sample #...: D2C130228-002 **Work Order #...:** EWCE51AN **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Diethyl phthalate	ND	10	ug/L	2.0
4-Dimethylaminoazobenzene	ND	20	ug/L	3.2
7,12-Dimethylbenz(a)-anthracene	ND	20	ug/L	1.5
3,3'-Dimethylbenzidine	ND	20	ug/L	10
alpha,alpha-Dimethylphenethylamine	ND	50	ug/L	13
2,4-Dimethylphenol	ND	10	ug/L	2.1
Dimethyl phthalate	ND	10	ug/L	1.8
Di-n-octyl phthalate	ND	10	ug/L	2.0
1,3-Dinitrobenzene	ND	10	ug/L	2.5
4,6-Dinitro-2-methylphenol	ND	50	ug/L	15
2,4-Dinitrophenol	ND	50	ug/L	16
2,4-Dinitrotoluene	ND	10	ug/L	2.4
2,6-Dinitrotoluene	ND	10	ug/L	2.3
Diphenylamine	ND	10	ug/L	1.4
Ethyl methanesulfonate	ND	10	ug/L	2.7
Fluoranthene	ND	10	ug/L	2.0
Fluorene	ND	10	ug/L	1.4
Hexachlorobenzene	ND	10	ug/L	1.5
Hexachlorobutadiene	ND	10	ug/L	3.3
Hexachlorocyclopentadiene	ND	50	ug/L	9.1
Hexachloroethane	ND	10	ug/L	3.0
Hexachloropropene	ND	100	ug/L	1.5
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	1.3
Isophorone	ND	10	ug/L	1.6
Isosafrole	ND	20	ug/L	1.9
Methapyrilene	ND	50	ug/L	18
3-Methylcholanthrene	ND	20	ug/L	4.8
Methyl methanesulfonate	ND	10	ug/L	6.0
2-Methylnaphthalene	ND	10	ug/L	1.9
2-Methylphenol	ND	10	ug/L	1.6
3-Methylphenol	ND	10	ug/L	1.4
4-Methylphenol	ND	10	ug/L	1.4
Naphthalene	ND	10	ug/L	1.4
1,4-Naphthoquinone	ND	50	ug/L	1.8
1-Naphthylamine	ND	10	ug/L	3.3
2-Naphthylamine	ND	10	ug/L	2.6
2-Nitroaniline	ND	50	ug/L	1.6
3-Nitroaniline	ND	50	ug/L	6.7
4-Nitroaniline	ND	50	ug/L	4.4

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D-1

GC/MS Semivolatiles

Lot-Sample #...: D2C130228-002 **Work Order #...:** EWCE51AN **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Nitrobenzene	ND	10	ug/L	1.7
2-Nitrophenol	ND	10	ug/L	1.7
4-Nitrophenol	ND	50	ug/L	7.1
N-Nitrosodi-n-butylamine	ND	10	ug/L	1.8
N-Nitrosodiethylamine	ND	10	ug/L	1.6
N-Nitrosodimethylamine	ND	10	ug/L	1.7
N-Nitrosodi-n-propyl-amine	ND	10	ug/L	1.8
N-Nitrosodiphenylamine	ND	10	ug/L	5.3
N-Nitrosomethylethylamine	ND	10	ug/L	3.0
N-Nitrosomorpholine	ND	10	ug/L	3.9
N-Nitrosopiperidine	ND	10	ug/L	1.9
N-Nitrosopyrrolidine	ND	10	ug/L	2.4
5-Nitro-o-toluidine	ND	20	ug/L	3.0
Pentachlorobenzene	ND	10	ug/L	1.2
Pentachloroethane	ND	50	ug/L	1.9
Pentachloronitrobenzene	ND	50	ug/L	2.0
Pentachlorophenol	ND	50	ug/L	7.7
Phenacetin	ND	20	ug/L	4.2
Phenanthrene	ND	10	ug/L	1.2
Phenol	ND	10	ug/L	1.4
2-Picoline	ND	20	ug/L	1.2
Pronamide	ND	20	ug/L	1.4
Pyrene	ND	10	ug/L	1.7
Pyridine	ND	20	ug/L	12
Safrole	ND	20	ug/L	2.0
1,2,4,5-Tetrachloro-benzene	ND	10	ug/L	1.9
2,3,4,6-Tetrachlorophenol	ND	50	ug/L	2.2
1,2,4-Trichloro-benzene	ND	10	ug/L	1.8
2,4,5-Trichloro-phenol	ND	10	ug/L	1.1
2,4,6-Trichloro-phenol	ND	10	ug/L	1.1
1,3,5-Trinitrobenzene	ND	50	ug/L	1.4
Aramite	ND	20	ug/L	5.3
2,2'-oxybis(1-Chloropropane)	ND	10	ug/L	1.3
2-sec-Butyl-4,6-dinitro-phenol	ND	20	ug/L	1.1
2-Toluidine	ND	10	ug/L	1.2

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D-1

GC/MS Semivolatiles

Lot-Sample #...: D2C130228-002 **Work Order #...:** EWCE51AN **Matrix.....:** WG

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	73	(51 - 99)
Phenol-d5	74	(52 - 99)
Nitrobenzene-d5	78	(57 - 97)
2-Fluorobiphenyl	70	(49 - 98)
2,4,6-Tribromophenol	74	(53 - 108)
Terphenyl-d14	73	(38 - 119)

US GEOLOGICAL SURVEY

CAFB-D-1

GC/MS Semivolatiles

Lot-Sample #: D2C130228-002 **Work Order #:** EWCE51AN **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		30 J	M	3.4043	ug/L
Unknown		16 J	M	3.8404	ug/L
Unknown		6.3 J	M	4.6329	ug/L
Unknown		17 J	M	4.6967	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 #...: D2C130228-003 **Work Order #...:** EWCE61AN **Matrix.....:** WG
Date Sampled...: 03/12/02 11:10 **Date Received..:** 03/13/02
Prep Date.....: 03/18/02 **Analysis Date..:** 03/27/02
Prep Batch #...: 2077377 **Analysis Time..:** 12:47
Dilution Factor: 1

Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	10	ug/L	1.0
Acenaphthylene	ND	10	ug/L	1.0
Acetophenone	ND	10	ug/L	1.4
2-Acetylaminofluorene	ND	100	ug/L	1.8
4-Aminobiphenyl	ND	50	ug/L	1.6
Aniline	ND	10	ug/L	1.2
Anthracene	ND	10	ug/L	1.2
Benzo(a)anthracene	ND	10	ug/L	1.3
Benzo(b)fluoranthene	ND	10	ug/L	2.2
Benzo(k)fluoranthene	ND	10	ug/L	2.2
Benzo(ghi)perylene	ND	10	ug/L	1.1
Benzo(a)pyrene	ND	10	ug/L	1.9
Benzyl alcohol	ND	10	ug/L	3.0
bis(2-Chloroethoxy) methane	ND	10	ug/L	1.4
bis(2-Chloroethyl)-ether	ND	10	ug/L	1.8
bis(2-Ethylhexyl) phthalate	ND	10	ug/L	1.9
4-Bromophenyl phenyl ether	ND	10	ug/L	1.3
Butyl benzyl phthalate	ND	10	ug/L	1.9
4-Chloroaniline	ND	10	ug/L	7.3
4-Chloro-3-methylphenol	ND	10	ug/L	1.3
2-Chloronaphthalene	ND	10	ug/L	1.4
2-Chlorophenol	ND	10	ug/L	1.5
4-Chlorophenyl phenyl ether	ND	10	ug/L	1.5
Chrysene	ND	10	ug/L	1.5
Dibenz(a,h)anthracene	ND	10	ug/L	1.6
Dibenzofuran	ND	10	ug/L	1.3
Di-n-butyl phthalate	ND	10	ug/L	2.1
1,2-Dichlorobenzene	ND	10	ug/L	1.9
1,3-Dichlorobenzene	ND	10	ug/L	2.5
1,4-Dichlorobenzene	ND	10	ug/L	2.2
3,3'-Dichlorobenzidine	ND	50	ug/L	16
2,4-Dichlorophenol	ND	10	ug/L	1.7
2,6-Dichlorophenol	ND	10	ug/L	2.1

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

GC/MS Semivolatiles

Lot-Sample #...: D2C130228-003 **Work Order #...:** EWCE61AN **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Diethyl phthalate	ND	10	ug/L	2.0
4-Dimethylaminoazobenzene	ND	20	ug/L	3.2
7,12-Dimethylbenz(a)-anthracene	ND	20	ug/L	1.5
3,3'-Dimethylbenzidine	ND	20	ug/L	10
alpha,alpha-Dimethylphenethylamine	ND	50	ug/L	13
2,4-Dimethylphenol	ND	10	ug/L	2.1
Dimethyl phthalate	ND	10	ug/L	1.8
Di-n-octyl phthalate	ND	10	ug/L	2.0
1,3-Dinitrobenzene	ND	10	ug/L	2.5
4,6-Dinitro-2-methylphenol	ND	50	ug/L	15
2,4-Dinitrophenol	ND	50	ug/L	16
2,4-Dinitrotoluene	ND	10	ug/L	2.4
2,6-Dinitrotoluene	ND	10	ug/L	2.3
Diphenylamine	ND	10	ug/L	1.4
Ethyl methanesulfonate	ND	10	ug/L	2.7
Fluoranthene	ND	10	ug/L	2.0
Fluorene	ND	10	ug/L	1.4
Hexachlorobenzene	ND	10	ug/L	1.5
Hexachlorobutadiene	ND	10	ug/L	3.3
Hexachlorocyclopentadiene	ND	50	ug/L	9.1
Hexachloroethane	ND	10	ug/L	3.0
Hexachloropropene	ND	100	ug/L	1.5
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	1.3
Isophorone	ND	10	ug/L	1.6
Isosafrole	ND	20	ug/L	1.9
Methapyrilene	ND	50	ug/L	18
3-Methylcholanthrene	ND	20	ug/L	4.8
Methyl methanesulfonate	ND	10	ug/L	6.0
2-Methylnaphthalene	ND	10	ug/L	1.9
2-Methylphenol	ND	10	ug/L	1.6
3-Methylphenol	ND	10	ug/L	1.4
4-Methylphenol	ND	10	ug/L	1.4
Naphthalene	ND	10	ug/L	1.4
1,4-Naphthoquinone	ND	50	ug/L	1.8
1-Naphthylamine	ND	10	ug/L	3.3
2-Naphthylamine	ND	10	ug/L	2.6
2-Nitroaniline	ND	50	ug/L	1.6
3-Nitroaniline	ND	50	ug/L	6.7
4-Nitroaniline	ND	50	ug/L	4.4

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

GC/MS Semivolatiles

Lot-Sample #...: D2C130228-003 **Work Order #...:** EWCE61AN **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Nitrobenzene	ND	10	ug/L	1.7
2-Nitrophenol	ND	10	ug/L	1.7
4-Nitrophenol	ND	50	ug/L	7.1
N-Nitrosodi-n-butylamine	ND	10	ug/L	1.8
N-Nitrosodiethylamine	ND	10	ug/L	1.6
N-Nitrosodimethylamine	ND	10	ug/L	1.7
N-Nitrosodi-n-propyl-amine	ND	10	ug/L	1.8
N-Nitrosodiphenylamine	ND	10	ug/L	5.3
N-Nitrosomethylethylamine	ND	10	ug/L	3.0
N-Nitrosomorpholine	ND	10	ug/L	3.9
N-Nitrosopiperidine	ND	10	ug/L	1.9
N-Nitrosopyrrolidine	ND	10	ug/L	2.4
5-Nitro-o-toluidine	ND	20	ug/L	3.0
Pentachlorobenzene	ND	10	ug/L	1.2
Pentachloroethane	ND	50	ug/L	1.9
Pentachloronitrobenzene	ND	50	ug/L	2.0
Pentachlorophenol	ND	50	ug/L	7.7
Phenacetin	ND	20	ug/L	4.2
Phenanthrene	ND	10	ug/L	1.2
Phenol	ND	10	ug/L	1.4
2-Picoline	ND	20	ug/L	1.2
Pronamide	ND	20	ug/L	1.4
Pyrene	ND	10	ug/L	1.7
Pyridine	ND	20	ug/L	12
Safrole	ND	20	ug/L	2.0
1,2,4,5-Tetrachloro-benzene	ND	10	ug/L	1.9
2,3,4,6-Tetrachlorophenol	ND	50	ug/L	2.2
1,2,4-Trichloro-benzene	ND	10	ug/L	1.8
2,4,5-Trichloro-phenol	ND	10	ug/L	1.1
2,4,6-Trichloro-phenol	ND	10	ug/L	1.1
1,3,5-Trinitrobenzene	ND	50	ug/L	1.4
Aramite	ND	20	ug/L	5.3
2,2'-oxybis(1-Chloropropane)	ND	10	ug/L	1.3
2-sec-Butyl-4,6-dinitro-phenol	ND	20	ug/L	1.1
2-Toluidine	ND	10	ug/L	1.2

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

GC/MS Semivolatiles

Lot-Sample #...: D2C130228-003 **Work Order #...:** EWCE61AN **Matrix.....:** WG

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	66	(51 - 99)
Phenol-d5	67	(52 - 99)
Nitrobenzene-d5	72	(57 - 97)
2-Fluorobiphenyl	67	(49 - 98)
2,4,6-Tribromophenol	70	(53 - 108)
Terphenyl-d14	70	(38 - 119)

US GEOLOGICAL SURVEY

CAFB-Q

GC/MS Semivolatiles

Lot-Sample #: D2C130228-003 **Work Order #:** EWCE61AN **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		6.5 J	M	3.411	ug/L
Unknown		16 J	M	3.8365	ug/L
Unknown		6.5 J	M	4.629	ug/L
Unknown		20 J	M	4.6981	ug/L
Unknown		4.1 J	M	5.7831	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 Semivolatiles

Lot-Sample #...: D2C130228-001 **Work Order #...:** EWCEN1AD **Matrix.....:** WG
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/20/02
Prep Batch #...: 2078238 **Analysis Time..:** 22:48
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aldrin	ND	0.050	ug/L	0.0070
alpha-BHC	ND	0.050	ug/L	0.0060
beta-BHC	ND	0.050	ug/L	0.0070
delta-BHC	ND	0.050	ug/L	0.0050
gamma-BHC (Lindane)	ND	0.050	ug/L	0.0050
alpha-Chlordane	ND	0.050	ug/L	0.0090
gamma-Chlordane	ND	0.050	ug/L	0.0070
4,4'-DDD	ND	0.050	ug/L	0.0080
4,4'-DDE	ND	0.050	ug/L	0.0060
4,4'-DDT	ND	0.050	ug/L	0.017
Diallate	ND	1.0	ug/L	0.50
Dieldrin	ND	0.050	ug/L	0.0050
Endosulfan I	ND	0.050	ug/L	0.0080
Endosulfan II	ND	0.050	ug/L	0.0080
Endosulfan sulfate	ND	0.050	ug/L	0.0060
Endrin	ND	0.050	ug/L	0.0060
Endrin aldehyde	ND	0.050	ug/L	0.017
Endrin ketone	ND	0.050	ug/L	0.0070
Heptachlor	ND	0.050	ug/L	0.0080
Heptachlor epoxide	ND	0.050	ug/L	0.0050
Isodrin	ND	0.10	ug/L	0.025
Kepone	ND	1.0	ug/L	0.20
Methoxychlor	ND	0.10	ug/L	0.0090
Toxaphene	ND	2.0	ug/L	0.51

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	109	(15 - 162)
Tetrachloro-m-xylene	98	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D-1

GC Semivolatiles

Lot-Sample #...: D2C130228-002 **Work Order #...:** EWCE51AP **Matrix.....:** WG
Date Sampled...: 03/12/02 13:20 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/21/02
Prep Batch #...: 2078238 **Analysis Time..:** 01:39
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aldrin	ND	0.050	ug/L	0.0070
alpha-BHC	ND	0.050	ug/L	0.0060
beta-BHC	ND	0.050	ug/L	0.0070
delta-BHC	ND	0.050	ug/L	0.0050
gamma-BHC (Lindane)	ND	0.050	ug/L	0.0050
alpha-Chlordane	ND	0.050	ug/L	0.0090
gamma-Chlordane	ND	0.050	ug/L	0.0070
4,4'-DDD	ND	0.050	ug/L	0.0080
4,4'-DDE	ND	0.050	ug/L	0.0060
4,4'-DDT	ND	0.050	ug/L	0.017
Diallate	ND	1.0	ug/L	0.50
Dieldrin	ND	0.050	ug/L	0.0050
Endosulfan I	ND	0.050	ug/L	0.0080
Endosulfan II	ND	0.050	ug/L	0.0080
Endosulfan sulfate	ND	0.050	ug/L	0.0060
Endrin	ND	0.050	ug/L	0.0060
Endrin aldehyde	ND	0.050	ug/L	0.017
Endrin ketone	ND	0.050	ug/L	0.0070
Heptachlor	ND	0.050	ug/L	0.0080
Heptachlor epoxide	ND	0.050	ug/L	0.0050
Isodrin	ND	0.10	ug/L	0.025
Kepone	ND	1.0	ug/L	0.20
Methoxychlor	ND	0.10	ug/L	0.0090
Toxaphene	ND	2.0	ug/L	0.51

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	111	(15 - 162)
Tetrachloro-m-xylene	100	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

GC Semivolatiles

Lot-Sample #...: D2C130228-003 **Work Order #...:** EWCE61AP **Matrix.....:** WG
Date Sampled...: 03/12/02 11:10 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/21/02
Prep Batch #...: 2078238 **Analysis Time..:** 02:08
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aldrin	ND	0.050	ug/L	0.0070
alpha-BHC	ND	0.050	ug/L	0.0060
beta-BHC	ND	0.050	ug/L	0.0070
delta-BHC	ND	0.050	ug/L	0.0050
gamma-BHC (Lindane)	ND	0.050	ug/L	0.0050
alpha-Chlordane	ND	0.050	ug/L	0.0090
gamma-Chlordane	ND	0.050	ug/L	0.0070
4,4'-DDD	ND	0.050	ug/L	0.0080
4,4'-DDE	ND	0.050	ug/L	0.0060
4,4'-DDT	ND	0.050	ug/L	0.017
Diallate	ND	1.0	ug/L	0.50
Dieldrin	ND	0.050	ug/L	0.0050
Endosulfan I	ND	0.050	ug/L	0.0080
Endosulfan II	ND	0.050	ug/L	0.0080
Endosulfan sulfate	ND	0.050	ug/L	0.0060
Endrin	ND	0.050	ug/L	0.0060
Endrin aldehyde	ND	0.050	ug/L	0.017
Endrin ketone	ND	0.050	ug/L	0.0070
Heptachlor	ND	0.050	ug/L	0.0080
Heptachlor epoxide	ND	0.050	ug/L	0.0050
Isodrin	ND	0.10	ug/L	0.025
Kepone	ND	1.0	ug/L	0.20
Methoxychlor	ND	0.10	ug/L	0.0090
Toxaphene	ND	2.0	ug/L	0.51

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	108	(15 - 162)
Tetrachloro-m-xylene	101	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

GC Semivolatiles

Lot-Sample #...: D2C130228-001 **Work Order #...:** EWCEN1AE **Matrix.....:** WG
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/21/02
Prep Batch #...: 2078249 **Analysis Time..:** 18:44
Dilution Factor: 1

Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND	1.0	ug/L	0.085
Aroclor 1221	ND	1.0	ug/L	0.12
Aroclor 1232	ND	1.0	ug/L	0.10
Aroclor 1242	ND	1.0	ug/L	0.12
Aroclor 1248	ND	1.0	ug/L	0.079
Aroclor 1254	ND	1.0	ug/L	0.074
Aroclor 1260	ND	1.0	ug/L	0.060

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	79	(41 - 107)
Decachlorobiphenyl	110	(46 - 131)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D-1

GC Semivolatiles

Lot-Sample #...: D2C130228-002 **Work Order #...:** EWCE51AQ **Matrix.....:** WG
Date Sampled...: 03/12/02 13:20 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/21/02
Prep Batch #...: 2078249 **Analysis Time..:** 20:00
Dilution Factor: 1

Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND	1.0	ug/L	0.085
Aroclor 1221	ND	1.0	ug/L	0.12
Aroclor 1232	ND	1.0	ug/L	0.10
Aroclor 1242	ND	1.0	ug/L	0.12
Aroclor 1248	ND	1.0	ug/L	0.079
Aroclor 1254	ND	1.0	ug/L	0.074
Aroclor 1260	ND	1.0	ug/L	0.060

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	79	(41 - 107)
Decachlorobiphenyl	108	(46 - 131)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

GC Semivolatiles

Lot-Sample #...: D2C130228-003 **Work Order #...:** EWCE61AQ **Matrix.....:** WG
Date Sampled...: 03/12/02 11:10 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/21/02
Prep Batch #...: 2078249 **Analysis Time..:** 20:26
Dilution Factor: 1

Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND	1.0	ug/L	0.085
Aroclor 1221	ND	1.0	ug/L	0.12
Aroclor 1232	ND	1.0	ug/L	0.10
Aroclor 1242	ND	1.0	ug/L	0.12
Aroclor 1248	ND	1.0	ug/L	0.079
Aroclor 1254	ND	1.0	ug/L	0.074
Aroclor 1260	ND	1.0	ug/L	0.060

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	81	(41 - 107)
Decachlorobiphenyl	104	(46 - 131)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

GC Semivolatiles

Lot-Sample #...: D2C130228-001 **Work Order #...:** EWCEN1AF **Matrix.....:** WG
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2078479 **Analysis Time..:** 19:56
Dilution Factor: 1

Method.....: SW846 8151A

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2,4-D	ND	4.0	ug/L	0.16
Dinoseb	ND	0.60	ug/L	0.090
2,4,5-TP (Silvex)	ND	1.0	ug/L	0.034
2,4,5-T	ND	1.0	ug/L	0.043

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	78	(20 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D-1

GC Semivolatiles

Lot-Sample #...: D2C130228-002 **Work Order #...:** EWCE51AR **Matrix.....:** WG
Date Sampled...: 03/12/02 13:20 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2078479 **Analysis Time..:** 22:17
Dilution Factor: 1

Method.....: SW846 8151A

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2,4-D	ND	4.0	ug/L	0.16
Dinoseb	ND	0.60	ug/L	0.090
2,4,5-TP (Silvex)	ND	1.0	ug/L	0.034
2,4,5-T	ND	1.0	ug/L	0.043

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	90	(20 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

GC Semivolatiles

Lot-Sample #...:	D2C130228-003	**Work Order #...:**	EWCE61AR	**Matrix.....:**	WG
Date Sampled...:	03/12/02 11:10	**Date Received..:**	03/13/02		
Prep Date.....:	03/19/02	**Analysis Date..:**	03/22/02		
Prep Batch #...:	2078479	**Analysis Time..:**	22:52		
Dilution Factor:	1				
		Method.....:	SW846 8151A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2,4-D	ND	4.0	ug/L	0.16
Dinoseb	ND	0.60	ug/L	0.090
2,4,5-TP (Silvex)	ND	1.0	ug/L	0.034
2,4,5-T	ND	1.0	ug/L	0.043

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	74	(20 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

Trace Level Organic Compounds

Lot-Sample #...: D2C130228-001 **Work Order #...:** EWCEN1AM **Matrix.....:** WG
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2078358 **Analysis Time..:** 20:09
Dilution Factor: 1

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.048	ng/L	SW846 8280A
Total TCDD	ND	0.048	ng/L	SW846 8280A
Total PeCDD	ND	1.7	ng/L	SW846 8280A
Total HxCDD	ND	0.10	ng/L	SW846 8280A
Total TCDF	ND	0.025	ng/L	SW846 8280A
Total PeCDF	ND	0.23	ng/L	SW846 8280A
Total HxCDF	ND	0.098	ng/L	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	95	(25 - 150)
13C-2,3,7,8-TCDF	95	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	94	(25 - 150)
3C-1,2,3,4,6,7,8-HpCDF	100	(25 - 150)
3C-OCDD	93	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	97	(25 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D-1

Trace Level Organic Compounds

Lot-Sample #...: D2C130228-002 **Work Order #...:** EWCE51A0 **Matrix.....:** WG
Date Sampled...: 03/12/02 13:20 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2078358 **Analysis Time..:** 22:32
Dilution Factor: 1

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.039	ng/L	SW846 8280A
Total TCDD	ND	0.039	ng/L	SW846 8280A
Total PeCDD	ND	1.4	ng/L	SW846 8280A
Total HxCDD	ND	0.097	ng/L	SW846 8280A
Total TCDF	ND	0.017	ng/L	SW846 8280A
Total PeCDF	ND	0.18	ng/L	SW846 8280A
Total HxCDF	ND	0.090	ng/L	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	110	(25 - 150)
13C-2,3,7,8-TCDF	107	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	103	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	108	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	105	(25 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

Trace Level Organic Compounds

Lot-Sample #...: D2C130228-003 **Work Order #...:** EWCE61A0 **Matrix.....:** WG
Date Sampled...: 03/12/02 11:10 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2078358 **Analysis Time..:** 23:19
Dilution Factor: 1

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.063	ng/L	SW846 8280A
Total TCDD	ND	0.063	ng/L	SW846 8280A
Total PeCDD	ND	1.9	ng/L	SW846 8280A
Total HxCDD	ND	0.12	ng/L	SW846 8280A
Total TCDF	ND	0.019	ng/L	SW846 8280A
Total PeCDF	ND	0.23	ng/L	SW846 8280A
Total HxCDF	ND	0.10	ng/L	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	90	(25 - 150)
13C-2,3,7,8-TCDF	89	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	89	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	93	(25 - 150)

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

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

HPLC

Lot-Sample #...: D2C130228-001 **Work Order #...:** EWCEN1AG **Matrix.....:** WG
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 04/03/02
Prep Batch #...: 2078234 **Analysis Time..:** 10:38
Dilution Factor: 1

Method.....: SW846 8310

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	1.0	ug/L	0.074
Acenaphthylene	ND	1.0	ug/L	0.14
Anthracene	ND	0.10	ug/L	0.031
Benzo(a)anthracene	ND	0.10	ug/L	0.049
Benzo(a)pyrene	ND	0.10	ug/L	0.075
Benzo(b)fluoranthene	ND	0.10	ug/L	0.030
Benzo(ghi)perylene	ND	0.20	ug/L	0.059
Benzo(k)fluoranthene	ND	0.10	ug/L	0.060
Chrysene	ND	0.20	ug/L	0.041
Dibenzo(a,h)anthracene	ND	0.20	ug/L	0.060
Fluoranthene	ND	0.20	ug/L	0.12
Fluorene	ND	0.20	ug/L	0.13
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L	0.025
1-Methylnaphthalene	ND	1.0	ug/L	0.14
2-Methylnaphthalene	ND	1.0	ug/L	0.11
Naphthalene	ND	1.0	ug/L	0.049
Phenanthrene	ND	0.20	ug/L	0.11
Pyrene	ND	0.20	ug/L	0.040

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	99	(64 - 108)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D-1

HPLC

Lot-Sample #...: D2C130228-002 **Work Order #...:** EWCE51AT **Matrix.....:** WG
Date Sampled...: 03/12/02 13:20 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 04/03/02
Prep Batch #...: 2078234 **Analysis Time..:** 12:05
Dilution Factor: 1

Method.....: SW846 8310

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	1.0	ug/L	0.074
Acenaphthylene	ND	1.0	ug/L	0.14
Anthracene	ND	0.10	ug/L	0.031
Benzo(a)anthracene	ND	0.10	ug/L	0.049
Benzo(a)pyrene	ND	0.10	ug/L	0.075
Benzo(b)fluoranthene	ND	0.10	ug/L	0.030
Benzo(ghi)perylene	ND	0.20	ug/L	0.059
Benzo(k)fluoranthene	ND	0.10	ug/L	0.060
Chrysene	ND	0.20	ug/L	0.041
Dibenzo(a,h)anthracene	ND	0.20	ug/L	0.060
Fluoranthene	ND	0.20	ug/L	0.12
Fluorene	ND	0.20	ug/L	0.13
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L	0.025
1-Methylnaphthalene	ND	1.0	ug/L	0.14
2-Methylnaphthalene	ND	1.0	ug/L	0.11
Naphthalene	ND	1.0	ug/L	0.049
Phenanthrene	ND	0.20	ug/L	0.11
Pyrene	ND	0.20	ug/L	0.040

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	93	(64 - 108)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

HPLC

Lot-Sample #...: D2C130228-003 **Work Order #...:** EWCE61AT **Matrix.....:** WG
Date Sampled...: 03/12/02 11:10 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 04/03/02
Prep Batch #...: 2078234 **Analysis Time..:** 12:34
Dilution Factor: 1

Method.....: SW846 8310

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	1.0	ug/L	0.074
Acenaphthylene	ND	1.0	ug/L	0.14
Anthracene	ND	0.10	ug/L	0.031
Benzo(a)anthracene	ND	0.10	ug/L	0.049
Benzo(a)pyrene	ND	0.10	ug/L	0.075
Benzo(b)fluoranthene	ND	0.10	ug/L	0.030
Benzo(ghi)perylene	ND	0.20	ug/L	0.059
Benzo(k)fluoranthene	ND	0.10	ug/L	0.060
Chrysene	ND	0.20	ug/L	0.041
Dibenzo(a,h)anthracene	ND	0.20	ug/L	0.060
Fluoranthene	ND	0.20	ug/L	0.12
Fluorene	ND	0.20	ug/L	0.13
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L	0.025
1-Methylnaphthalene	ND	1.0	ug/L	0.14
2-Methylnaphthalene	ND	1.0	ug/L	0.11
Naphthalene	ND	1.0	ug/L	0.049
Phenanthrene	ND	0.20	ug/L	0.11
Pyrene	ND	0.20	ug/L	0.040

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	97	(64 - 108)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

TOTAL Metals

Lot-Sample #...: D2C130228-001 **Matrix.....:** WG
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2078272						
Aluminum	ND	100	ug/L	SW846 6010B	03/21-03/22/02	EWCEN1AP
		Dilution Factor: 1		Analysis Time..: 16:36	MDL.....: 20.0	
Barium	**90.3**	**10.0**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCEN1AQ**
		Dilution Factor: 1		Analysis Time..: 22:59	MDL.....: 0.49	
Beryllium	ND	2.0	ug/L	SW846 6010B	03/21-03/22/02	EWCEN1AR
		Dilution Factor: 1		Analysis Time..: 22:59	MDL.....: 0.22	
Calcium	**32300**	**200**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCEN1CE**
		Dilution Factor: 1		Analysis Time..: 16:36	MDL.....: 31.0	
Cobalt	ND	10.0	ug/L	SW846 6010B	03/21-03/22/02	EWCEN1CA
		Dilution Factor: 1		Analysis Time..: 22:59	MDL.....: 0.92	
Copper	ND	20.0	ug/L	SW846 6010B	03/21-03/22/02	EWCEN1AT
		Dilution Factor: 1		Analysis Time..: 22:59	MDL.....: 4.2	
Iron	**26.4 B**	**100**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCEN1AU**
		Dilution Factor: 1		Analysis Time..: 16:36	MDL.....: 13.0	
Potassium	**6110**	**3000**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCEN1CG**
		Dilution Factor: 1		Analysis Time..: 16:36	MDL.....: 490	
Magnesium	**32800**	**200**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCEN1CF**
		Dilution Factor: 1		Analysis Time..: 16:36	MDL.....: 24.0	
Manganese	**1.2 B**	**10.0**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCEN1AV**
		Dilution Factor: 1		Analysis Time..: 22:59	MDL.....: 0.49	
Sodium	**50800**	**5000**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCEN1CH**
		Dilution Factor: 1		Analysis Time..: 16:36	MDL.....: 1500	
Nickel	ND	40.0	ug/L	SW846 6010B	03/21-03/22/02	EWCEN1AW
		Dilution Factor: 1		Analysis Time..: 22:59	MDL.....: 4.1	
Tin	ND	100	ug/L	SW846 6010B	03/21-03/27/02	EWCEN1CC
		Dilution Factor: 1		Analysis Time..: 15:48	MDL.....: 3.4	

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

TOTAL Metals

Lot-Sample #...: D2C130228-001 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	**33.4**	**10.0**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCEN1AX**
		Dilution Factor: 1		Analysis Time..: 22:59	MDL.....: 2.2	
Zinc	ND	20.0	ug/L	SW846 6010B	03/21-03/22/02	EWCEN1A0
		Dilution Factor: 1		Analysis Time..: 22:59	MDL.....: 3.3	
Molybdenum	**3.0 B**	**20.0**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCEN1CD**
		Dilution Factor: 1		Analysis Time..: 22:59	MDL.....: 2.1	
Prep Batch #...: 2078476						
Silver	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWCEN1A6
		Dilution Factor: 1		Analysis Time..: 20:13	MDL.....: 0.012	
Arsenic	**4.6 B**	**5.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWCEN1A2**
		Dilution Factor: 1		Analysis Time..: 20:13	MDL.....: 0.061	
Cadmium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWCEN1
		Dilution Factor: 1		Analysis Time..: 20:13	MDL.....: 0.022	
Chromium	**1.1 J**	**1.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWCEN1A8**
		Dilution Factor: 1		Analysis Time..: 20:13	MDL.....: 0.24	
Lead	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWCEN1A4
		Dilution Factor: 1		Analysis Time..: 20:13	MDL.....: 0.15	
Antimony	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWCEN1A1
		Dilution Factor: 1		Analysis Time..: 20:13	MDL.....: 0.040	
Selenium	**0.21 B**	**5.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWCEN1A5**
		Dilution Factor: 1		Analysis Time..: 20:13	MDL.....: 0.19	
Thallium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWCEN1A7
		Dilution Factor: 1		Analysis Time..: 20:13	MDL.....: 0.015	
Prep Batch #...: 2085309						
Mercury	ND	0.20	ug/L	SW846 7470A	04/01/02	EWCEN1A9
		Dilution Factor: 1		Analysis Time..: 21:54	MDL.....: 0.028	

NOTE(S):

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D-1

TOTAL Metals

Lot-Sample #...: D2C130228-002 **Matrix.....:** WG
Date Sampled...: 03/12/02 13:20 **Date Received..:** 03/13/02

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2078272						
Aluminum	ND	100	ug/L	SW846 6010B	03/21-03/22/02	EWCE51A2
		Dilution Factor: 1		Analysis Time..: 16:57	MDL.....: 20.0	
Barium	**83.2**	**10.0**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCE51A3**
		Dilution Factor: 1		Analysis Time..: 23:21	MDL.....: 0.49	
Beryllium	ND	2.0	ug/L	SW846 6010B	03/21-03/22/02	EWCE51A4
		Dilution Factor: 1		Analysis Time..: 23:21	MDL.....: 0.22	
Calcium	**31800**	**200**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCE51CE**
		Dilution Factor: 1		Analysis Time..: 16:57	MDL.....: 31.0	
Cobalt	ND	10.0	ug/L	SW846 6010B	03/21-03/22/02	EWCE51CA
		Dilution Factor: 1		Analysis Time..: 23:21	MDL.....: 0.92	
›pper	ND	20.0	ug/L	SW846 6010B	03/21-03/22/02	EWCE51A5
		Dilution Factor: 1		Analysis Time..: 23:21	MDL.....: 4.2	
Iron	**24.1 B**	**100**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCE51A6**
		Dilution Factor: 1		Analysis Time..: 16:57	MDL.....: 13.0	
Potassium	**5930**	**3000**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCE51CG**
		Dilution Factor: 1		Analysis Time..: 16:57	MDL.....: 490	
Magnesium	**32200**	**200**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCE51CF**
		Dilution Factor: 1		Analysis Time..: 16:57	MDL.....: 24.0	
Manganese	**1.3 B**	**10.0**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCE51A7**
		Dilution Factor: 1		Analysis Time..: 23:21	MDL.....: 0.49	
Sodium	**50000**	**5000**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCE51CH**
		Dilution Factor: 1		Analysis Time..: 16:57	MDL.....: 1500	
Nickel	ND	40.0	ug/L	SW846 6010B	03/21-03/22/02	EWCE51A8
		Dilution Factor: 1		Analysis Time..: 23:21	MDL.....: 4.1	
Tin	ND	100	ug/L	SW846 6010B	03/21-03/27/02	EWCE51CC
		Dilution Factor: 1		Analysis Time..: 16:10	MDL.....: 3.4	

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D-1

TOTAL Metals

Lot-Sample #...: D2C130228-002 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	**33.1**	**10.0**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCE51A9**
		Dilution Factor: 1		Analysis Time..: 23:21	MDL.....: 2.2	
Zinc	ND	20.0	ug/L	SW846 6010B	03/21-03/22/02	EWCE51AA
		Dilution Factor: 1		Analysis Time..: 23:21	MDL.....: 3.3	
Molybdenum	**3.5 B**	**20.0**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCE51CD**
		Dilution Factor: 1		Analysis Time..: 23:21	MDL.....: 2.1	
Prep Batch #...: 2078476						
Silver	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWCE51AH
		Dilution Factor: 1		Analysis Time..: 20:51	MDL.....: 0.012	
Arsenic	**4.5 B**	**5.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWCE51AD**
		Dilution Factor: 1		Analysis Time..: 20:51	MDL.....: 0.061	
Cadmium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWCE51A
		Dilution Factor: 1		Analysis Time..: 20:51	MDL.....: 0.022	
Chromium	**1.0 J**	**1.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWCE51AK**
		Dilution Factor: 1		Analysis Time..: 20:51	MDL.....: 0.24	
Lead	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWCE51AF
		Dilution Factor: 1		Analysis Time..: 20:51	MDL.....: 0.15	
Antimony	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWCE51AC
		Dilution Factor: 1		Analysis Time..: 20:51	MDL.....: 0.040	
Selenium	**0.24 B**	**5.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWCE51AG**
		Dilution Factor: 1		Analysis Time..: 20:51	MDL.....: 0.19	
Thallium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWCE51AJ
		Dilution Factor: 1		Analysis Time..: 20:51	MDL.....: 0.015	
Prep Batch #...: 2085309						
Mercury	ND	0.20	ug/L	SW846 7470A	04/01/02	EWCE51AL
		Dilution Factor: 1		Analysis Time..: 22:00	MDL.....: 0.028	

NOTE(S):

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

TOTAL Metals

Lot-Sample #...: D2C130228-003 **Matrix.....:** WG
Date Sampled...: 03/12/02 11:10 **Date Received..:** 03/13/02

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2078272						
Aluminum	ND	100	ug/L	SW846 6010B	03/21-03/22/02	EWCE61A2
		Dilution Factor: 1		Analysis Time..: 17:01	MDL.....: 20.0	
Barium	**28.1**	**10.0**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCE61A3**
		Dilution Factor: 1		Analysis Time..: 23:26	MDL.....: 0.49	
Beryllium	ND	2.0	ug/L	SW846 6010B	03/21-03/22/02	EWCE61A4
		Dilution Factor: 1		Analysis Time..: 23:26	MDL.....: 0.22	
Calcium	**41700**	**200**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCE61CE**
		Dilution Factor: 1		Analysis Time..: 17:01	MDL.....: 31.0	
Cobalt	ND	10.0	ug/L	SW846 6010B	03/21-03/22/02	EWCE61CA
		Dilution Factor: 1		Analysis Time..: 23:26	MDL.....: 0.92	
Copper	ND	20.0	ug/L	SW846 6010B	03/21-03/22/02	EWCE61A5
		Dilution Factor: 1		Analysis Time..: 23:26	MDL.....: 4.2	
Iron	**290**	**100**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCE61A6**
		Dilution Factor: 1		Analysis Time..: 17:01	MDL.....: 13.0	
Potassium	**6090**	**3000**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCE61CG**
		Dilution Factor: 1		Analysis Time..: 17:01	MDL.....: 490	
Magnesium	**39900**	**200**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCE61CF**
		Dilution Factor: 1		Analysis Time..: 17:01	MDL.....: 24.0	
Manganese	**18.0**	**10.0**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCE61A7**
		Dilution Factor: 1		Analysis Time..: 23:26	MDL.....: 0.49	
Sodium	**49800**	**5000**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCE61CH**
		Dilution Factor: 1		Analysis Time..: 17:01	MDL.....: 1500	
Nickel	**43.0**	**40.0**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWCE61A8**
		Dilution Factor: 1		Analysis Time..: 23:26	MDL.....: 4.1	
Tin	ND	100	ug/L	SW846 6010B	03/21-03/27/02	EWCE61CC
		Dilution Factor: 1		Analysis Time..: 16:15	MDL.....: 3.4	

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

TOTAL Metals

Lot-Sample #...: D2C130228-003 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	24.2	10.0	ug/L	SW846 6010B	03/21-03/22/02	EWCE61A9
		Dilution Factor: 1		Analysis Time..: 23:26	MDL.....: 2.2	
Zinc	3.3 B	20.0	ug/L	SW846 6010B	03/21-03/22/02	EWCE61AA
		Dilution Factor: 1		Analysis Time..: 23:26	MDL.....: 3.3	
Molybdenum	4.7 B	20.0	ug/L	SW846 6010B	03/21-03/22/02	EWCE61CD
		Dilution Factor: 1		Analysis Time..: 23:26	MDL.....: 2.1	
Prep Batch #...: 2078476						
Silver	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWCE61AH
		Dilution Factor: 1		Analysis Time..: 20:55	MDL.....: 0.012	
Arsenic	4.7 B	5.0	ug/L	SW846 6020	03/25-03/27/02	EWCE61AD
		Dilution Factor: 1		Analysis Time..: 20:55	MDL.....: 0.061	
Cadmium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWCE61A
		Dilution Factor: 1		Analysis Time..: 20:55	MDL.....: 0.022	
Chromium	16.6 J	1.0	ug/L	SW846 6020	03/25-03/27/02	EWCE61AK
		Dilution Factor: 1		Analysis Time..: 20:55	MDL.....: 0.24	
Lead	0.18 B	1.0	ug/L	SW846 6020	03/25-03/27/02	EWCE61AF
		Dilution Factor: 1		Analysis Time..: 20:55	MDL.....: 0.15	
Antimony	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWCE61AC
		Dilution Factor: 1		Analysis Time..: 20:55	MDL.....: 0.040	
Selenium	6.6	5.0	ug/L	SW846 6020	03/25-03/27/02	EWCE61AG
		Dilution Factor: 1		Analysis Time..: 20:55	MDL.....: 0.19	
Thallium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWCE61AJ
		Dilution Factor: 1		Analysis Time..: 20:55	MDL.....: 0.015	
Prep Batch #...: 2085309						
Mercury	ND	0.20	ug/L	SW846 7470A	04/01/02	EWCE61AL
		Dilution Factor: 1		Analysis Time..: 22:02	MDL.....: 0.028	

NOTE(S):

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

General Chemistry

Lot-Sample #...: D2C130228-001 **Work Order #...:** EWCEN **Matrix.....:** WG
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	**0.0065 B**	**0.010**	**mg/L**	**SW846 9012A**	**03/18-03/20/02**	**2077516**
		Dilution Factor: 1		Analysis Time..: 13:00	MDL.....: 0.0020	
Perchlorate	ND	20.0	ug/L	EPA 314.0	03/15/02	2077520
		Dilution Factor: 1		Analysis Time..: 11:44	MDL.....: 1.5	
Total Organic Carbon	ND	1.0	mg/L	SW846 9060	04/02-04/03/02	2093358
		Dilution Factor: 1		Analysis Time..: 00:00	MDL.....: 0.34	
Total Organic Halogens	**4.5 B**	**30.0**	**ug/L**	**SW846 9020B**	**03/18-03/19/02**	**2080258**
		Dilution Factor: 1		Analysis Time..: 12:00	MDL.....: 4.5	
Total Sulfide	ND	4.0	mg/L	SW846 9030B/9034	03/19/02	2080204
		Dilution Factor: 1		Analysis Time..: 12:00	MDL.....: 0.97	

OTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D-1

General Chemistry

Lot-Sample #...: D2C130228-002 **Work Order #...:** EWCE5 **Matrix.....:** WG
Date Sampled...: 03/12/02 13:20 **Date Received..:** 03/13/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	**0.0068 B**	**0.010**	**mg/L**	**SW846 9012A**	**03/18-03/20/02**	**2077516**
		Dilution Factor: 1		Analysis Time..: 13:00	MDL.....: 0.0020	
Perchlorate	ND	20.0	ug/L	EPA 314.0	03/15-03/16/02	2077520
		Dilution Factor: 1		Analysis Time..: 00:40	MDL.....: 1.5	
Total Organic Carbon	ND	1.0	mg/L	SW846 9060	04/02-04/03/02	2093358
		Dilution Factor: 1		Analysis Time..: 10:00	MDL.....: 0.34	
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	03/18/02	2080258
		Dilution Factor: 1		Analysis Time..: 12:00	MDL.....: 4.5	
Total Sulfide	ND	4.0	mg/L	SW846 9030B/9034	03/19/02	2080204
		Dilution Factor: 1		Analysis Time..: 12:00	MDL.....: 0.97	

NOTE(S):

RL Reporting Limit

B Estimated Result. Result is less than RL.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

General Chemistry

Lot-Sample #...: D2C130228-003 **Work Order #...:** EWCE6 **Matrix.....:** WG
Date Sampled...: 03/12/02 11:10 **Date Received..:** 03/13/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	**0.0060 B**	**0.010**	**mg/L**	**SW846 9012A**	**03/18-03/20/02**	**2077516**
		Dilution Factor: 1		Analysis Time..: 13:00	MDL.....: 0.0020	
Perchlorate	ND	20.0	ug/L	EPA 314.0	03/15-03/16/02	2077520
		Dilution Factor: 1		Analysis Time..: 00:59	MDL.....: 1.5	
Total Organic Carbon	**0.69 B**	**1.0**	**mg/L**	**SW846 9060**	**04/02-04/03/02**	**2093358**
		Dilution Factor: 1		Analysis Time..: 10:00	MDL.....: 0.34	
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	03/18-03/19/02	2080258
		Dilution Factor: 1		Analysis Time..: 12:00	MDL.....: 4.5	
Total Sulfide	ND	4.0	mg/L	SW846 9030B/9034	03/19/02	2080204
		Dilution Factor: 1		Analysis Time..: 12:00	MDL.....: 0.97	

OTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

APPENDIX II

Analytical Results from Sevrn Trent Services Laboratory
for Ground-Water Samples Collected March 13, 2002
Report # D2C140285

SEVERN TRENT SERVICES

STL Denver

ANALYTICAL REPORT

Cannon AFB

Lot #: D2C140285

Richard Daddow

U.S. Geological Survey

STL DENVER

Karen Kuoppala
Project Manager

April 12, 2002

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.)*	183

- 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 D2C140285

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 with any exceptions noted below. 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.

This report contains the results for the five samples and one trip blank received under chain of custody on March 14, 2002.

Sample Receiving
The samples were received at temperatures of 5.1, 2.2, 0.5, 5.2, and 3.4°C.

GC/MS Volatile Organics, SW846 8260B
The MS/MSD was performed on a sample from another client and/or lot.

GC/MS Semi-Volatile Organics, SW846 8270C
Sample D2C140285-001 demonstrated low recoveries for several surrogate compounds. The sample was re-extracted outside the hold time, and the surrogates recovered within the control limits. The results of both analyses have been reported.

Sample D2C140285-002 demonstrated a recovery of the surrogate nitrobenzene-d5 below the lower control limits. The sample was not re-extracted due to an expired hold time.

A MS/MSD was not requested and the laboratory was unable to designate one due to limited sample volume.

GC Semi-Volatile Organics – Pesticides, SW846 8081A
A MS/MSD was not requested and the laboratory was unable to designate one due to limited sample volume.

GC Semi-Volatile Organics – PCBs, SW846 8082
A MS/MSD was not requested and the laboratory was unable to designate one due to limited sample volume.

GC Semi-Volatile Organics – Herbicides, SW846 8151A
Sample D2C140285-001 demonstrated a recovery of the surrogate DCAA below the lower control limits and less than 10%. The sample was re-extracted outside the hold time and the surrogate recovered within the control limits. The results of both analyses have been reported.

A MS/MSD was not requested and the laboratory was unable to designate one due to limited sample volume.

Dioxins – SW846 8280A

The MS/MSD was performed on a sample from another lot and/or client.

HPLC Semi-Volatile Organics – PAHs, SW846 8310

A MS/MSD was not requested and the laboratory was unable to designate one due to limited sample volume.

Total Metals, SW846 6010B, 6020, 7470A

Chromium was detected in the method blank at a concentration below the reporting limit, but above the method detection limit. Associated positive sample results are flagged "J".

The MS/MSDs were performed on a sample from another client and/or lot.

General Chemistry, SW846 9012A, 9020, 9030B/9034, 9060, EPA 314.0

TOC was detected in the method blank at a concentration below the reporting limit, but above the method detection limit. Associated positive sample results are flagged "B".

The method 9060 MS/MSD performed on sample D2C140285-001 was in control for all recoveries and RPDs.

The method 9012A MS/MSD performed on sample D2C140285-001 was in control for all recoveries and RPDs.

All other MS/MSDs were performed on samples from another client and/or lot.

EXECUTIVE SUMMARY - Detection Highlights

D2C140285

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
CAFB-B 03/13/02 10:30 001				
Arsenic	4.6 B	5.0	ug/L	SW846 6020
Chromium	1.9 J	1.0	ug/L	SW846 6020
Lead	0.22 B	1.0	ug/L	SW846 6020
Selenium	6.2	5.0	ug/L	SW846 6020
Molybdenum	4.1 B	20.0	ug/L	SW846 6010B
Barium	25.1	10.0	ug/L	SW846 6010B
Calcium	36100	200	ug/L	SW846 6010B
Iron	43.0 B	100	ug/L	SW846 6010B
Potassium	5930	3000	ug/L	SW846 6010B
Magnesium	35200	200	ug/L	SW846 6010B
Manganese	2.0 B	10.0	ug/L	SW846 6010B
Sodium	53400	5000	ug/L	SW846 6010B
Vanadium	22.7	10.0	ug/L	SW846 6010B
Total Organic Carbon	0.38 B,J	1.0	mg/L	SW846 9060
Cyanide, Total	0.0052 B	0.010	mg/L	SW846 9012A
CAFB-U 03/13/02 11:50 002				
Chromium	1.8 J	1.0	ug/L	SW846 6020
Selenium	6.3	5.0	ug/L	SW846 6020
Arsenic	4.3 B	5.0	ug/L	SW846 6020
Molybdenum	4.7 B	20.0	ug/L	SW846 6010B
Calcium	44200	200	ug/L	SW846 6010B
Iron	20.9 B	100	ug/L	SW846 6010B
Potassium	6550	3000	ug/L	SW846 6010B
Magnesium	39900	200	ug/L	SW846 6010B
Manganese	2.1 B	10.0	ug/L	SW846 6010B
Sodium	55700	5000	ug/L	SW846 6010B
Vanadium	23.8	10.0	ug/L	SW846 6010B
Zinc	5.3 B	20.0	ug/L	SW846 6010B
Aluminum	20.4 B	100	ug/L	SW846 6010B
Barium	26.9	10.0	ug/L	SW846 6010B
Total Organic Carbon	1.2 J	1.0	mg/L	SW846 9060
Cyanide, Total	0.0081 B	0.010	mg/L	SW846 9012A
CAFB-T 03/13/02 13:15 003				
Silver	0.030 B	1.0	ug/L	SW846 6020
Arsenic	4.7 B	5.0	ug/L	SW846 6020
Chromium	2.5 J	1.0	ug/L	SW846 6020
Selenium	7.8	5.0	ug/L	SW846 6020
Molybdenum	3.8 B	20.0	ug/L	SW846 6010B
Zinc	12.0 B	20.0	ug/L	SW846 6010B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

D2C140285

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
CAFB-T 03/13/02 13:15 003				
Aluminum	55.8 B	100	ug/L	SW846 6010B
Barium	33.5	10.0	ug/L	SW846 6010B
Calcium	46900	200	ug/L	SW846 6010B
Iron	115	100	ug/L	SW846 6010B
Potassium	6800	3000	ug/L	SW846 6010B
Magnesium	44600	200	ug/L	SW846 6010B
Manganese	4.2 B	10.0	ug/L	SW846 6010B
Sodium	57000	5000	ug/L	SW846 6010B
Vanadium	24.8	10.0	ug/L	SW846 6010B
Total Organic Carbon	1.1 J	1.0	mg/L	SW846 9060
Cyanide, Total	0.0056 B	0.010	mg/L	SW846 9012A
CAFB-S 03/13/02 14:30 004				
Arsenic	4.5 B	5.0	ug/L	SW846 6020
Chromium	1.8 J	1.0	ug/L	SW846 6020
Lead	0.15 B	1.0	ug/L	SW846 6020
Selenium	5.9	5.0	ug/L	SW846 6020
Molybdenum	5.1 B	20.0	ug/L	SW846 6010B
Barium	31.7	10.0	ug/L	SW846 6010B
Calcium	44700	200	ug/L	SW846 6010B
Iron	28.1 B	100	ug/L	SW846 6010B
Potassium	6590	3000	ug/L	SW846 6010B
Magnesium	42900	200	ug/L	SW846 6010B
Manganese	3.6 B	10.0	ug/L	SW846 6010B
Sodium	51600	5000	ug/L	SW846 6010B
Vanadium	25.3	10.0	ug/L	SW846 6010B
Zinc	18.0 B	20.0	ug/L	SW846 6010B
Trichloroethene	1.6	1.0	ug/L	SW846 8260B
Chloromethane	0.43 J	2.0	ug/L	SW846 8260B
Total Organic Carbon	0.43 B,J	1.0	mg/L	SW846 9060
Cyanide, Total	0.0052 B	0.010	mg/L	SW846 9012A
CAFB-C 03/13/02 09:00 005				
Arsenic	5.8	5.0	ug/L	SW846 6020
Chromium	1.6 J	1.0	ug/L	SW846 6020
Selenium	0.86 B	5.0	ug/L	SW846 6020
Molybdenum	4.7 B	20.0	ug/L	SW846 6010B
Barium	36.4	10.0	ug/L	SW846 6010B
Calcium	28800	200	ug/L	SW846 6010B
Iron	17.0 B	100	ug/L	SW846 6010B
Potassium	5600	3000	ug/L	SW846 6010B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

D2C140285

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
CAFB-C 03/13/02 09:00 005				
Magnesium	29000	200	ug/L	SW846 6010B
Manganese	0.95 B	10.0	ug/L	SW846 6010B
Sodium	48000	5000	ug/L	SW846 6010B
Vanadium	38.9	10.0	ug/L	SW846 6010B
Zinc	8.0 B	20.0	ug/L	SW846 6010B
Total Organic Carbon	0.62 B,J	1.0	mg/L	SW846 9060
Cyanide, Total	0.0059 B	0.010	mg/L	SW846 9012A

METHODS SUMMARY

D2C140285

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

D2C140285

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	Roger Bain	018049
SW846 8151A	Sonya Dacar	011595
SW846 8260B	Mike Armstrong	002544
SW846 8270C	Joann Peterson	011674
SW846 8280A	Mark Onishi	001984
SW846 8310	Sonya Dacar	011595
SW846 9012A	Ewa Kudla	001167
SW846 9020B	Duane Allee	001470
SW846 9030B/9034	Roger Winn	000597
SW846 9060	Dave Elkin	000901

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

D2C140285

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
EWEHG	001	CAFB-B	03/13/02	10:30
EWEJG	002	CAFB-U	03/13/02	11:50
EWEJL	003	CAFB-T	03/13/02	13:15
EWEJR	004	CAFB-S	03/13/02	14:30
EWEJ5	005	CAFB-C	03/13/02	09:00
EWEJ9	006	CAFB-C-TB	03/13/02	08:00

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-B

GC/MS Volatiles

Lot-Sample #...: D2C140285-001 Work Order #...: EWEHG1AA Matrix.....: WG
Date Sampled...: 03/13/02 10:30 Date Received..: 03/14/02
Prep Date.....: 03/25/02 Analysis Date..: 03/25/02
Prep Batch #...: 2085241 Analysis Time..: 19:06
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

GC/MS Volatiles

Lot-Sample #...: D2C140285-001 **Work Order #...:** EWEHG1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	4.0	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	ND	1.0	ug/L	0.24
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	95	(80 - 120)
1,2-Dichloroethane-d4	88	(72 - 127)
4-Bromofluorobenzene	91	(79 - 119)
Toluene-d8	104	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-B

GC/MS Volatiles

Lot-Sample #: D2C140285-001 **Work Order #:** EWEHG1AA **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-U

GC/MS Volatiles

Lot-Sample #...: D2C140285-002 **Work Order #...:** EWEJG1AM **Matrix.....:** WG
Date Sampled...: 03/13/02 11:50 **Date Received..:** 03/14/02
Prep Date.....: 03/25/02 **Analysis Date..:** 03/25/02
Prep Batch #...: 2085241 **Analysis Time..:** 19:31
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

GC/MS Volatiles

Lot-Sample #...: D2C140285-002 Work Order #...: EWEJG1AM Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	4.0	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	ND	1.0	ug/L	0.24
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	95	(80 - 120)
1,2-Dichloroethane-d4	87	(72 - 127)
4-Bromofluorobenzene	94	(79 - 119)
Toluene-d8	106	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-U

GC/MS Volatiles

Lot-Sample #: D2C140285-002 **Work Order #:** EWEJG1AM **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-T

GC/MS Volatiles

Lot-Sample #...: D2C140285-003 **Work Order #...:** EWEJL1AM **Matrix.....:** WG
Date Sampled...: 03/13/02 13:15 **Date Received..:** 03/14/02
Prep Date.....: 03/25/02 **Analysis Date..:** 03/25/02
Prep Batch #...: 2085241 **Analysis Time..:** 19:56
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

GC/MS Volatiles

Lot-Sample #...: D2C140285-003 **Work Order #...:** EWEJL1AM **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	4.0	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	ND	1.0	ug/L	0.24
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	93	(80 - 120)
1,2-Dichloroethane-d4	86	(72 - 127)
4-Bromofluorobenzene	94	(79 - 119)
Toluene-d8	104	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-T

GC/MS Volatiles

Lot-Sample #: D2C140285-003 **Work Order #:** EWEJL1AM **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Silane, fluorotrimethyl-	420-56-4	1.22 J T2 M	5.0273	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 Volatiles

Lot-Sample #...: D2C140285-004 **Work Order #...:** EWEJR1AM **Matrix.....:** WG
Date Sampled...: 03/13/02 14:30 **Date Received..:** 03/14/02
Prep Date.....: 03/25/02 **Analysis Date..:** 03/25/02
Prep Batch #...: 2085241 **Analysis Time..:** 20:21
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	4.0	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	**1.6**	**1.0**	**ug/L**	**0.24**
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	**0.43 J**	**2.0**	**ug/L**	**0.26**
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

GC/MS Volatiles

Lot-Sample #...: D2C140285-004 **Work Order #...:** EWEJR1AM **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	93	(80 - 120)
1,2-Dichloroethane-d4	86	(72 - 127)
4-Bromofluorobenzene	92	(79 - 119)
Toluene-d8	104	(79 - 119)

NOTE(S):

J Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

CAFB-S

GC/MS Volatiles

Lot-Sample #: D2C140285-004 **Work Order #:** EWEJR1AM **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-C

GC/MS Volatiles

Lot-Sample #...: D2C140285-005 Work Order #...: EWEJ51AM Matrix.....: WG
Date Sampled...: 03/13/02 09:00 Date Received..: 03/14/02
Prep Date.....: 03/25/02 Analysis Date..: 03/25/02
Prep Batch #...: 2085241 Analysis Time..: 20:46
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

GC/MS Volatiles

Lot-Sample #...: D2C140285-005 **Work Order #...:** EWEJ51AM **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	4.0	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	ND	1.0	ug/L	0.24
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	93	(80 - 120)
1,2-Dichloroethane-d4	83	(72 - 127)
4-Bromofluorobenzene	92	(79 - 119)
Toluene-d8	107	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-C

GC/MS Volatiles

Lot-Sample #: D2C140285-005 **Work Order #:** EWEJ51AM **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-C-TB

GC/MS Volatiles

Lot-Sample #...: D2C140285-006 **Work Order #...:** EWEJ91AA **Matrix.....:** WQ
Date Sampled...: 03/13/02 08:00 **Date Received..:** 03/14/02
Prep Date.....: 03/25/02 **Analysis Date..:** 03/25/02
Prep Batch #...: 2085241 **Analysis Time..:** 21:11
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
ibromochloromethane	ND	1.0	ug/L	0.37
nloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C-TB

GC/MS Volatiles

Lot-Sample #...: D2C140285-006 Work Order #...: EWEJ91AA Matrix.....: WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	4.0	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	ND	1.0	ug/L	0.24
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(80 - 120)
1,2-Dichloroethane-d4	81	(72 - 127)
4-Bromofluorobenzene	91	(79 - 119)
Toluene-d8	106	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-C-TB

GC/MS Volatiles

Lot-Sample #: D2C140285-006 **Work Order #:** EWEJ91AA **Matrix:** WQ

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 Semivolatiles

Lot-Sample #...: D2C140285-001 **Work Order #...:** EWEHG1AC **Matrix.....:** WG
Date Sampled...: 03/13/02 10:30 **Date Received..:** 03/14/02
Prep Date.....: 03/20/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2079198 **Analysis Time..:** 18:48
Dilution Factor: 1

Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	10	ug/L	1.0
Acenaphthylene	ND	10	ug/L	1.0
Acetophenone	ND	10	ug/L	1.4
2-Acetylaminofluorene	ND	100	ug/L	1.8
4-Aminobiphenyl	ND	50	ug/L	1.6
Aniline	ND	10	ug/L	1.2
Anthracene	ND	10	ug/L	1.2
Benzo(a)anthracene	ND	10	ug/L	1.3
Benzo(b)fluoranthene	ND	10	ug/L	2.2
Benzo(k)fluoranthene	ND	10	ug/L	2.2
Benzo(ghi)perylene	ND	10	ug/L	1.1
Benzo(a)pyrene	ND	10	ug/L	1.9
Benzyl alcohol	ND	10	ug/L	3.0
bis(2-Chloroethoxy) methane	ND	10	ug/L	1.4
bis(2-Chloroethyl)-ether	ND	10	ug/L	1.8
bis(2-Ethylhexyl) phthalate	ND	10	ug/L	1.9
4-Bromophenyl phenyl ether	ND	10	ug/L	1.3
Butyl benzyl phthalate	ND	10	ug/L	1.9
4-Chloroaniline	ND	10	ug/L	7.3
4-Chloro-3-methylphenol	ND	10	ug/L	1.3
2-Chloronaphthalene	ND	10	ug/L	1.4
2-Chlorophenol	ND	10	ug/L	1.5
4-Chlorophenyl phenyl ether	ND	10	ug/L	1.5
Chrysene	ND	10	ug/L	1.5
Dibenz(a,h)anthracene	ND	10	ug/L	1.6
Dibenzofuran	ND	10	ug/L	1.3
Di-n-butyl phthalate	ND	10	ug/L	2.1
1,2-Dichlorobenzene	ND	10	ug/L	1.9
1,3-Dichlorobenzene	ND	10	ug/L	2.5
1,4-Dichlorobenzene	ND	10	ug/L	2.2
3,3'-Dichlorobenzidine	ND	50	ug/L	16
2,4-Dichlorophenol	ND	10	ug/L	1.7
2,6-Dichlorophenol	ND	10	ug/L	2.1

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

GC/MS Semivolatiles

Lot-Sample #...: D2C140285-001 Work Order #...: EWEHG1AC Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Diethyl phthalate	ND	10	ug/L	2.0
4-Dimethylaminoazobenzene	ND	20	ug/L	3.2
7,12-Dimethylbenz(a)-anthracene	ND	20	ug/L	1.5
3,3'-Dimethylbenzidine	ND	20	ug/L	10
alpha,alpha-Dimethylphenethylamine	ND	50	ug/L	13
2,4-Dimethylphenol	ND	10	ug/L	2.1
Dimethyl phthalate	ND	10	ug/L	1.8
Di-n-octyl phthalate	ND	10	ug/L	2.0
1,3-Dinitrobenzene	ND	10	ug/L	2.5
4,6-Dinitro-2-methylphenol	ND	50	ug/L	15
2,4-Dinitrophenol	ND	50	ug/L	16
2,4-Dinitrotoluene	ND	10	ug/L	2.4
2,6-Dinitrotoluene	ND	10	ug/L	2.3
Diphenylamine	ND	10	ug/L	1.4
Ethyl methanesulfonate	ND	10	ug/L	2.7
Fluoranthene	ND	10	ug/L	2.0
Fluorene	ND	10	ug/L	1.4
Hexachlorobenzene	ND	10	ug/L	1.5
Hexachlorobutadiene	ND	10	ug/L	3.3
Hexachlorocyclopentadiene	ND	50	ug/L	9.1
Hexachloroethane	ND	10	ug/L	3.0
Hexachloropropene	ND	100	ug/L	1.5
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	1.3
Isophorone	ND	10	ug/L	1.6
Isosafrole	ND	20	ug/L	1.9
Methapyrilene	ND	50	ug/L	18
3-Methylcholanthrene	ND	20	ug/L	4.8
Methyl methanesulfonate	ND	10	ug/L	6.0
2-Methylnaphthalene	ND	10	ug/L	1.9
2-Methylphenol	ND	10	ug/L	1.6
3-Methylphenol	ND	10	ug/L	1.4
4-Methylphenol	ND	10	ug/L	1.4
Naphthalene	ND	10	ug/L	1.4
1,4-Naphthoquinone	ND	50	ug/L	1.8
1-Naphthylamine	ND	10	ug/L	3.3
2-Naphthylamine	ND	10	ug/L	2.6
2-Nitroaniline	ND	50	ug/L	1.6
3-Nitroaniline	ND	50	ug/L	6.7
4-Nitroaniline	ND	50	ug/L	4.4

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

GC/MS Semivolatiles

Lot-Sample #...: D2C140285-001 **Work Order #...:** EWEHG1AC **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Nitrobenzene	ND	10	ug/L	1.7
2-Nitrophenol	ND	10	ug/L	1.7
4-Nitrophenol	ND	50	ug/L	7.1
N-Nitrosodi-n-butylamine	ND	10	ug/L	1.8
N-Nitrosodiethylamine	ND	10	ug/L	1.6
N-Nitrosodimethylamine	ND	10	ug/L	1.7
N-Nitrosodi-n-propyl-amine	ND	10	ug/L	1.8
N-Nitrosodiphenylamine	ND	10	ug/L	5.3
N-Nitrosomethylethylamine	ND	10	ug/L	3.0
N-Nitrosomorpholine	ND	10	ug/L	3.9
N-Nitrosopiperidine	ND	10	ug/L	1.9
N-Nitrosopyrrolidine	ND	10	ug/L	2.4
5-Nitro-o-toluidine	ND	20	ug/L	3.0
Pentachlorobenzene	ND	10	ug/L	1.2
Pentachloroethane	ND	50	ug/L	1.9
Pentachloronitrobenzene	ND	50	ug/L	2.0
Pentachlorophenol	ND	50	ug/L	7.7
Phenacetin	ND	20	ug/L	4.2
Phenanthrene	ND	10	ug/L	1.2
Phenol	ND	10	ug/L	1.4
2-Picoline	ND	20	ug/L	1.2
Pronamide	ND	20	ug/L	1.4
Pyrene	ND	10	ug/L	1.7
Pyridine	ND	20	ug/L	12
Safrole	ND	20	ug/L	2.0
1,2,4,5-Tetrachloro-benzene	ND	10	ug/L	1.9
2,3,4,6-Tetrachlorophenol	ND	50	ug/L	2.2
1,2,4-Trichloro-benzene	ND	10	ug/L	1.8
2,4,5-Trichloro-phenol	ND	10	ug/L	1.1
2,4,6-Trichloro-phenol	ND	10	ug/L	1.1
1,3,5-Trinitrobenzene	ND	50	ug/L	1.4
Aramite	ND	20	ug/L	5.3
2,2'-oxybis(1-Chloropropane)	ND	10	ug/L	1.3
2-sec-Butyl-4,6-dinitro-phenol	ND	20	ug/L	1.1
2-Toluidine	ND	10	ug/L	1.2

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

GC/MS Semivolatiles

Lot-Sample #...: D2C140285-001 **Work Order #...:** EWEHG1AC **Matrix.....:** WG

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	44 *	(51 - 99)
Phenol-d5	45 *	(52 - 99)
Nitrobenzene-d5	44 *	(57 - 97)
2-Fluorobiphenyl	41 *	(49 - 98)
2,4,6-Tribromophenol	41 *	(53 - 108)
Terphenyl-d14	47	(38 - 119)

NOTE(S):

* Surrogate recovery is outside stated control limits.

US GEOLOGICAL SURVEY

CAFB-B

GC/MS Semivolatiles

Lot-Sample #: D2C140285-001 **Work Order #:** EWEHG1AC **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		7.7 J	M	4.0022	ug/L
Unknown		7.4 J	M	4.7887	ug/L
Unknown		19 J	M	4.8578	ug/L
Unknown		0.0	M	12.893	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 #...: D2C140285-001 **Work Order #...:** EWEHG2AC **Matrix.....:** WG
Date Sampled...: 03/13/02 10:30 **Date Received..:** 03/14/02
Prep Date.....: 03/29/02 **Analysis Date..:** 04/03/02
Prep Batch #...: 2088308 **Analysis Time..:** 14:55
Dilution Factor: 1

Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2-Acetylaminofluorene	ND	100	ug/L	1.8
4-Aminobiphenyl	ND	50	ug/L	1.6
Aniline	ND	10	ug/L	1.2
Anthracene	ND	10	ug/L	1.2
Acenaphthylene	ND	10	ug/L	1.0
Acetophenone	ND	10	ug/L	1.4
Benzo(a)anthracene	ND	10	ug/L	1.3
Benzo(b)fluoranthene	ND	10	ug/L	2.2
Acenaphthene	ND	10	ug/L	1.0
Benzo(k)fluoranthene	ND	10	ug/L	2.2
Benzo(ghi)perylene	ND	10	ug/L	1.1
Benzo(a)pyrene	ND	10	ug/L	1.9
Benzyl alcohol	ND	10	ug/L	3.0
bis(2-Chloroethoxy) methane	ND	10	ug/L	1.4
bis(2-Chloroethyl)-ether	ND	10	ug/L	1.8
bis(2-Ethylhexyl) phthalate	ND	10	ug/L	1.9
4-Bromophenyl phenyl ether	ND	10	ug/L	1.3
Butyl benzyl phthalate	ND	10	ug/L	1.9
4-Chloroaniline	ND	10	ug/L	7.3
4-Chloro-3-methylphenol	ND	10	ug/L	1.3
2-Chloronaphthalene	ND	10	ug/L	1.4
2-Chlorophenol	ND	10	ug/L	1.5
4-Chlorophenyl phenyl ether	ND	10	ug/L	1.5
Chrysene	ND	10	ug/L	1.5
Dibenz(a,h)anthracene	ND	10	ug/L	1.6
Dibenzofuran	ND	10	ug/L	1.3
Di-n-butyl phthalate	ND	10	ug/L	2.1
1,2-Dichlorobenzene	ND	10	ug/L	1.9
1,3-Dichlorobenzene	ND	10	ug/L	2.5
1,4-Dichlorobenzene	ND	10	ug/L	2.2
3,3'-Dichlorobenzidine	ND	50	ug/L	16
2,4-Dichlorophenol	ND	10	ug/L	1.7
2,6-Dichlorophenol	ND	10	ug/L	2.1

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

GC/MS Semivolatiles

Lot-Sample #...: D2C140285-001 Work Order #...: EWEHG2AC Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Diethyl phthalate	ND	10	ug/L	2.0
4-Dimethylaminoazobenzene	ND	20	ug/L	3.2
7,12-Dimethylbenz(a)-anthracene	ND	20	ug/L	1.5
3,3'-Dimethylbenzidine	ND	20	ug/L	10
alpha,alpha-Dimethylphenethylamine	ND	50	ug/L	13
2,4-Dimethylphenol	ND	10	ug/L	2.1
Dimethyl phthalate	ND	10	ug/L	1.8
Di-n-octyl phthalate	ND	10	ug/L	2.0
1,3-Dinitrobenzene	ND	10	ug/L	2.5
4,6-Dinitro-2-methylphenol	ND	50	ug/L	15
2,4-Dinitrophenol	ND	50	ug/L	16
2,4-Dinitrotoluene	ND	10	ug/L	2.4
2,6-Dinitrotoluene	ND	10	ug/L	2.3
Diphenylamine	ND	10	ug/L	1.4
Ethyl methanesulfonate	ND	10	ug/L	2.7
Fluoranthene	ND	10	ug/L	2.0
Fluorene	ND	10	ug/L	1.4
Hexachlorobenzene	ND	10	ug/L	1.5
Hexachlorobutadiene	ND	10	ug/L	3.3
Hexachlorocyclopentadiene	ND	50	ug/L	9.1
Hexachloroethane	ND	10	ug/L	3.0
Hexachloropropene	ND	100	ug/L	1.5
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	1.3
Isophorone	ND	10	ug/L	1.6
Isosafrole	ND	20	ug/L	1.9
Methapyrilene	ND	50	ug/L	18
3-Methylcholanthrene	ND	20	ug/L	4.8
Methyl methanesulfonate	ND	10	ug/L	6.0
2-Methylnaphthalene	ND	10	ug/L	1.9
2-Methylphenol	ND	10	ug/L	1.6
3-Methylphenol	ND	10	ug/L	1.4
4-Methylphenol	ND	10	ug/L	1.4
Naphthalene	ND	10	ug/L	1.4
1,4-Naphthoquinone	ND	50	ug/L	1.8
1-Naphthylamine	ND	10	ug/L	3.3
2-Naphthylamine	ND	10	ug/L	2.6
2-Nitroaniline	ND	50	ug/L	1.6
3-Nitroaniline	ND	50	ug/L	6.7
4-Nitroaniline	ND	50	ug/L	4.4

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

GC/MS Semivolatiles

Lot-Sample #...: D2C140285-001 **Work Order #...:** EWEHG2AC **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Nitrobenzene	ND	10	ug/L	1.7
2-Nitrophenol	ND	10	ug/L	1.7
4-Nitrophenol	ND	50	ug/L	7.1
N-Nitrosodi-n-butylamine	ND	10	ug/L	1.8
N-Nitrosodiethylamine	ND	10	ug/L	1.6
N-Nitrosodimethylamine	ND	10	ug/L	1.7
N-Nitrosodi-n-propyl-amine	ND	10	ug/L	1.8
N-Nitrosodiphenylamine	ND	10	ug/L	5.3
N-Nitrosomethylethylamine	ND	10	ug/L	3.0
N-Nitrosomorpholine	ND	10	ug/L	3.9
N-Nitrosopiperidine	ND	10	ug/L	1.9
N-Nitrosopyrrolidine	ND	10	ug/L	2.4
5-Nitro-o-toluidine	ND	20	ug/L	3.0
Pentachlorobenzene	ND	10	ug/L	1.2
Pentachloroethane	ND	50	ug/L	1.9
Pentachloronitrobenzene	ND	50	ug/L	2.0
Pentachlorophenol	ND	50	ug/L	7.7
Phenacetin	ND	20	ug/L	4.2
Phenanthrene	ND	10	ug/L	1.2
Phenol	ND	10	ug/L	1.4
2-Picoline	ND	20	ug/L	1.2
Pronamide	ND	20	ug/L	1.4
Pyrene	ND	10	ug/L	1.7
Pyridine	ND	20	ug/L	12
Safrole	ND	20	ug/L	2.0
1,2,4,5-Tetrachloro-benzene	ND	10	ug/L	1.9
2,3,4,6-Tetrachlorophenol	ND	50	ug/L	2.2
1,2,4-Trichloro-benzene	ND	10	ug/L	1.8
2,4,5-Trichloro-phenol	ND	10	ug/L	1.1
2,4,6-Trichloro-phenol	ND	10	ug/L	1.1
1,3,5-Trinitrobenzene	ND	50	ug/L	1.4
Aramite	ND	20	ug/L	5.3
2,2'-oxybis(1-Chloropropane)	ND	10	ug/L	1.3
2-sec-Butyl-4,6-dinitro-phenol	ND	20	ug/L	1.1
2-Toluidine	ND	10	ug/L	1.2

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

GC/MS Semivolatiles

Lot-Sample #...: D2C140285-001 **Work Order #...:** EWEHG2AC **Matrix.....:** WG

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	73	(51 - 99)
Phenol-d5	72	(52 - 99)
Nitrobenzene-d5	77	(57 - 97)
2-Fluorobiphenyl	73	(49 - 98)
2,4,6-Tribromophenol	58	(53 - 108)
Terphenyl-d14	79	(38 - 119)

US GEOLOGICAL SURVEY

CAFB-B

GC/MS Semivolatiles

Lot-Sample #: D2C140285-001 **Work Order #:** EWEHG2AC **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		20 J	M	3.9228	ug/L
Unknown		4.5 J	M	4.72	ug/L
Unknown		15 J	M	4.7891	ug/L
Unknown		5.3 J	M	5.8679	ug/L
Unknown		0.0	M	12.952	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 Semivolatiles

Lot-Sample #...: D2C140285-002 **Work Order #...:** EWEJG1AN **Matrix.....:** WG
Date Sampled...: 03/13/02 11:50 **Date Received..:** 03/14/02
Prep Date.....: 03/20/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2079198 **Analysis Time..:** 19:13
Dilution Factor: 1

Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	10	ug/L	1.0
Acenaphthylene	ND	10	ug/L	1.0
Acetophenone	ND	10	ug/L	1.4
2-Acetylaminofluorene	ND	100	ug/L	1.8
4-Aminobiphenyl	ND	50	ug/L	1.6
Aniline	ND	10	ug/L	1.2
Anthracene	ND	10	ug/L	1.2
Benzo(a)anthracene	ND	10	ug/L	1.3
Benzo(b)fluoranthene	ND	10	ug/L	2.2
Benzo(k)fluoranthene	ND	10	ug/L	2.2
Benzo(ghi)perylene	ND	10	ug/L	1.1
Benzo(a)pyrene	ND	10	ug/L	1.9
Benzyl alcohol	ND	10	ug/L	3.0
bis(2-Chloroethoxy) methane	ND	10	ug/L	1.4
bis(2-Chloroethyl)-ether	ND	10	ug/L	1.8
bis(2-Ethylhexyl) phthalate	ND	10	ug/L	1.9
4-Bromophenyl phenyl ether	ND	10	ug/L	1.3
Butyl benzyl phthalate	ND	10	ug/L	1.9
4-Chloroaniline	ND	10	ug/L	7.3
4-Chloro-3-methylphenol	ND	10	ug/L	1.3
2-Chloronaphthalene	ND	10	ug/L	1.4
2-Chlorophenol	ND	10	ug/L	1.5
4-Chlorophenyl phenyl ether	ND	10	ug/L	1.5
Chrysene	ND	10	ug/L	1.5
Dibenz(a,h)anthracene	ND	10	ug/L	1.6
Dibenzofuran	ND	10	ug/L	1.3
Di-n-butyl phthalate	ND	10	ug/L	2.1
1,2-Dichlorobenzene	ND	10	ug/L	1.9
1,3-Dichlorobenzene	ND	10	ug/L	2.5
1,4-Dichlorobenzene	ND	10	ug/L	2.2
3,3'-Dichlorobenzidine	ND	50	ug/L	16
2,4-Dichlorophenol	ND	10	ug/L	1.7
2,6-Dichlorophenol	ND	10	ug/L	2.1

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

GC/MS Semivolatiles

Lot-Sample #...: D2C140285-002 **Work Order #...:** EWEJG1AN **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Diethyl phthalate	ND	10	ug/L	2.0
4-Dimethylaminoazobenzene	ND	20	ug/L	3.2
7,12-Dimethylbenz(a)-anthracene	ND	20	ug/L	1.5
3,3'-Dimethylbenzidine	ND	20	ug/L	10
alpha,alpha-Dimethylphenethylamine	ND	50	ug/L	13
2,4-Dimethylphenol	ND	10	ug/L	2.1
Dimethyl phthalate	ND	10	ug/L	1.8
Di-n-octyl phthalate	ND	10	ug/L	2.0
1,3-Dinitrobenzene	ND	10	ug/L	2.5
4,6-Dinitro-2-methylphenol	ND	50	ug/L	15
2,4-Dinitrophenol	ND	50	ug/L	16
2,4-Dinitrotoluene	ND	10	ug/L	2.4
2,6-Dinitrotoluene	ND	10	ug/L	2.3
Diphenylamine	ND	10	ug/L	1.4
Ethyl methanesulfonate	ND	10	ug/L	2.7
Fluoranthene	ND	10	ug/L	2.0
Fluorene	ND	10	ug/L	1.4
Hexachlorobenzene	ND	10	ug/L	1.5
Hexachlorobutadiene	ND	10	ug/L	3.3
Hexachlorocyclopentadiene	ND	50	ug/L	9.1
Hexachloroethane	ND	10	ug/L	3.0
Hexachloropropene	ND	100	ug/L	1.5
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	1.3
Isophorone	ND	10	ug/L	1.6
Isosafrole	ND	20	ug/L	1.9
Methapyrilene	ND	50	ug/L	18
3-Methylcholanthrene	ND	20	ug/L	4.8
Methyl methanesulfonate	ND	10	ug/L	6.0
2-Methylnaphthalene	ND	10	ug/L	1.9
2-Methylphenol	ND	10	ug/L	1.6
3-Methylphenol	ND	10	ug/L	1.4
4-Methylphenol	ND	10	ug/L	1.4
Naphthalene	ND	10	ug/L	1.4
1,4-Naphthoquinone	ND	50	ug/L	1.8
1-Naphthylamine	ND	10	ug/L	3.3
2-Naphthylamine	ND	10	ug/L	2.6
2-Nitroaniline	ND	50	ug/L	1.6
3-Nitroaniline	ND	50	ug/L	6.7
4-Nitroaniline	ND	50	ug/L	4.4

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

GC/MS Semivolatiles

Lot-Sample #...: D2C140285-002 Work Order #...: EWEJG1AN Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Nitrobenzene	ND	10	ug/L	1.7
2-Nitrophenol	ND	10	ug/L	1.7
4-Nitrophenol	ND	50	ug/L	7.1
N-Nitrosodi-n-butylamine	ND	10	ug/L	1.8
N-Nitrosodiethylamine	ND	10	ug/L	1.6
N-Nitrosodimethylamine	ND	10	ug/L	1.7
N-Nitrosodi-n-propyl-amine	ND	10	ug/L	1.8
N-Nitrosodiphenylamine	ND	10	ug/L	5.3
N-Nitrosomethylethylamine	ND	10	ug/L	3.0
N-Nitrosomorpholine	ND	10	ug/L	3.9
N-Nitrosopiperidine	ND	10	ug/L	1.9
N-Nitrosopyrrolidine	ND	10	ug/L	2.4
5-Nitro-o-toluidine	ND	20	ug/L	3.0
Pentachlorobenzene	ND	10	ug/L	1.2
Pentachloroethane	ND	50	ug/L	1.9
Pentachloronitrobenzene	ND	50	ug/L	2.0
Pentachlorophenol	ND	50	ug/L	7.7
Phenacetin	ND	20	ug/L	4.2
Phenanthrene	ND	10	ug/L	1.2
Phenol	ND	10	ug/L	1.4
2-Picoline	ND	20	ug/L	1.2
Pronamide	ND	20	ug/L	1.4
Pyrene	ND	10	ug/L	1.7
Pyridine	ND	20	ug/L	12
Safrole	ND	20	ug/L	2.0
1,2,4,5-Tetrachloro-benzene	ND	10	ug/L	1.9
2,3,4,6-Tetrachlorophenol	ND	50	ug/L	2.2
1,2,4-Trichloro-benzene	ND	10	ug/L	1.8
2,4,5-Trichloro-phenol	ND	10	ug/L	1.1
2,4,6-Trichloro-phenol	ND	10	ug/L	1.1
1,3,5-Trinitrobenzene	ND	50	ug/L	1.4
Aramite	ND	20	ug/L	5.3
2,2'-oxybis(1-Chloropropane)	ND	10	ug/L	1.3
2-sec-Butyl-4,6-dinitro-phenol	ND	20	ug/L	1.1
2-Toluidine	ND	10	ug/L	1.2

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

GC/MS Semivolatiles

Lot-Sample #...: D2C140285-002 Work Order #...: EWEJG1AN Matrix.....: WG

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	53	(51 - 99)
Phenol-d5	56	(52 - 99)
Nitrobenzene-d5	56 *	(57 - 97)
2-Fluorobiphenyl	50	(49 - 98)
2,4,6-Tribromophenol	55	(53 - 108)
Terphenyl-d14	63	(38 - 119)

NOTE(S):

* Surrogate recovery is outside stated control limits.

US GEOLOGICAL SURVEY

CAFB-U

GC/MS Semivolatiles

Lot-Sample #: D2C140285-002 **Work Order #:** EWEJG1AN **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		5.5 J	M	3.7362	ug/L
Unknown		7.8 J	M	4.0019	ug/L
Unknown		6.8 J	M	4.7937	ug/L
Unknown		17 J	M	4.8575	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 #...: D2C140285-003 **Work Order #...:** EWEJL1AN **Matrix.....:** WG
Date Sampled...: 03/13/02 13:15 **Date Received..:** 03/14/02
Prep Date.....: 03/20/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2079198 **Analysis Time..:** 19:37
Dilution Factor: 1

Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	10	ug/L	1.0
Acenaphthylene	ND	10	ug/L	1.0
Acetophenone	ND	10	ug/L	1.4
2-Acetylaminofluorene	ND	100	ug/L	1.8
4-Aminobiphenyl	ND	50	ug/L	1.6
Aniline	ND	10	ug/L	1.2
Anthracene	ND	10	ug/L	1.2
Benzo(a)anthracene	ND	10	ug/L	1.3
Benzo(b)fluoranthene	ND	10	ug/L	2.2
Benzo(k)fluoranthene	ND	10	ug/L	2.2
Benzo(ghi)perylene	ND	10	ug/L	1.1
Benzo(a)pyrene	ND	10	ug/L	1.9
enzyl alcohol	ND	10	ug/L	3.0
is(2-Chloroethoxy) methane	ND	10	ug/L	1.4
bis(2-Chloroethyl)-ether	ND	10	ug/L	1.8
bis(2-Ethylhexyl) phthalate	ND	10	ug/L	1.9
4-Bromophenyl phenyl ether	ND	10	ug/L	1.3
Butyl benzyl phthalate	ND	10	ug/L	1.9
4-Chloroaniline	ND	10	ug/L	7.3
4-Chloro-3-methylphenol	ND	10	ug/L	1.3
2-Chloronaphthalene	ND	10	ug/L	1.4
2-Chlorophenol	ND	10	ug/L	1.5
4-Chlorophenyl phenyl ether	ND	10	ug/L	1.5
Chrysene	ND	10	ug/L	1.5
Dibenz(a,h)anthracene	ND	10	ug/L	1.6
Dibenzofuran	ND	10	ug/L	1.3
Di-n-butyl phthalate	ND	10	ug/L	2.1
1,2-Dichlorobenzene	ND	10	ug/L	1.9
1,3-Dichlorobenzene	ND	10	ug/L	2.5
1,4-Dichlorobenzene	ND	10	ug/L	2.2
3,3'-Dichlorobenzidine	ND	50	ug/L	16
2,4-Dichlorophenol	ND	10	ug/L	1.7
2,6-Dichlorophenol	ND	10	ug/L	2.1

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

GC/MS Semivolatiles

Lot-Sample #...: D2C140285-003 **Work Order #...:** EWEJL1AN **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Diethyl phthalate	ND	10	ug/L	2.0
4-Dimethylaminoazobenzene	ND	20	ug/L	3.2
7,12-Dimethylbenz(a)-anthracene	ND	20	ug/L	1.5
3,3'-Dimethylbenzidine	ND	20	ug/L	10
alpha,alpha-Dimethylphenethylamine	ND	50	ug/L	13
2,4-Dimethylphenol	ND	10	ug/L	2.1
Dimethyl phthalate	ND	10	ug/L	1.8
Di-n-octyl phthalate	ND	10	ug/L	2.0
1,3-Dinitrobenzene	ND	10	ug/L	2.5
4,6-Dinitro-2-methylphenol	ND	50	ug/L	15
2,4-Dinitrophenol	ND	50	ug/L	16
2,4-Dinitrotoluene	ND	10	ug/L	2.4
2,6-Dinitrotoluene	ND	10	ug/L	2.3
Diphenylamine	ND	10	ug/L	1.4
Ethyl methanesulfonate	ND	10	ug/L	2.7
Fluoranthene	ND	10	ug/L	2.0
Fluorene	ND	10	ug/L	1.4
Hexachlorobenzene	ND	10	ug/L	1.5
Hexachlorobutadiene	ND	10	ug/L	3.3
Hexachlorocyclopentadiene	ND	50	ug/L	9.1
Hexachloroethane	ND	10	ug/L	3.0
Hexachloropropene	ND	100	ug/L	1.5
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	1.3
Isophorone	ND	10	ug/L	1.6
Isosafrole	ND	20	ug/L	1.9
Methapyrilene	ND	50	ug/L	18
3-Methylcholanthrene	ND	20	ug/L	4.8
Methyl methanesulfonate	ND	10	ug/L	6.0
2-Methylnaphthalene	ND	10	ug/L	1.9
2-Methylphenol	ND	10	ug/L	1.6
3-Methylphenol	ND	10	ug/L	1.4
4-Methylphenol	ND	10	ug/L	1.4
Naphthalene	ND	10	ug/L	1.4
1,4-Naphthoquinone	ND	50	ug/L	1.8
1-Naphthylamine	ND	10	ug/L	3.3
2-Naphthylamine	ND	10	ug/L	2.6
2-Nitroaniline	ND	50	ug/L	1.6
3-Nitroaniline	ND	50	ug/L	6.7
4-Nitroaniline	ND	50	ug/L	4.4

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

GC/MS Semivolatiles

Lot-Sample #...: D2C140285-003 **Work Order #...:** EWEJL1AN **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Nitrobenzene	ND	10	ug/L	1.7
2-Nitrophenol	ND	10	ug/L	1.7
4-Nitrophenol	ND	50	ug/L	7.1
N-Nitrosodi-n-butylamine	ND	10	ug/L	1.8
N-Nitrosodiethylamine	ND	10	ug/L	1.6
N-Nitrosodimethylamine	ND	10	ug/L	1.7
N-Nitrosodi-n-propyl-amine	ND	10	ug/L	1.8
N-Nitrosodiphenylamine	ND	10	ug/L	5.3
N-Nitrosomethylethylamine	ND	10	ug/L	3.0
N-Nitrosomorpholine	ND	10	ug/L	3.9
N-Nitrosopiperidine	ND	10	ug/L	1.9
N-Nitrosopyrrolidine	ND	10	ug/L	2.4
5-Nitro-o-toluidine	ND	20	ug/L	3.0
Pentachlorobenzene	ND	10	ug/L	1.2
Pentachloroethane	ND	50	ug/L	1.9
Pentachloronitrobenzene	ND	50	ug/L	2.0
entachlorophenol	ND	50	ug/L	7.7
henacetin	ND	20	ug/L	4.2
Phenanthrene	ND	10	ug/L	1.2
Phenol	ND	10	ug/L	1.4
2-Picoline	ND	20	ug/L	1.2
Pronamide	ND	20	ug/L	1.4
Pyrene	ND	10	ug/L	1.7
Pyridine	ND	20	ug/L	12
Safrole	ND	20	ug/L	2.0
1,2,4,5-Tetrachloro-benzene	ND	10	ug/L	1.9
2,3,4,6-Tetrachlorophenol	ND	50	ug/L	2.2
1,2,4-Trichloro-benzene	ND	10	ug/L	1.8
2,4,5-Trichloro-phenol	ND	10	ug/L	1.1
2,4,6-Trichloro-phenol	ND	10	ug/L	1.1
1,3,5-Trinitrobenzene	ND	50	ug/L	1.4
Aramite	ND	20	ug/L	5.3
2,2'-oxybis(1-Chloropropane)	ND	10	ug/L	1.3
2-sec-Butyl-4,6-dinitro-phenol	ND	20	ug/L	1.1
2-Toluidine	ND	10	ug/L	1.2

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

GC/MS Semivolatiles

Lot-Sample #...: D2C140285-003 Work Order #...: EWEJL1AN Matrix.....: WG

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	59	(51 - 99)
Phenol-d5	60	(52 - 99)
Nitrobenzene-d5	61	(57 - 97)
2-Fluorobiphenyl	54	(49 - 98)
2,4,6-Tribromophenol	58	(53 - 108)
Terphenyl-d14	63	(38 - 119)

US GEOLOGICAL SURVEY

CAFB-T

GC/MS Semivolatiles

Lot-Sample #: D2C140285-003 **Work Order #:** EWEJL1AN **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		9.0 J	M	4.0036	ug/L
Unknown		7.0 J	M	4.7901	ug/L
Unknown		17 J	M	4.8592	ug/L
Unknown		0.0	M	13.149	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 #...: D2C140285-004 **Work Order #...:** EWEJR1AN **Matrix.....:** WG
Date Sampled...: 03/13/02 14:30 **Date Received..:** 03/14/02
Prep Date.....: 03/20/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2079198 **Analysis Time..:** 20:02
Dilution Factor: 1

Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	10	ug/L	1.0
Acenaphthylene	ND	10	ug/L	1.0
Acetophenone	ND	10	ug/L	1.4
2-Acetylaminofluorene	ND	100	ug/L	1.8
4-Aminobiphenyl	ND	50	ug/L	1.6
Aniline	ND	10	ug/L	1.2
Anthracene	ND	10	ug/L	1.2
Benzo(a)anthracene	ND	10	ug/L	1.3
Benzo(b)fluoranthene	ND	10	ug/L	2.2
Benzo(k)fluoranthene	ND	10	ug/L	2.2
Benzo(ghi)perylene	ND	10	ug/L	1.1
Benzo(a)pyrene	ND	10	ug/L	1.9
Benzyl alcohol	ND	10	ug/L	3.0
bis(2-Chloroethoxy) methane	ND	10	ug/L	1.4
bis(2-Chloroethyl)-ether	ND	10	ug/L	1.8
bis(2-Ethylhexyl) phthalate	ND	10	ug/L	1.9
4-Bromophenyl phenyl ether	ND	10	ug/L	1.3
Butyl benzyl phthalate	ND	10	ug/L	1.9
4-Chloroaniline	ND	10	ug/L	7.3
4-Chloro-3-methylphenol	ND	10	ug/L	1.3
2-Chloronaphthalene	ND	10	ug/L	1.4
2-Chlorophenol	ND	10	ug/L	1.5
4-Chlorophenyl phenyl ether	ND	10	ug/L	1.5
Chrysene	ND	10	ug/L	1.5
Dibenz(a,h)anthracene	ND	10	ug/L	1.6
Dibenzofuran	ND	10	ug/L	1.3
Di-n-butyl phthalate	ND	10	ug/L	2.1
1,2-Dichlorobenzene	ND	10	ug/L	1.9
1,3-Dichlorobenzene	ND	10	ug/L	2.5
1,4-Dichlorobenzene	ND	10	ug/L	2.2
3,3'-Dichlorobenzidine	ND	50	ug/L	16
2,4-Dichlorophenol	ND	10	ug/L	1.7
2,6-Dichlorophenol	ND	10	ug/L	2.1

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

GC/MS Semivolatiles

Lot-Sample #...: D2C140285-004 **Work Order #...:** EWEJR1AN **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Diethyl phthalate	ND	10	ug/L	2.0
4-Dimethylaminoazobenzene	ND	20	ug/L	3.2
7,12-Dimethylbenz(a)-anthracene	ND	20	ug/L	1.5
3,3'-Dimethylbenzidine	ND	20	ug/L	10
alpha,alpha-Dimethylphenethylamine	ND	50	ug/L	13
2,4-Dimethylphenol	ND	10	ug/L	2.1
Dimethyl phthalate	ND	10	ug/L	1.8
Di-n-octyl phthalate	ND	10	ug/L	2.0
1,3-Dinitrobenzene	ND	10	ug/L	2.5
4,6-Dinitro-2-methylphenol	ND	50	ug/L	15
2,4-Dinitrophenol	ND	50	ug/L	16
2,4-Dinitrotoluene	ND	10	ug/L	2.4
2,6-Dinitrotoluene	ND	10	ug/L	2.3
Diphenylamine	ND	10	ug/L	1.4
Ethyl methanesulfonate	ND	10	ug/L	2.7
Fluoranthene	ND	10	ug/L	2.0
Fluorene	ND	10	ug/L	1.4
Hexachlorobenzene	ND	10	ug/L	1.5
Hexachlorobutadiene	ND	10	ug/L	3.3
Hexachlorocyclopentadiene	ND	50	ug/L	9.1
Hexachloroethane	ND	10	ug/L	3.0
Hexachloropropene	ND	100	ug/L	1.5
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	1.3
Isophorone	ND	10	ug/L	1.6
Isosafrole	ND	20	ug/L	1.9
Methapyrilene	ND	50	ug/L	18
3-Methylcholanthrene	ND	20	ug/L	4.8
Methyl methanesulfonate	ND	10	ug/L	6.0
2-Methylnaphthalene	ND	10	ug/L	1.9
2-Methylphenol	ND	10	ug/L	1.6
3-Methylphenol	ND	10	ug/L	1.4
4-Methylphenol	ND	10	ug/L	1.4
Naphthalene	ND	10	ug/L	1.4
1,4-Naphthoquinone	ND	50	ug/L	1.8
1-Naphthylamine	ND	10	ug/L	3.3
2-Naphthylamine	ND	10	ug/L	2.6
2-Nitroaniline	ND	50	ug/L	1.6
3-Nitroaniline	ND	50	ug/L	6.7
4-Nitroaniline	ND	50	ug/L	4.4

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

GC/MS Semivolatiles

Lot-Sample #...: D2C140285-004 **Work Order #...:** EWEJR1AN **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Nitrobenzene	ND	10	ug/L	1.7
2-Nitrophenol	ND	10	ug/L	1.7
4-Nitrophenol	ND	50	ug/L	7.1
N-Nitrosodi-n-butylamine	ND	10	ug/L	1.8
N-Nitrosodiethylamine	ND	10	ug/L	1.6
N-Nitrosodimethylamine	ND	10	ug/L	1.7
N-Nitrosodi-n-propyl-amine	ND	10	ug/L	1.8
N-Nitrosodiphenylamine	ND	10	ug/L	5.3
N-Nitrosomethylethylamine	ND	10	ug/L	3.0
N-Nitrosomorpholine	ND	10	ug/L	3.9
N-Nitrosopiperidine	ND	10	ug/L	1.9
N-Nitrosopyrrolidine	ND	10	ug/L	2.4
5-Nitro-o-toluidine	ND	20	ug/L	3.0
Pentachlorobenzene	ND	10	ug/L	1.2
Pentachloroethane	ND	50	ug/L	1.9
Pentachloronitrobenzene	ND	50	ug/L	2.0
Pentachlorophenol	ND	50	ug/L	7.7
Phenacetin	ND	20	ug/L	4.2
Phenanthrene	ND	10	ug/L	1.2
Phenol	ND	10	ug/L	1.4
2-Picoline	ND	20	ug/L	1.2
Pronamide	ND	20	ug/L	1.4
Pyrene	ND	10	ug/L	1.7
Pyridine	ND	20	ug/L	12
Safrole	ND	20	ug/L	2.0
1,2,4,5-Tetrachloro-benzene	ND	10	ug/L	1.9
2,3,4,6-Tetrachlorophenol	ND	50	ug/L	2.2
1,2,4-Trichloro-benzene	ND	10	ug/L	1.8
2,4,5-Trichloro-phenol	ND	10	ug/L	1.1
2,4,6-Trichloro-phenol	ND	10	ug/L	1.1
1,3,5-Trinitrobenzene	ND	50	ug/L	1.4
Aramite	ND	20	ug/L	5.3
2,2'-oxybis(1-Chloropropane)	ND	10	ug/L	1.3
2-sec-Butyl-4,6-dinitro-phenol	ND	20	ug/L	1.1
2-Toluidine	ND	10	ug/L	1.2

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

GC/MS Semivolatiles

Lot-Sample #...: D2C140285-004 **Work Order #...:** EWEJR1AN **Matrix.....:** WG

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	73	(51 - 99)
Phenol-d5	74	(52 - 99)
Nitrobenzene-d5	78	(57 - 97)
2-Fluorobiphenyl	65	(49 - 98)
2,4,6-Tribromophenol	69	(53 - 108)
Terphenyl-d14	69	(38 - 119)

US GEOLOGICAL SURVEY

CAFB-S

GC/MS Semivolatiles

Lot-Sample #: D2C140285-004 **Work Order #:** EWEJR1AN **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		13 J	M	4.0023	ug/L
Unknown		12 J	M	4.7888	ug/L
Unknown		28 J	M	4.8579	ug/L
Unknown		0.0	M	13.148	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 Semivolatiles

Lot-Sample #...: D2C140285-005 **Work Order #...:** EWEJ51AN **Matrix.....:** WG
Date Sampled...: 03/13/02 09:00 **Date Received..:** 03/14/02
Prep Date.....: 03/20/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2079198 **Analysis Time..:** 20:26
Dilution Factor: 1

Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	10	ug/L	1.0
Acenaphthylene	ND	10	ug/L	1.0
Acetophenone	ND	10	ug/L	1.4
2-Acetylaminofluorene	ND	100	ug/L	1.8
4-Aminobiphenyl	ND	50	ug/L	1.6
Aniline	ND	10	ug/L	1.2
Anthracene	ND	10	ug/L	1.2
Benzo(a)anthracene	ND	10	ug/L	1.3
Benzo(b)fluoranthene	ND	10	ug/L	2.2
Benzo(k)fluoranthene	ND	10	ug/L	2.2
Benzo(ghi)perylene	ND	10	ug/L	1.1
Benzo(a)pyrene	ND	10	ug/L	1.9
Benzyl alcohol	ND	10	ug/L	3.0
bis(2-Chloroethoxy) methane	ND	10	ug/L	1.4
bis(2-Chloroethyl)-ether	ND	10	ug/L	1.8
bis(2-Ethylhexyl) phthalate	ND	10	ug/L	1.9
4-Bromophenyl phenyl ether	ND	10	ug/L	1.3
Butyl benzyl phthalate	ND	10	ug/L	1.9
4-Chloroaniline	ND	10	ug/L	7.3
4-Chloro-3-methylphenol	ND	10	ug/L	1.3
2-Chloronaphthalene	ND	10	ug/L	1.4
2-Chlorophenol	ND	10	ug/L	1.5
4-Chlorophenyl phenyl ether	ND	10	ug/L	1.5
Chrysene	ND	10	ug/L	1.5
Dibenz(a,h)anthracene	ND	10	ug/L	1.6
Dibenzofuran	ND	10	ug/L	1.3
Di-n-butyl phthalate	ND	10	ug/L	2.1
1,2-Dichlorobenzene	ND	10	ug/L	1.9
1,3-Dichlorobenzene	ND	10	ug/L	2.5
1,4-Dichlorobenzene	ND	10	ug/L	2.2
3,3'-Dichlorobenzidine	ND	50	ug/L	16
2,4-Dichlorophenol	ND	10	ug/L	1.7
2,6-Dichlorophenol	ND	10	ug/L	2.1

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

GC/MS Semivolatiles

Lot-Sample #...: D2C140285-005 **Work Order #...:** EWEJ51AN **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Diethyl phthalate	ND	10	ug/L	2.0
4-Dimethylaminoazobenzene	ND	20	ug/L	3.2
7,12-Dimethylbenz(a)-anthracene	ND	20	ug/L	1.5
3,3'-Dimethylbenzidine	ND	20	ug/L	10
alpha,alpha-Dimethylphenethylamine	ND	50	ug/L	13
2,4-Dimethylphenol	ND	10	ug/L	2.1
Dimethyl phthalate	ND	10	ug/L	1.8
Di-n-octyl phthalate	ND	10	ug/L	2.0
1,3-Dinitrobenzene	ND	10	ug/L	2.5
4,6-Dinitro-2-methylphenol	ND	50	ug/L	15
2,4-Dinitrophenol	ND	50	ug/L	16
2,4-Dinitrotoluene	ND	10	ug/L	2.4
2,6-Dinitrotoluene	ND	10	ug/L	2.3
Diphenylamine	ND	10	ug/L	1.4
Ethyl methanesulfonate	ND	10	ug/L	2.7
Fluoranthene	ND	10	ug/L	2.0
Fluorene	ND	10	ug/L	1.4
Hexachlorobenzene	ND	10	ug/L	1.5
Hexachlorobutadiene	ND	10	ug/L	3.3
Hexachlorocyclopentadiene	ND	50	ug/L	9.1
Hexachloroethane	ND	10	ug/L	3.0
Hexachloropropene	ND	100	ug/L	1.5
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	1.3
Isophorone	ND	10	ug/L	1.6
Isosafrole	ND	20	ug/L	1.9
Methapyrilene	ND	50	ug/L	18
3-Methylcholanthrene	ND	20	ug/L	4.8
Methyl methanesulfonate	ND	10	ug/L	6.0
2-Methylnaphthalene	ND	10	ug/L	1.9
2-Methylphenol	ND	10	ug/L	1.6
3-Methylphenol	ND	10	ug/L	1.4
4-Methylphenol	ND	10	ug/L	1.4
Naphthalene	ND	10	ug/L	1.4
1,4-Naphthoquinone	ND	50	ug/L	1.8
1-Naphthylamine	ND	10	ug/L	3.3
2-Naphthylamine	ND	10	ug/L	2.6
2-Nitroaniline	ND	50	ug/L	1.6
3-Nitroaniline	ND	50	ug/L	6.7
4-Nitroaniline	ND	50	ug/L	4.4

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

GC/MS Semivolatiles

Lot-Sample #...: D2C140285-005 **Work Order #...:** EWEJ51AN **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Nitrobenzene	ND	10	ug/L	1.7
2-Nitrophenol	ND	10	ug/L	1.7
4-Nitrophenol	ND	50	ug/L	7.1
N-Nitrosodi-n-butylamine	ND	10	ug/L	1.8
N-Nitrosodiethylamine	ND	10	ug/L	1.6
N-Nitrosodimethylamine	ND	10	ug/L	1.7
N-Nitrosodi-n-propyl-amine	ND	10	ug/L	1.8
N-Nitrosodiphenylamine	ND	10	ug/L	5.3
N-Nitrosomethylethylamine	ND	10	ug/L	3.0
N-Nitrosomorpholine	ND	10	ug/L	3.9
N-Nitrosopiperidine	ND	10	ug/L	1.9
N-Nitrosopyrrolidine	ND	10	ug/L	2.4
5-Nitro-o-toluidine	ND	20	ug/L	3.0
Pentachlorobenzene	ND	10	ug/L	1.2
Pentachloroethane	ND	50	ug/L	1.9
Pentachloronitrobenzene	ND	50	ug/L	2.0
Pentachlorophenol	ND	50	ug/L	7.7
Phenacetin	ND	20	ug/L	4.2
Phenanthrene	ND	10	ug/L	1.2
Phenol	ND	10	ug/L	1.4
2-Picoline	ND	20	ug/L	1.2
Pronamide	ND	20	ug/L	1.4
Pyrene	ND	10	ug/L	1.7
Pyridine	ND	20	ug/L	12
Safrole	ND	20	ug/L	2.0
1,2,4,5-Tetrachloro-benzene	ND	10	ug/L	1.9
2,3,4,6-Tetrachlorophenol	ND	50	ug/L	2.2
1,2,4-Trichloro-benzene	ND	10	ug/L	1.8
2,4,5-Trichloro-phenol	ND	10	ug/L	1.1
2,4,6-Trichloro-phenol	ND	10	ug/L	1.1
1,3,5-Trinitrobenzene	ND	50	ug/L	1.4
Aramite	ND	20	ug/L	5.3
2,2'-oxybis(1-Chloropropane)	ND	10	ug/L	1.3
2-sec-Butyl-4,6-dinitro-phenol	ND	20	ug/L	1.1
2-Toluidine	ND	10	ug/L	1.2

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

GC/MS Semivolatiles

Lot-Sample #...: D2C140285-005 Work Order #...: EWEJ51AN Matrix.....: WG

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	74	(51 - 99)
Phenol-d5	74	(52 - 99)
Nitrobenzene-d5	77	(57 - 97)
2-Fluorobiphenyl	69	(49 - 98)
2,4,6-Tribromophenol	77	(53 - 108)
Terphenyl-d14	74	(38 - 119)

US GEOLOGICAL SURVEY

CAFB-C

GC/MS Semivolatiles

Lot-Sample #: D2C140285-005 **Work Order #:** EWEJ51AN **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		47 J	M	3.7372	ug/L
Unknown		12 J	M	4.0029	ug/L
Unknown		15 J	M	4.7895	ug/L
Unknown		34 J	M	4.8586	ug/L
Unknown		4.0 J	M	8.0419	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 Semivolatiles

Lot-Sample #...: D2C140285-001 **Work Order #...:** EWEHG1AD **Matrix.....:** WG
Date Sampled...: 03/13/02 10:30 **Date Received..:** 03/14/02
Prep Date.....: 03/20/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2079121 **Analysis Time..:** 15:42
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
beta-BHC	ND	0.050	ug/L	0.0070
delta-BHC	ND	0.050	ug/L	0.0050
gamma-BHC (Lindane)	ND	0.050	ug/L	0.0050
alpha-Chlordane	ND	0.050	ug/L	0.0090
gamma-Chlordane	ND	0.050	ug/L	0.0070
4,4'-DDD	ND	0.050	ug/L	0.0080
4,4'-DDE	ND	0.050	ug/L	0.0060
4,4'-DDT	ND	0.050	ug/L	0.017
Diallate	ND	1.0	ug/L	0.50
Dieldrin	ND	0.050	ug/L	0.0050
Endosulfan I	ND	0.050	ug/L	0.0080
Endosulfan II	ND	0.050	ug/L	0.0080
Endosulfan sulfate	ND	0.050	ug/L	0.0060
Endrin	ND	0.050	ug/L	0.0060
Endrin aldehyde	ND	0.050	ug/L	0.017
Endrin ketone	ND	0.050	ug/L	0.0070
Heptachlor	ND	0.050	ug/L	0.0080
Heptachlor epoxide	ND	0.050	ug/L	0.0050
Isodrin	ND	0.10	ug/L	0.025
Kepone	ND	1.0	ug/L	0.20
Methoxychlor	ND	0.10	ug/L	0.0090
Toxaphene	ND	2.0	ug/L	0.51
Aldrin	ND	0.050	ug/L	0.0070
alpha-BHC	ND	0.050	ug/L	0.0060

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	108	(15 - 162)
Tetrachloro-m-xylene	97	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

GC Semivolatiles

Lot-Sample #...: D2C140285-002 **Work Order #...:** EWEJG1AP **Matrix.....:** WG
Date Sampled...: 03/13/02 11:50 **Date Received..:** 03/14/02
Prep Date.....: 03/20/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2079121 **Analysis Time..:** 16:11
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aldrin	ND	0.050	ug/L	0.0070
alpha-BHC	ND	0.050	ug/L	0.0060
beta-BHC	ND	0.050	ug/L	0.0070
delta-BHC	ND	0.050	ug/L	0.0050
gamma-BHC (Lindane)	ND	0.050	ug/L	0.0050
alpha-Chlordane	ND	0.050	ug/L	0.0090
gamma-Chlordane	ND	0.050	ug/L	0.0070
4,4'-DDD	ND	0.050	ug/L	0.0080
4,4'-DDE	ND	0.050	ug/L	0.0060
4,4'-DDT	ND	0.050	ug/L	0.017
Diallate	ND	1.0	ug/L	0.50
Dieldrin	ND	0.050	ug/L	0.0050
Endosulfan I	ND	0.050	ug/L	0.0080
Endosulfan II	ND	0.050	ug/L	0.0080
Endosulfan sulfate	ND	0.050	ug/L	0.0060
Endrin	ND	0.050	ug/L	0.0060
Endrin aldehyde	ND	0.050	ug/L	0.017
Endrin ketone	ND	0.050	ug/L	0.0070
Heptachlor	ND	0.050	ug/L	0.0080
Heptachlor epoxide	ND	0.050	ug/L	0.0050
Isodrin	ND	0.10	ug/L	0.025
Kepone	ND	1.0	ug/L	0.20
Methoxychlor	ND	0.10	ug/L	0.0090
Toxaphene	ND	2.0	ug/L	0.51

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	110	(15 - 162)
Tetrachloro-m-xylene	98	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

GC Semivolatiles

Lot-Sample #...: D2C140285-003 **Work Order #...:** EWEJL1AP **Matrix.....:** WG
Date Sampled...: 03/13/02 13:15 **Date Received..:** 03/14/02
Prep Date.....: 03/20/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2079121 **Analysis Time..:** 18:34
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aldrin	ND	0.050	ug/L	0.0070
alpha-BHC	ND	0.050	ug/L	0.0060
beta-BHC	ND	0.050	ug/L	0.0070
delta-BHC	ND	0.050	ug/L	0.0050
gamma-BHC (Lindane)	ND	0.050	ug/L	0.0050
alpha-Chlordane	ND	0.050	ug/L	0.0090
gamma-Chlordane	ND	0.050	ug/L	0.0070
4,4'-DDD	ND	0.050	ug/L	0.0080
4,4'-DDE	ND	0.050	ug/L	0.0060
4,4'-DDT	ND	0.050	ug/L	0.017
Diallate	ND	1.0	ug/L	0.50
Dieldrin	ND	0.050	ug/L	0.0050
Endosulfan I	ND	0.050	ug/L	0.0080
Endosulfan II	ND	0.050	ug/L	0.0080
Endosulfan sulfate	ND	0.050	ug/L	0.0060
Endrin	ND	0.050	ug/L	0.0060
Endrin aldehyde	ND	0.050	ug/L	0.017
Endrin ketone	ND	0.050	ug/L	0.0070
Heptachlor	ND	0.050	ug/L	0.0080
Heptachlor epoxide	ND	0.050	ug/L	0.0050
Isodrin	ND	0.10	ug/L	0.025
Kepone	ND	1.0	ug/L	0.20
Methoxychlor	ND	0.10	ug/L	0.0090
Toxaphene	ND	2.0	ug/L	0.51

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	110	(15 - 162)
Tetrachloro-m-xylene	98	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

GC Semivolatiles

Lot-Sample #...: D2C140285-004 **Work Order #...:** EWEJR1AP **Matrix.....:** WG
Date Sampled...: 03/13/02 14:30 **Date Received..:** 03/14/02
Prep Date.....: 03/20/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2079121 **Analysis Time..:** 19:03
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aldrin	ND	0.050	ug/L	0.0070
alpha-BHC	ND	0.050	ug/L	0.0060
beta-BHC	ND	0.050	ug/L	0.0070
delta-BHC	ND	0.050	ug/L	0.0050
gamma-BHC (Lindane)	ND	0.050	ug/L	0.0050
alpha-Chlordane	ND	0.050	ug/L	0.0090
gamma-Chlordane	ND	0.050	ug/L	0.0070
4,4'-DDD	ND	0.050	ug/L	0.0080
4,4'-DDE	ND	0.050	ug/L	0.0060
4,4'-DDT	ND	0.050	ug/L	0.017
Diallate	ND	1.0	ug/L	0.50
Dieldrin	ND	0.050	ug/L	0.0050
Endosulfan I	ND	0.050	ug/L	0.0080
Endosulfan II	ND	0.050	ug/L	0.0080
Endosulfan sulfate	ND	0.050	ug/L	0.0060
Endrin	ND	0.050	ug/L	0.0060
Endrin aldehyde	ND	0.050	ug/L	0.017
Endrin ketone	ND	0.050	ug/L	0.0070
Heptachlor	ND	0.050	ug/L	0.0080
Heptachlor epoxide	ND	0.050	ug/L	0.0050
Isodrin	ND	0.10	ug/L	0.025
Kepone	ND	1.0	ug/L	0.20
Methoxychlor	ND	0.10	ug/L	0.0090
Toxaphene	ND	2.0	ug/L	0.51

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	110	(15 - 162)
Tetrachloro-m-xylene	100	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

GC Semivolatiles

Lot-Sample #...: D2C140285-005 Work Order #...: EWEJ51AP Matrix.....: WG
Date Sampled...: 03/13/02 09:00 Date Received..: 03/14/02
Prep Date.....: 03/20/02 Analysis Date..: 03/22/02
Prep Batch #...: 2079121 Analysis Time..: 19:32
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aldrin	ND	0.050	ug/L	0.0070
alpha-BHC	ND	0.050	ug/L	0.0060
beta-BHC	ND	0.050	ug/L	0.0070
delta-BHC	ND	0.050	ug/L	0.0050
gamma-BHC (Lindane)	ND	0.050	ug/L	0.0050
alpha-Chlordane	ND	0.050	ug/L	0.0090
gamma-Chlordane	ND	0.050	ug/L	0.0070
4,4'-DDD	ND	0.050	ug/L	0.0080
4,4'-DDE	ND	0.050	ug/L	0.0060
4,4'-DDT	ND	0.050	ug/L	0.017
Diallate	ND	1.0	ug/L	0.50
Dieldrin	ND	0.050	ug/L	0.0050
Endosulfan I	ND	0.050	ug/L	0.0080
Endosulfan II	ND	0.050	ug/L	0.0080
Endosulfan sulfate	ND	0.050	ug/L	0.0060
Endrin	ND	0.050	ug/L	0.0060
Endrin aldehyde	ND	0.050	ug/L	0.017
Endrin ketone	ND	0.050	ug/L	0.0070
Heptachlor	ND	0.050	ug/L	0.0080
Heptachlor epoxide	ND	0.050	ug/L	0.0050
Isodrin	ND	0.10	ug/L	0.025
Kepone	ND	1.0	ug/L	0.20
Methoxychlor	ND	0.10	ug/L	0.0090
Toxaphene	ND	2.0	ug/L	0.51

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	112	(15 - 162)
Tetrachloro-m-xylene	101	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

GC Semivolatiles

Lot-Sample #...: D2C140285-001 **Work Order #...:** EWEHG1AE **Matrix.....:** WG
Date Sampled...: 03/13/02 10:30 **Date Received..:** 03/14/02
Prep Date.....: 03/20/02 **Analysis Date..:** 03/21/02
Prep Batch #...: 2079135 **Analysis Time..:** 23:01
Dilution Factor: 1

Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND	1.0	ug/L	0.085
Aroclor 1221	ND	1.0	ug/L	0.12
Aroclor 1232	ND	1.0	ug/L	0.10
Aroclor 1242	ND	1.0	ug/L	0.12
Aroclor 1248	ND	1.0	ug/L	0.079
Aroclor 1254	ND	1.0	ug/L	0.074
Aroclor 1260	ND	1.0	ug/L	0.060

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	74	(41 - 107)
Decachlorobiphenyl	77	(46 - 131)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

GC Semivolatiles

Lot-Sample #...: D2C140285-002 **Work Order #...:** EWEJG1AQ **Matrix.....:** WG
Date Sampled...: 03/13/02 11:50 **Date Received..:** 03/14/02
Prep Date.....: 03/20/02 **Analysis Date..:** 03/21/02
Prep Batch #...: 2079135 **Analysis Time..:** 23:29
Dilution Factor: 1

Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND	1.0	ug/L	0.085
Aroclor 1221	ND	1.0	ug/L	0.12
Aroclor 1232	ND	1.0	ug/L	0.10
Aroclor 1242	ND	1.0	ug/L	0.12
Aroclor 1248	ND	1.0	ug/L	0.079
Aroclor 1254	ND	1.0	ug/L	0.074
Aroclor 1260	ND	1.0	ug/L	0.060

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	70	(41 - 107)
Decachlorobiphenyl	80	(46 - 131)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

GC Semivolatiles

Lot-Sample #...: D2C140285-003 **Work Order #...:** EWEJL1AQ **Matrix.....:** WG
Date Sampled...: 03/13/02 13:15 **Date Received..:** 03/14/02
Prep Date.....: 03/20/02 **Analysis Date..:** 03/21/02
Prep Batch #...: 2079135 **Analysis Time..:** 23:58
Dilution Factor: 1

Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND	1.0	ug/L	0.085
Aroclor 1221	ND	1.0	ug/L	0.12
Aroclor 1232	ND	1.0	ug/L	0.10
Aroclor 1242	ND	1.0	ug/L	0.12
Aroclor 1248	ND	1.0	ug/L	0.079
Aroclor 1254	ND	1.0	ug/L	0.074
Aroclor 1260	ND	1.0	ug/L	0.060

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	74	(41 - 107)
Decachlorobiphenyl	81	(46 - 131)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

GC Semivolatiles

Lot-Sample #...: D2C140285-004 Work Order #...: EWEJR1AQ Matrix.....: WG
Date Sampled...: 03/13/02 14:30 Date Received..: 03/14/02
Prep Date.....: 03/20/02 Analysis Date..: 03/22/02
Prep Batch #...: 2079135 Analysis Time..: 00:26
Dilution Factor: 1

Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND	1.0	ug/L	0.085
Aroclor 1221	ND	1.0	ug/L	0.12
Aroclor 1232	ND	1.0	ug/L	0.10
Aroclor 1242	ND	1.0	ug/L	0.12
Aroclor 1248	ND	1.0	ug/L	0.079
Aroclor 1254	ND	1.0	ug/L	0.074
Aroclor 1260	ND	1.0	ug/L	0.060

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	75	(41 - 107)
Decachlorobiphenyl	81	(46 - 131)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

GC Semivolatiles

Lot-Sample #...: D2C140285-005 **Work Order #...:** EWEJ51AQ **Matrix.....:** WG
Date Sampled...: 03/13/02 09:00 **Date Received..:** 03/14/02
Prep Date.....: 03/20/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2079135 **Analysis Time..:** 00:54
Dilution Factor: 1

Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND	1.0	ug/L	0.085
Aroclor 1221	ND	1.0	ug/L	0.12
Aroclor 1232	ND	1.0	ug/L	0.10
Aroclor 1242	ND	1.0	ug/L	0.12
Aroclor 1248	ND	1.0	ug/L	0.079
Aroclor 1254	ND	1.0	ug/L	0.074
Aroclor 1260	ND	1.0	ug/L	0.060

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	76	(41 - 107)
Decachlorobiphenyl	85	(46 - 131)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

GC Semivolatiles

Lot-Sample #...: D2C140285-001 Work Order #...: EWEHG1AF Matrix.....: WG
Date Sampled...: 03/13/02 10:30 Date Received..: 03/14/02
Prep Date.....: 03/20/02 Analysis Date..: 03/26/02
Prep Batch #...: 2079503 Analysis Time..: 07:56
Dilution Factor: 1

Method.....: SW846 8151A

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2,4-D	ND	4.0	ug/L	0.16
Dinoseb	ND	0.60	ug/L	0.090
2,4,5-TP (Silvex)	ND	1.0	ug/L	0.034
2,4,5-T	ND	1.0	ug/L	0.043

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	7.3 *	(20 - 150)

NOTE(S):

* Surrogate recovery is outside stated control limits.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

GC Semivolatiles

Lot-Sample #...: D2C140285-001 **Work Order #...:** EWEHG2AF **Matrix.....:** WG
Date Sampled...: 03/13/02 10:30 **Date Received..:** 03/14/02
Prep Date.....: 03/26/02 **Analysis Date..:** 04/02/02
Prep Batch #...: 2085450 **Analysis Time..:** 15:01
Dilution Factor: 1

Method.....: SW846 8151A

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2,4-D	ND	4.0	ug/L	0.16
Dinoseb	ND	0.60	ug/L	0.090
2,4,5-TP (Silvex)	ND	1.0	ug/L	0.034
2,4,5-T	ND	1.0	ug/L	0.043

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	72	(20 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

GC Semivolatiles

Lot-Sample #...: D2C140285-002 **Work Order #...:** EWEJG1AR **Matrix.....:** WG
Date Sampled...: 03/13/02 11:50 **Date Received..:** 03/14/02
Prep Date.....: 03/20/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2079503 **Analysis Time..:** 09:42
Dilution Factor: 1

Method.....: SW846 8151A

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2,4-D	ND	4.0	ug/L	0.16
Dinoseb	ND	0.60	ug/L	0.090
2,4,5-TP (Silvex)	ND	1.0	ug/L	0.034
2,4,5-T	ND	1.0	ug/L	0.043

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	63	(20 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

GC Semivolatiles

Lot-Sample #...: D2C140285-003 Work Order #...: EWEJL1AR Matrix.....: WG
Date Sampled...: 03/13/02 13:15 Date Received..: 03/14/02
Prep Date.....: 03/20/02 Analysis Date..: 03/26/02
Prep Batch #...: 2079503 Analysis Time..: 10:17
Dilution Factor: 1

Method.....: SW846 8151A

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2,4-D	ND	4.0	ug/L	0.16
Dinoseb	ND	0.60	ug/L	0.090
2,4,5-TP (Silvex)	ND	1.0	ug/L	0.034
2,4,5-T	ND	1.0	ug/L	0.043

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	69	(20 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

GC Semivolatiles

Lot-Sample #...:	D2C140285-004	**Work Order #...:**	EWEJR1AR	**Matrix.....:**	WG
Date Sampled...:	03/13/02 14:30	**Date Received..:**	03/14/02		
Prep Date.....:	03/20/02	**Analysis Date..:**	03/26/02		
Prep Batch #...:	2079503	**Analysis Time..:**	10:53		
Dilution Factor:	1				
		Method.....:	SW846 8151A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2,4-D	ND	4.0	ug/L	0.16
Dinoseb	ND	0.60	ug/L	0.090
2,4,5-TP (Silvex)	ND	1.0	ug/L	0.034
2,4,5-T	ND	1.0	ug/L	0.043

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	81	(20 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

GC Semivolatiles

Lot-Sample #...:	D2C140285-005	**Work Order #...:**	EWEJ51AR	**Matrix.....:**	WG
Date Sampled...:	03/13/02 09:00	**Date Received...:**	03/14/02		
Prep Date.....:	03/20/02	**Analysis Date..:**	03/26/02		
Prep Batch #...:	2079503	**Analysis Time..:**	11:28		
Dilution Factor:	1				
		Method.....:	SW846 8151A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2,4-D	ND	4.0	ug/L	0.16
Dinoseb	ND	0.60	ug/L	0.090
2,4,5-TP (Silvex)	ND	1.0	ug/L	0.034
2,4,5-T	ND	1.0	ug/L	0.043

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	76	(20 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

Trace Level Organic Compounds

Lot-Sample #...: D2C140285-001 **Work Order #...:** EWEHG1AM **Matrix.....:** WG
Date Sampled...: 03/13/02 10:30 **Date Received..:** 03/14/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/23/02
Prep Batch #...: 2078358 **Analysis Time..:** 00:07
Dilution Factor: 1

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.037	ng/L	SW846 8280A
Total TCDD	ND	0.037	ng/L	SW846 8280A
Total PeCDD	ND	1.9	ng/L	SW846 8280A
Total HxCDD	ND	0.11	ng/L	SW846 8280A
Total TCDF	ND	0.030	ng/L	SW846 8280A
Total PeCDF	ND	0.22	ng/L	SW846 8280A
Total HxCDF	ND	0.11	ng/L	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	99	(25 - 150)
13C-2,3,7,8-TCDF	98	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	97	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	102	(25 - 150)
13C-OCDD	97	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	101	(25 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

Trace Level Organic Compounds

Lot-Sample #...: D2C140285-002 **Work Order #...:** EWEJG1A0 **Matrix.....:** WG
Date Sampled...: 03/13/02 11:50 **Date Received..:** 03/14/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/23/02
Prep Batch #...: 2078358 **Analysis Time..:** 00:54
Dilution Factor: 1

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.038	ng/L	SW846 8280A
Total TCDD	ND	0.038	ng/L	SW846 8280A
Total PeCDD	ND	1.8	ng/L	SW846 8280A
Total HxCDD	ND	0.13	ng/L	SW846 8280A
Total TCDF	ND	0.020	ng/L	SW846 8280A
Total PeCDF	ND	0.22	ng/L	SW846 8280A
Total HxCDF	ND	0.088	ng/L	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	102	(25 - 150)
13C-2,3,7,8-TCDF	98	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	102	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	106	(25 - 150)
13C-OCDD	101	(25 - 150)

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

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

Trace Level Organic Compounds

Lot-Sample #...: D2C140285-003 **Work Order #...:** EWEJL1A0 **Matrix.....:** WG
Date Sampled...: 03/13/02 13:15 **Date Received..:** 03/14/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/23/02
Prep Batch #...: 2078358 **Analysis Time..:** 01:42
Dilution Factor: 1

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.046	ng/L	SW846 8280A
Total TCDD	ND	0.046	ng/L	SW846 8280A
Total PeCDD	ND	1.7	ng/L	SW846 8280A
Total HxCDD	ND	0.11	ng/L	SW846 8280A
Total TCDF	ND	0.037	ng/L	SW846 8280A
Total PeCDF	ND	0.23	ng/L	SW846 8280A
Total HxCDF	ND	0.11	ng/L	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	93	(25 - 150)
13C-2,3,7,8-TCDF	90	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	95	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	99	(25 - 150)
13C-OCDD	93	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	100	(25 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

Trace Level Organic Compounds

Lot-Sample #...: D2C140285-004 **Work Order #...:** EWEJR1A0 **Matrix.....:** WG
Date Sampled...: 03/13/02 14:30 **Date Received..:** 03/14/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/23/02
Prep Batch #...: 2078358 **Analysis Time..:** 02:29
Dilution Factor: 1

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.040	ng/L	SW846 8280A
Total TCDD	ND	0.040	ng/L	SW846 8280A
Total PeCDD	ND	2.1	ng/L	SW846 8280A
Total HxCDD	ND	0.10	ng/L	SW846 8280A
Total TCDF	ND	0.020	ng/L	SW846 8280A
Total PeCDF	ND	0.27	ng/L	SW846 8280A
Total HxCDF	ND	0.093	ng/L	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	103	(25 - 150)
13C-2,3,7,8-TCDF	101	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	106	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	110	(25 - 150)
13C-OCDD	104	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	98	(25 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

Trace Level Organic Compounds

Lot-Sample #...: D2C140285-005 **Work Order #...:** EWEJ51A0 **Matrix.....:** WG
Date Sampled...: 03/13/02 09:00 **Date Received..:** 03/14/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/23/02
Prep Batch #...: 2078358 **Analysis Time..:** 03:17
Dilution Factor: 1

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.052	ng/L	SW846 8280A
Total TCDD	ND	0.052	ng/L	SW846 8280A
Total PeCDD	ND	1.7	ng/L	SW846 8280A
Total HxCDD	ND	0.10	ng/L	SW846 8280A
Total TCDF	ND	0.023	ng/L	SW846 8280A
Total PeCDF	ND	0.22	ng/L	SW846 8280A
Total HxCDF	ND	0.096	ng/L	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	96	(25 - 150)
13C-2,3,7,8-TCDF	93	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	98	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	102	(25 - 150)
13C-OCDD	94	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	98	(25 - 150)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

HPLC

Lot-Sample #...: D2C140285-001 **Work Order #...:** EWEHG1AG **Matrix.....:** WG
Date Sampled...: 03/13/02 10:30 **Date Received..:** 03/14/02
Prep Date.....: 03/20/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2079128 **Analysis Time..:** 01:32
Dilution Factor: 1

Method.....: SW846 8310

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	1.0	ug/L	0.074
Acenaphthylene	ND	1.0	ug/L	0.14
Anthracene	ND	0.10	ug/L	0.031
Benzo(a)anthracene	ND	0.10	ug/L	0.049
Benzo(a)pyrene	ND	0.10	ug/L	0.075
Benzo(b)fluoranthene	ND	0.10	ug/L	0.030
Benzo(ghi)perylene	ND	0.20	ug/L	0.059
Benzo(k)fluoranthene	ND	0.10	ug/L	0.060
Chrysene	ND	0.20	ug/L	0.041
Dibenzo(a,h)anthracene	ND	0.20	ug/L	0.060
Fluoranthene	ND	0.20	ug/L	0.12
Fluorene	ND	0.20	ug/L	0.13
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L	0.025
1-Methylnaphthalene	ND	1.0	ug/L	0.14
2-Methylnaphthalene	ND	1.0	ug/L	0.11
Naphthalene	ND	1.0	ug/L	0.049
Phenanthrene	ND	0.20	ug/L	0.11
Pyrene	ND	0.20	ug/L	0.040

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	94	(64 - 108)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

HPLC

Lot-Sample #...: D2C140285-002 **Work Order #...:** EWEJG1AT **Matrix.....:** WG
Date Sampled...: 03/13/02 11:50 **Date Received..:** 03/14/02
Prep Date.....: 03/20/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2079128 **Analysis Time..:** 02:01
Dilution Factor: 1

Method.....: SW846 8310

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	1.0	ug/L	0.074
Acenaphthylene	ND	1.0	ug/L	0.14
Anthracene	ND	0.10	ug/L	0.031
Benzo(a)anthracene	ND	0.10	ug/L	0.049
Benzo(a)pyrene	ND	0.10	ug/L	0.075
Benzo(b)fluoranthene	ND	0.10	ug/L	0.030
Benzo(ghi)perylene	ND	0.20	ug/L	0.059
Benzo(k)fluoranthene	ND	0.10	ug/L	0.060
Chrysene	ND	0.20	ug/L	0.041
Dibenzo(a,h)anthracene	ND	0.20	ug/L	0.060
Fluoranthene	ND	0.20	ug/L	0.12
Fluorene	ND	0.20	ug/L	0.13
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L	0.025
1-Methylnaphthalene	ND	1.0	ug/L	0.14
2-Methylnaphthalene	ND	1.0	ug/L	0.11
Naphthalene	ND	1.0	ug/L	0.049
Phenanthrene	ND	0.20	ug/L	0.11
Pyrene	ND	0.20	ug/L	0.040

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	92	(64 - 108)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

HPLC

Lot-Sample #...: D2C140285-003 **Work Order #...:** EWEJL1AT **Matrix.....:** WG
Date Sampled...: 03/13/02 13:15 **Date Received..:** 03/14/02
Prep Date.....: 03/20/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2079128 **Analysis Time..:** 02:30
Dilution Factor: 1

Method.....: SW846 8310

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	1.0	ug/L	0.074
Acenaphthylene	ND	1.0	ug/L	0.14
Anthracene	ND	0.10	ug/L	0.031
Benzo(a)anthracene	ND	0.10	ug/L	0.049
Benzo(a)pyrene	ND	0.10	ug/L	0.075
Benzo(b)fluoranthene	ND	0.10	ug/L	0.030
Benzo(ghi)perylene	ND	0.20	ug/L	0.059
Benzo(k)fluoranthene	ND	0.10	ug/L	0.060
Chrysene	ND	0.20	ug/L	0.041
Dibenzo(a,h)anthracene	ND	0.20	ug/L	0.060
Fluoranthene	ND	0.20	ug/L	0.12
Fluorene	ND	0.20	ug/L	0.13
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L	0.025
1-Methylnaphthalene	ND	1.0	ug/L	0.14
2-Methylnaphthalene	ND	1.0	ug/L	0.11
Naphthalene	ND	1.0	ug/L	0.049
Phenanthrene	ND	0.20	ug/L	0.11
Pyrene	ND	0.20	ug/L	0.040

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	89	(64 - 108)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

HPLC

Lot-Sample #...: D2C140285-004 **Work Order #...:** EWEJR1AT **Matrix.....:** WG
Date Sampled...: 03/13/02 14:30 **Date Received..:** 03/14/02
Prep Date.....: 03/20/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2079128 **Analysis Time..:** 02:59
Dilution Factor: 1

Method.....: SW846 8310

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	1.0	ug/L	0.074
Acenaphthylene	ND	1.0	ug/L	0.14
Anthracene	ND	0.10	ug/L	0.031
Benzo(a)anthracene	ND	0.10	ug/L	0.049
Benzo(a)pyrene	ND	0.10	ug/L	0.075
Benzo(b)fluoranthene	ND	0.10	ug/L	0.030
Benzo(ghi)perylene	ND	0.20	ug/L	0.059
Benzo(k)fluoranthene	ND	0.10	ug/L	0.060
Chrysene	ND	0.20	ug/L	0.041
Dibenzo(a,h)anthracene	ND	0.20	ug/L	0.060
Fluoranthene	ND	0.20	ug/L	0.12
Fluorene	ND	0.20	ug/L	0.13
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L	0.025
1-Methylnaphthalene	ND	1.0	ug/L	0.14
2-Methylnaphthalene	ND	1.0	ug/L	0.11
Naphthalene	ND	1.0	ug/L	0.049
Phenanthrene	ND	0.20	ug/L	0.11
Pyrene	ND	0.20	ug/L	0.040

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	66	(64 - 108)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

HPLC

Lot-Sample #...: D2C140285-005 **Work Order #...:** EWEJ51AT **Matrix.....:** WG
Date Sampled...: 03/13/02 09:00 **Date Received..:** 03/14/02
Prep Date.....: 03/20/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2079128 **Analysis Time..:** 03:29
Dilution Factor: 1

Method.....: SW846 8310

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	1.0	ug/L	0.074
Acenaphthylene	ND	1.0	ug/L	0.14
Anthracene	ND	0.10	ug/L	0.031
Benzo(a)anthracene	ND	0.10	ug/L	0.049
Benzo(a)pyrene	ND	0.10	ug/L	0.075
Benzo(b)fluoranthene	ND	0.10	ug/L	0.030
Benzo(ghi)perylene	ND	0.20	ug/L	0.059
Benzo(k)fluoranthene	ND	0.10	ug/L	0.060
Chrysene	ND	0.20	ug/L	0.041
Dibenzo(a,h)anthracene	ND	0.20	ug/L	0.060
Fluoranthene	ND	0.20	ug/L	0.12
Fluorene	ND	0.20	ug/L	0.13
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L	0.025
1-Methylnaphthalene	ND	1.0	ug/L	0.14
2-Methylnaphthalene	ND	1.0	ug/L	0.11
Naphthalene	ND	1.0	ug/L	0.049
Phenanthrene	ND	0.20	ug/L	0.11
Pyrene	ND	0.20	ug/L	0.040

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	85	(64 - 108)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

TOTAL Metals

Lot-Sample #...: D2C140285-001 Matrix.....: WG
Date Sampled...: 03/13/02 10:30 Date Received..: 03/14/02

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2078272						
Aluminum	ND	100	ug/L	SW846 6010B	03/21-03/22/02	EWEHG1AP
		Dilution Factor: 1		Analysis Time..: 17:05	MDL.....: 20.0	
Barium	25.1	10.0	ug/L	SW846 6010B	03/21-03/22/02	EWEHG1AQ
		Dilution Factor: 1		Analysis Time..: 23:32	MDL.....: 0.49	
Beryllium	ND	2.0	ug/L	SW846 6010B	03/21-03/22/02	EWEHG1AR
		Dilution Factor: 1		Analysis Time..: 23:32	MDL.....: 0.22	
Calcium	36100	200	ug/L	SW846 6010B	03/21-03/22/02	EWEHG1CE
		Dilution Factor: 1		Analysis Time..: 17:05	MDL.....: 31.0	
Cobalt	ND	10.0	ug/L	SW846 6010B	03/21-03/22/02	EWEHG1CA
		Dilution Factor: 1		Analysis Time..: 23:32	MDL.....: 0.92	
Copper	ND	20.0	ug/L	SW846 6010B	03/21-03/22/02	EWEHG1F
		Dilution Factor: 1		Analysis Time..: 23:32	MDL.....: 4.2	
Iron	43.0 B	100	ug/L	SW846 6010B	03/21-03/22/02	EWEHG1AU
		Dilution Factor: 1		Analysis Time..: 17:05	MDL.....: 13.0	
Potassium	5930	3000	ug/L	SW846 6010B	03/21-03/22/02	EWEHG1CG
		Dilution Factor: 1		Analysis Time..: 17:05	MDL.....: 490	
Magnesium	35200	200	ug/L	SW846 6010B	03/21-03/22/02	EWEHG1CF
		Dilution Factor: 1		Analysis Time..: 17:05	MDL.....: 24.0	
Manganese	2.0 B	10.0	ug/L	SW846 6010B	03/21-03/22/02	EWEHG1AV
		Dilution Factor: 1		Analysis Time..: 23:32	MDL.....: 0.49	
Sodium	53400	5000	ug/L	SW846 6010B	03/21-03/22/02	EWEHG1CH
		Dilution Factor: 1		Analysis Time..: 17:05	MDL.....: 1500	
Nickel	ND	40.0	ug/L	SW846 6010B	03/21-03/22/02	EWEHG1AW
		Dilution Factor: 1		Analysis Time..: 23:32	MDL.....: 4.1	
Tin	ND	100	ug/L	SW846 6010B	03/21-03/27/02	EWEHG1CC
		Dilution Factor: 1		Analysis Time..: 16:21	MDL.....: 3.4	

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

TOTAL Metals

Lot-Sample #...: D2C140285-001 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	**22.7**	**10.0**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWEHG1AX**
		Dilution Factor: 1		Analysis Time..: 23:32	MDL.....: 2.2	
Zinc	ND	20.0	ug/L	SW846 6010B	03/21-03/22/02	EWEHG1A0
		Dilution Factor: 1		Analysis Time..: 23:32	MDL.....: 3.3	
Molybdenum	**4.1 B**	**20.0**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWEHG1CD**
		Dilution Factor: 1		Analysis Time..: 23:32	MDL.....: 2.1	
Prep Batch #...: 2078476						
Silver	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWEHG1A6
		Dilution Factor: 1		Analysis Time..: 21:00	MDL.....: 0.012	
Arsenic	**4.6 B**	**5.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWEHG1A2**
		Dilution Factor: 1		Analysis Time..: 21:00	MDL.....: 0.061	
Cadmium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWEHG1A3
		Dilution Factor: 1		Analysis Time..: 21:00	MDL.....: 0.022	
Chromium	**1.9 J**	**1.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWEHG1A8**
		Dilution Factor: 1		Analysis Time..: 21:00	MDL.....: 0.24	
Lead	**0.22 B**	**1.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWEHG1A4**
		Dilution Factor: 1		Analysis Time..: 21:00	MDL.....: 0.15	
Antimony	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWEHG1A1
		Dilution Factor: 1		Analysis Time..: 21:00	MDL.....: 0.040	
Selenium	**6.2**	**5.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWEHG1A5**
		Dilution Factor: 1		Analysis Time..: 21:00	MDL.....: 0.19	
Thallium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWEHG1A7
		Dilution Factor: 1		Analysis Time..: 21:00	MDL.....: 0.015	
Prep Batch #...: 2085309						
Mercury	ND	0.20	ug/L	SW846 7470A	04/01/02	EWEHG1A9
		Dilution Factor: 1		Analysis Time..: 22:09	MDL.....: 0.028	

NOTE(S):

B Estimated result. Result is less than RL.

Method blank contamination. The associated method blank contains the target analyte at a reportable level.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

TOTAL Metals

Lot-Sample #...: D2C140285-002 Matrix.....: WG
Date Sampled...: 03/13/02 11:50 Date Received..: 03/14/02

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2078272						
Beryllium	ND	2.0	ug/L	SW846 6010B	03/21-03/22/02	EWEJG1A4
		Dilution Factor: 1		Analysis Time..: 23:38	MDL.....: 0.22	
Calcium	44200	200	ug/L	SW846 6010B	03/21-03/22/02	EWEJG1CE
		Dilution Factor: 1		Analysis Time..: 17:08	MDL.....: 31.0	
Cobalt	ND	10.0	ug/L	SW846 6010B	03/21-03/22/02	EWEJG1CA
		Dilution Factor: 1		Analysis Time..: 23:38	MDL.....: 0.92	
Copper	ND	20.0	ug/L	SW846 6010B	03/21-03/22/02	EWEJG1A5
		Dilution Factor: 1		Analysis Time..: 23:38	MDL.....: 4.2	
Iron	20.9 B	100	ug/L	SW846 6010B	03/21-03/22/02	EWEJG1A6
		Dilution Factor: 1		Analysis Time..: 17:08	MDL.....: 13.0	
Potassium	6550	3000	ug/L	SW846 6010B	03/21-03/22/02	EWEJG1(
		Dilution Factor: 1		Analysis Time..: 17:08	MDL.....: 490	
Magnesium	39900	200	ug/L	SW846 6010B	03/21-03/22/02	EWEJG1CF
		Dilution Factor: 1		Analysis Time..: 17:08	MDL.....: 24.0	
Manganese	2.1 B	10.0	ug/L	SW846 6010B	03/21-03/22/02	EWEJG1A7
		Dilution Factor: 1		Analysis Time..: 23:38	MDL.....: 0.49	
Sodium	55700	5000	ug/L	SW846 6010B	03/21-03/22/02	EWEJG1CH
		Dilution Factor: 1		Analysis Time..: 17:08	MDL.....: 1500	
Nickel	ND	40.0	ug/L	SW846 6010B	03/21-03/22/02	EWEJG1A8
		Dilution Factor: 1		Analysis Time..: 23:38	MDL.....: 4.1	
Tin	ND	100	ug/L	SW846 6010B	03/21-03/27/02	EWEJG1CC
		Dilution Factor: 1		Analysis Time..: 16:26	MDL.....: 3.4	
Vanadium	23.8	10.0	ug/L	SW846 6010B	03/21-03/22/02	EWEJG1A9
		Dilution Factor: 1		Analysis Time..: 23:38	MDL.....: 2.2	
Zinc	5.3 B	20.0	ug/L	SW846 6010B	03/21-03/22/02	EWEJG1AA
		Dilution Factor: 1		Analysis Time..: 23:38	MDL.....: 3.3	

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

TOTAL Metals

Lot-Sample #...: D2C140285-002 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Aluminum	**20.4 B**	**100**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWEJG1A2**
		Dilution Factor: 1		Analysis Time..: 17:08	MDL.....: 20.0	
Barium	**26.9**	**10.0**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWEJG1A3**
		Dilution Factor: 1		Analysis Time..: 23:38	MDL.....: 0.49	
Molybdenum	**4.7 B**	**20.0**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWEJG1CD**
		Dilution Factor: 1		Analysis Time..: 23:38	MDL.....: 2.1	
Prep Batch #...: 2078476						
Cadmium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWEJG1AE
		Dilution Factor: 1		Analysis Time..: 21:04	MDL.....: 0.022	
Chromium	**1.8 J**	**1.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWEJG1AK**
		Dilution Factor: 1		Analysis Time..: 21:04	MDL.....: 0.24	
ead	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWEJG1AF
		Dilution Factor: 1		Analysis Time..: 21:04	MDL.....: 0.15	
Antimony	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWEJG1AC
		Dilution Factor: 1		Analysis Time..: 21:04	MDL.....: 0.040	
Selenium	**6.3**	**5.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWEJG1AG**
		Dilution Factor: 1		Analysis Time..: 21:04	MDL.....: 0.19	
Thallium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWEJG1AJ
		Dilution Factor: 1		Analysis Time..: 21:04	MDL.....: 0.015	
Silver	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWEJG1AH
		Dilution Factor: 1		Analysis Time..: 21:04	MDL.....: 0.012	
Arsenic	**4.3 B**	**5.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWEJG1AD**
		Dilution Factor: 1		Analysis Time..: 21:04	MDL.....: 0.061	
Prep Batch #...: 2085309						
Mercury	ND	0.20	ug/L	SW846 7470A	04/01/02	EWEJG1AL
		Dilution Factor: 1		Analysis Time..: 22:11	MDL.....: 0.028	

NOTE(S):

B Estimated result. Result is less than RL.

* Method blank contamination. The associated method blank contains the target analyte at a reportable level.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

TOTAL Metals

Lot-Sample #...: D2C140285-003
Date Sampled...: 03/13/02 13:15 Date Received..: 03/14/02

Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2078272						
Zinc	12.0 B	20.0	ug/L	SW846 6010B	03/21-03/22/02	EWEJL1AA
		Dilution Factor: 1		Analysis Time..: 23:43	MDL.....: 3.3	
Aluminum	55.8 B	100	ug/L	SW846 6010B	03/21-03/22/02	EWEJL1A2
		Dilution Factor: 1		Analysis Time..: 17:12	MDL.....: 20.0	
Barium	33.5	10.0	ug/L	SW846 6010B	03/21-03/22/02	EWEJL1A3
		Dilution Factor: 1		Analysis Time..: 23:43	MDL.....: 0.49	
Beryllium	ND	2.0	ug/L	SW846 6010B	03/21-03/22/02	EWEJL1A4
		Dilution Factor: 1		Analysis Time..: 23:43	MDL.....: 0.22	
Calcium	46900	200	ug/L	SW846 6010B	03/21-03/22/02	EWEJL1CE
		Dilution Factor: 1		Analysis Time..: 17:12	MDL.....: 31.0	
Cobalt	ND	10.0	ug/L	SW846 6010B	03/21-03/22/02	EWEJL1C
		Dilution Factor: 1		Analysis Time..: 23:43	MDL.....: 0.92	
Copper	ND	20.0	ug/L	SW846 6010B	03/21-03/22/02	EWEJL1A5
		Dilution Factor: 1		Analysis Time..: 23:43	MDL.....: 4.2	
Iron	115	100	ug/L	SW846 6010B	03/21-03/22/02	EWEJL1A6
		Dilution Factor: 1		Analysis Time..: 17:12	MDL.....: 13.0	
Potassium	6800	3000	ug/L	SW846 6010B	03/21-03/22/02	EWEJL1CG
		Dilution Factor: 1		Analysis Time..: 17:12	MDL.....: 490	
Magnesium	44600	200	ug/L	SW846 6010B	03/21-03/22/02	EWEJL1CF
		Dilution Factor: 1		Analysis Time..: 17:12	MDL.....: 24.0	
Manganese	4.2 B	10.0	ug/L	SW846 6010B	03/21-03/22/02	EWEJL1A7
		Dilution Factor: 1		Analysis Time..: 23:43	MDL.....: 0.49	
Sodium	57000	5000	ug/L	SW846 6010B	03/21-03/22/02	EWEJL1CH
		Dilution Factor: 1		Analysis Time..: 17:12	MDL.....: 1500	
Nickel	ND	40.0	ug/L	SW846 6010B	03/21-03/22/02	EWEJL1A8
		Dilution Factor: 1		Analysis Time..: 23:43	MDL.....: 4.1	

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

TOTAL Metals

Lot-Sample #...: D2C140285-003 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Tin	ND	100	ug/L	SW846 6010B	03/21-03/27/02	EWEJL1CC
		Dilution Factor: 1		Analysis Time..: 16:32	MDL.....: 3.4	
Vanadium	**24.8**	**10.0**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWEJL1A9**
		Dilution Factor: 1		Analysis Time..: 23:43	MDL.....: 2.2	
Molybdenum	**3.8 B**	**20.0**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWEJL1CD**
		Dilution Factor: 1		Analysis Time..: 23:43	MDL.....: 2.1	
Prep Batch #...: 2078476						
Silver	**0.030 B**	**1.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWEJL1AH**
		Dilution Factor: 1		Analysis Time..: 21:09	MDL.....: 0.012	
Arsenic	**4.7 B**	**5.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWEJL1AD**
		Dilution Factor: 1		Analysis Time..: 21:09	MDL.....: 0.061	
admium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWEJL1AE
		Dilution Factor: 1		Analysis Time..: 21:09	MDL.....: 0.022	
Chromium	**2.5 J**	**1.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWEJL1AK**
		Dilution Factor: 1		Analysis Time..: 21:09	MDL.....: 0.24	
Lead	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWEJL1AF
		Dilution Factor: 1		Analysis Time..: 21:09	MDL.....: 0.15	
Antimony	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWEJL1AC
		Dilution Factor: 1		Analysis Time..: 21:09	MDL.....: 0.040	
Selenium	**7.8**	**5.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWEJL1AG**
		Dilution Factor: 1		Analysis Time..: 21:09	MDL.....: 0.19	
Thallium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWEJL1AJ
		Dilution Factor: 1		Analysis Time..: 21:09	MDL.....: 0.015	
Prep Batch #...: 2085309						
Mercury	ND	0.20	ug/L	SW846 7470A	04/01/02	EWEJL1AL
		Dilution Factor: 1		Analysis Time..: 22:12	MDL.....: 0.028	

NOTE(S):

B Estimated result. Result is less than RL.

Method blank contamination. The associated method blank contains the target analyte at a reportable level.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

TOTAL Metals

Lot-Sample #...: D2C140285-004 Matrix.....: WG
Date Sampled...: 03/13/02 14:30 Date Received..: 03/14/02

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2078272						
Aluminum	ND	100	ug/L	SW846 6010B	03/21-03/22/02	EWEJR1A2
		Dilution Factor: 1		Analysis Time..: 17:16	MDL.....: 20.0	
Barium	**31.7**	**10.0**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWEJR1A3**
		Dilution Factor: 1		Analysis Time..: 23:49	MDL.....: 0.49	
Beryllium	ND	2.0	ug/L	SW846 6010B	03/21-03/22/02	EWEJR1A4
		Dilution Factor: 1		Analysis Time..: 23:49	MDL.....: 0.22	
Calcium	**44700**	**200**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWEJR1CE**
		Dilution Factor: 1		Analysis Time..: 17:16	MDL.....: 31.0	
Cobalt	ND	10.0	ug/L	SW846 6010B	03/21-03/22/02	EWEJR1CA
		Dilution Factor: 1		Analysis Time..: 23:49	MDL.....: 0.92	
Copper	ND	20.0	ug/L	SW846 6010B	03/21-03/22/02	EWEJR1A
		Dilution Factor: 1		Analysis Time..: 23:49	MDL.....: 4.2	
Iron	**28.1 B**	**100**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWEJR1A6**
		Dilution Factor: 1		Analysis Time..: 17:16	MDL.....: 13.0	
Potassium	**6590**	**3000**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWEJR1CG**
		Dilution Factor: 1		Analysis Time..: 17:16	MDL.....: 490	
Magnesium	**42900**	**200**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWEJR1CF**
		Dilution Factor: 1		Analysis Time..: 17:16	MDL.....: 24.0	
Manganese	**3.6 B**	**10.0**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWEJR1A7**
		Dilution Factor: 1		Analysis Time..: 23:49	MDL.....: 0.49	
Sodium	**51600**	**5000**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWEJR1CH**
		Dilution Factor: 1		Analysis Time..: 17:16	MDL.....: 1500	
Nickel	ND	40.0	ug/L	SW846 6010B	03/21-03/22/02	EWEJR1A8
		Dilution Factor: 1		Analysis Time..: 23:49	MDL.....: 4.1	
Tin	ND	100	ug/L	SW846 6010B	03/21-03/27/02	EWEJR1CC
		Dilution Factor: 1		Analysis Time..: 16:37	MDL.....: 3.4	

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

TOTAL Metals

Lot-Sample #...: D2C140285-004 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	**25.3**	**10.0**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWEJR1A9**
		Dilution Factor: 1		Analysis Time..: 23:49	MDL.....: 2.2	
Zinc	**18.0 B**	**20.0**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWEJR1AA**
		Dilution Factor: 1		Analysis Time..: 23:49	MDL.....: 3.3	
Molybdenum	**5.1 B**	**20.0**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWEJR1CD**
		Dilution Factor: 1		Analysis Time..: 23:49	MDL.....: 2.1	
Prep Batch #...: 2078476						
Silver	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWEJR1AH
		Dilution Factor: 1		Analysis Time..: 21:13	MDL.....: 0.012	
Arsenic	**4.5 B**	**5.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWEJR1AD**
		Dilution Factor: 1		Analysis Time..: 21:13	MDL.....: 0.061	
dmium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWEJR1AE
		Dilution Factor: 1		Analysis Time..: 21:13	MDL.....: 0.022	
Chromium	**1.8 J**	**1.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWEJR1AK**
		Dilution Factor: 1		Analysis Time..: 21:13	MDL.....: 0.24	
Lead	**0.15 B**	**1.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWEJR1AF**
		Dilution Factor: 1		Analysis Time..: 21:13	MDL.....: 0.15	
Antimony	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWEJR1AC
		Dilution Factor: 1		Analysis Time..: 21:13	MDL.....: 0.040	
Selenium	**5.9**	**5.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWEJR1AG**
		Dilution Factor: 1		Analysis Time..: 21:13	MDL.....: 0.19	
Thallium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWEJR1AJ
		Dilution Factor: 1		Analysis Time..: 21:13	MDL.....: 0.015	
Prep Batch #...: 2085309						
Mercury	ND	0.20	ug/L	SW846 7470A	04/01/02	EWEJR1AL
		Dilution Factor: 1		Analysis Time..: 22:14	MDL.....: 0.028	

NOTE(S):

B Estimated result. Result is less than RL.

' Method blank contamination. The associated method blank contains the target analyte at a reportable level.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

TOTAL Metals

Lot-Sample #...: D2C140285-005 Matrix.....: WG
Date Sampled...: 03/13/02 09:00 Date Received..: 03/14/02

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2078272						
Aluminum	ND	100	ug/L	SW846 6010B	03/21-03/22/02	EWEJ51A2
		Dilution Factor: 1		Analysis Time..: 17:19	MDL.....: 20.0	
Barium	**36.4**	**10.0**	**ug/L**	**SW846 6010B**	**03/21-03/23/02**	**EWEJ51A3**
		Dilution Factor: 1		Analysis Time..: 00:05	MDL.....: 0.49	
Beryllium	ND	2.0	ug/L	SW846 6010B	03/21-03/23/02	EWEJ51A4
		Dilution Factor: 1		Analysis Time..: 00:05	MDL.....: 0.22	
Calcium	**28800**	**200**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWEJ51CE**
		Dilution Factor: 1		Analysis Time..: 17:19	MDL.....: 31.0	
Cobalt	ND	10.0	ug/L	SW846 6010B	03/21-03/23/02	EWEJ51CA
		Dilution Factor: 1		Analysis Time..: 00:05	MDL.....: 0.92	
Copper	ND	20.0	ug/L	SW846 6010B	03/21-03/23/02	EWEJ51A
		Dilution Factor: 1		Analysis Time..: 00:05	MDL.....: 4.2	
Iron	**17.0 B**	**100**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWEJ51A6**
		Dilution Factor: 1		Analysis Time..: 17:19	MDL.....: 13.0	
Potassium	**5600**	**3000**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWEJ51CG**
		Dilution Factor: 1		Analysis Time..: 17:19	MDL.....: 490	
Magnesium	**29000**	**200**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWEJ51CF**
		Dilution Factor: 1		Analysis Time..: 17:19	MDL.....: 24.0	
Manganese	**0.95 B**	**10.0**	**ug/L**	**SW846 6010B**	**03/21-03/23/02**	**EWEJ51A7**
		Dilution Factor: 1		Analysis Time..: 00:05	MDL.....: 0.49	
Sodium	**48000**	**5000**	**ug/L**	**SW846 6010B**	**03/21-03/22/02**	**EWEJ51CH**
		Dilution Factor: 1		Analysis Time..: 17:19	MDL.....: 1500	
Nickel	ND	40.0	ug/L	SW846 6010B	03/21-03/23/02	EWEJ51A8
		Dilution Factor: 1		Analysis Time..: 00:05	MDL.....: 4.1	
Tin	ND	100	ug/L	SW846 6010B	03/21-03/27/02	EWEJ51CC
		Dilution Factor: 1		Analysis Time..: 16:54	MDL.....: 3.4	

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

TOTAL Metals

Lot-Sample #...: D2C140285-005 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	**38.9**	**10.0**	**ug/L**	**SW846 6010B**	**03/21-03/27/02**	**EWEJ51A9**
		Dilution Factor: 1		Analysis Time..: 16:54	MDL.....: 2.2	
Zinc	**8.0 B**	**20.0**	**ug/L**	**SW846 6010B**	**03/21-03/23/02**	**EWEJ51AA**
		Dilution Factor: 1		Analysis Time..: 00:05	MDL.....: 3.3	
Molybdenum	**4.7 B**	**20.0**	**ug/L**	**SW846 6010B**	**03/21-03/23/02**	**EWEJ51CD**
		Dilution Factor: 1		Analysis Time..: 00:05	MDL.....: 2.1	
Prep Batch #...: 2078476						
Silver	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWEJ51AH
		Dilution Factor: 1		Analysis Time..: 21:18	MDL.....: 0.012	
Arsenic	**5.8**	**5.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWEJ51AD**
		Dilution Factor: 1		Analysis Time..: 21:18	MDL.....: 0.061	
'admium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWEJ51AE
		Dilution Factor: 1		Analysis Time..: 21:18	MDL.....: 0.022	
Chromium	**1.6 J**	**1.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWEJ51AK**
		Dilution Factor: 1		Analysis Time..: 21:18	MDL.....: 0.24	
Lead	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWEJ51AF
		Dilution Factor: 1		Analysis Time..: 21:18	MDL.....: 0.15	
Antimony	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWEJ51AC
		Dilution Factor: 1		Analysis Time..: 21:18	MDL.....: 0.040	
Selenium	**0.86 B**	**5.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWEJ51AG**
		Dilution Factor: 1		Analysis Time..: 21:18	MDL.....: 0.19	
Thallium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWEJ51AJ
		Dilution Factor: 1		Analysis Time..: 21:18	MDL.....: 0.015	
Prep Batch #...: 2085309						
Mercury	ND	0.20	ug/L	SW846 7470A	04/01/02	EWEJ51AL
		Dilution Factor: 1		Analysis Time..: 22:16	MDL.....: 0.028	

NOTE(S):

B Estimated result. Result is less than RL.

' Method blank contamination. The associated method blank contains the target analyte at a reportable level.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

General Chemistry

Lot-Sample #...: D2C140285-001 Work Order #...: EWEHG Matrix.....: WG
Date Sampled...: 03/13/02 10:30 Date Received..: 03/14/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	0.0052 B	0.010	mg/L	SW846 9012A	03/20/02	2080459
	Dilution Factor: 1			Analysis Time..: 14:00	MDL.....: 0.0020	
Perchlorate	ND	20.0	ug/L	EPA 314.0	03/15-03/16/02	2077520
	Dilution Factor: 1			Analysis Time..: 01:18	MDL.....: 1.5	
Total Organic Carbon	0.38 B,J	1.0	mg/L	SW846 9060	04/04/02	2095309
	Dilution Factor: 1			Analysis Time..: 17:00	MDL.....: 0.34	
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	03/18-03/19/02	2080258
	Dilution Factor: 1			Analysis Time..: 12:00	MDL.....: 4.5	
Total Sulfide	ND	4.0	mg/L	SW846 9030B/9034	03/19/02	2080204
	Dilution Factor: 1			Analysis Time..: 12:00	MDL.....: 0.97	

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

General Chemistry

Lot-Sample #...: D2C140285-002 **Work Order #...:** EWEJG **Matrix.....:** WG
Date Sampled...: 03/13/02 11:50 **Date Received..:** 03/14/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	**0.0081 B**	**0.010**	**mg/L**	**SW846 9012A**	**03/20/02**	**2080459**
		Dilution Factor: 1		Analysis Time..: 13:00	MDL.....: 0.0020	
Perchlorate	ND	20.0	ug/L	EPA 314.0	03/15-03/16/02	2077520
		Dilution Factor: 1		Analysis Time..: 01:36	MDL.....: 1.5	
Total Organic Carbon	**1.2 J**	**1.0**	**mg/L**	**SW846 9060**	**04/04/02**	**2095309**
		Dilution Factor: 1		Analysis Time..: 18:00	MDL.....: 0.34	
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	03/18-03/19/02	2080258
		Dilution Factor: 1		Analysis Time..: 12:00	MDL.....: 4.5	
Total Sulfide	ND	4.0	mg/L	SW846 9030B/9034	03/19/02	2080204
		Dilution Factor: 1		Analysis Time..: 12:00	MDL.....: 0.97	

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

General Chemistry

Lot-Sample #...: D2C140285-003 **Work Order #...:** EWEJL **Matrix.....:** WG
Date Sampled...: 03/13/02 13:15 **Date Received..:** 03/14/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	**0.0056 B**	**0.010**	**mg/L**	**SW846 9012A**	**03/20/02**	**2080459**
		Dilution Factor: 1		Analysis Time..: 13:00	MDL.....: 0.0020	
Perchlorate	ND	20.0	ug/L	EPA 314.0	03/15-03/16/02	2077520
		Dilution Factor: 1		Analysis Time..: 01:55	MDL.....: 1.5	
Total Organic Carbon	**1.1 J**	**1.0**	**mg/L**	**SW846 9060**	**04/04/02**	**2095309**
		Dilution Factor: 1		Analysis Time..: 18:00	MDL.....: 0.34	
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	03/18-03/19/02	2080258
		Dilution Factor: 1		Analysis Time..: 12:00	MDL.....: 4.5	
Total Sulfide	ND	4.0	mg/L	SW846 9030B/9034	03/19/02	2080204
		Dilution Factor: 1		Analysis Time..: 12:00	MDL.....: 0.97	

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-S

General Chemistry

Lot-Sample #...: D2C140285-004 **Work Order #...:** EWEJR **Matrix.....:** WG
Date Sampled...: 03/13/02 14:30 **Date Received..:** 03/14/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	**0.0052 B**	**0.010**	**mg/L**	**SW846 9012A**	**03/20/02**	**2080459**
	Dilution Factor: 1			Analysis Time..: 13:00	MDL.....: 0.0020	
Perchlorate	ND	20.0	ug/L	EPA 314.0	03/15-03/16/02	2077520
	Dilution Factor: 1			Analysis Time..: 02:14	MDL.....: 1.5	
Total Organic Carbon	**0.43 B,J**	**1.0**	**mg/L**	**SW846 9060**	**04/04/02**	**2095309**
	Dilution Factor: 1			Analysis Time..: 18:00	MDL.....: 0.34	
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	03/18-03/19/02	2080258
	Dilution Factor: 1			Analysis Time..: 12:00	MDL.....: 4.5	
Total Sulfide	ND	4.0	mg/L	SW846 9030B/9034	03/19/02	2080204
	Dilution Factor: 1			Analysis Time..: 12:00	MDL.....: 0.97	

OTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

General Chemistry

Lot-Sample #...: D2C140285-005 **Work Order #...:** EWEJ5 **Matrix.....:** WG
Date Sampled...: 03/13/02 09:00 **Date Received..:** 03/14/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	**0.0059 B**	**0.010**	**mg/L**	**SW846 9012A**	**03/20/02**	**2080459**
	Dilution Factor: 1			Analysis Time..: 13:00	MDL.....: 0.0020	
Perchlorate	ND	20.0	ug/L	EPA 314.0	03/15-03/16/02	2077520
	Dilution Factor: 1			Analysis Time..: 03:10	MDL.....: 1.5	
Total Organic Carbon	**0.62 B,J**	**1.0**	**mg/L**	**SW846 9060**	**04/04/02**	**2095309**
	Dilution Factor: 1			Analysis Time..: 19:00	MDL.....: 0.34	
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	03/18-03/19/02	2080258
	Dilution Factor: 1			Analysis Time..: 12:00	MDL.....: 4.5	
Total Sulfide	ND	4.0	mg/L	SW846 9030B/9034	03/19/02	2080204
	Dilution Factor: 1			Analysis Time..: 12:00	MDL.....: 0.97	

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

APPENDIX III

Analytical Results from Sevrn Trent Services Laboratory
for Ground-Water Samples Collected March 14, 2002
Report # D2C150182

SEVERN TRENT SERVICES

STL Denver

ANALYTICAL REPORT

Cannon AFB

Lot #: D2C150182

Richard Daddow

U.S. Geological Survey

STL DENVER

Karen Kuoppala
Project Manager

April 11, 2002

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.)*	100

- **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 D2C150182

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 with any exceptions noted below. 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.

This report contains the results for the five samples and one trip blank received under chain of custody on March 15, 2002.

Sample Receiving
The samples were received at temperatures of 5.7°C and 1.7°C.

Two sample bottles for perchlorate were received labeled with the sample ID CAFB-F. A perchlorate bottle for sample CAFB-F1 was not received. One of the perchlorate bottles labeled CAFB-F was also labeled with the sampling time and date listed on the COC for sample CAFB-F1; therefore this bottle was logged as CAFB-F1. The other perchlorate bottle labeled CAFB-F was labeled with the sampling time and date listed on the COC for sample CAFB-F; therefore this bottle was logged as CAFB-F.

GC/MS Volatile Organics, SW846 8260B
The MS/MSD was performed on a sample from another client and/or lot.

GC Semi-Volatile Organics – Pesticides, SW846 8081A
A MS/MSD was not requested and the laboratory was unable to designate one due to limited sample volume.

GC Semi-Volatile Organics – PCBs, SW846 8082
A MS/MSD was not requested and the laboratory was unable to designate one due to limited sample volume.

Total Metals, SW846 6010B, 6020, 7470A
Chromium and beryllium were detected in the method blank at concentrations below the reporting limits, but above the method detection limits. Associated positive sample results are flagged "J".

The MS/MSDs were performed on a sample from another client and/or lot.

General Chemistry, SW846 9030B/9034, EPA 314.0, 353.2, 354.1, 300.0A, 160.1

Nitrite was detected in the method blank at a concentration below the reporting limit, but above the method detection limit. Associated positive sample results are flagged "B".

The method 300.0A MS/MSD performed on sample D2C150182-001 demonstrated recoveries of sulfate above control limits. The recoveries are estimated since the results exceed the calibration range.

The method 314.0 MS/MSD performed on sample D2C150182-001 was in control for perchlorate.

The method 354.1 MS/MSD was performed on a sample from another client and/or lot.

A method 9030/9034 MS/MSD was not requested and the laboratory was unable to designate one due to limited sample volume.

The method 160.1 sample duplicate was performed on a sample from another client and/or lot.

Quality Control Definitions of Terms

Term	Definition
Batch	A set of up to 20 field samples plus associated laboratory QC samples that are similar in composition (matrix) and that are processed within the same time period with the same reagent and standard lots.
Laboratory Control Sample and Laboratory Control Sample Duplicate (LCS/LCSD)	A volume of regent water for aqueous samples or a contaminant-free solid matrix (Ottawa sand) for soil and sediment samples which is spiked with known amounts of representative target analytes and required surrogates. A LCS is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects. An LCSD is a second Laboratory Control Sample.
Matrix Spike and Matrix Spike Duplicate (MS/MSD)	A filed sample fortified with known quantities of target analytes that are also added to the LCS. Matrix spike duplicate is a second matrix spike sample. MSs/MSDs are carried throughout he entire analytical process and are used to determine sample matrix effect on accuracy of the measurement system. The accuracy and precision estimated using MS/MSD is only representative of the precision of the sample that was spiked.
Method Blank	A sample composed of all the reagents (in the same quantities) in reagent water carried through the entire analytical process. The method blank is used to monitor the level of contamination introduced during sample preparation steps.
Surrogate	Organic constituents not expected to be detected in environmental media and are added to every sample and QC at a known concentration. Surrogates are used to determine the efficiency of the sample preparation and the analytical process.
Sample Duplicate	A second aliquot of an environmental sample, taken form the same sample container when possible, that is processed independently with the first sample aliquot. The results are used to assess the effect of the sample matrix on the precision of the analytical process. The precision estimated using this sample is not necessarily representative to the precision for other samples in the batch.
Method Detection Limit "MDL"	The method detection limit is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from replicate analyses of low level standards in a typical representative matrix.
Reporting Limit "RL"	The STL reporting limit is normally the lowest level at which measurements become quantitatively meaningful, ie., the quantitation limit, which is approximately three times the MDL. Some projects require RLs that are less than the quantitation limit to achieve particular maximum contaminant levels (MCLs) or relevant and appropriate requirements (ARARs), but RLs cannot be less than the statistically determined MDL.

Quality Control Definitions of Qualifiers

Qualifier	Definition
*	Surrogate or Relative Percent Difference (RPD) is outside control limits.
a	Spiked analyte recovery is outside control limits.
B	Organics: Method blank contamination. The associated method blank contains the target analyte at a reportable level. Inorganics: Estimated result. Result is less than the RL
DIL	The concentration is estimated or not reported due to dilution.
E	Estimated result. Result concentrations exceeds the calibration range.
G	Inorganics: Elevated reporting limit. The reporting limit is elevated due to matrix interference.
J	Organics: Estimated result. Result is less than RL Inorganics: Method blank contamination. The associated method blank contains the target analyte at a reportable level.
L	Serial dilution of a digestate in the analytical batch indicates that physical and chemical interferences are present
N	Spiked analyte recovery is outside stated control limits.
NC	The recovery and/or RPD were not calculated.
ND	Non-detect
p	Relative percent difference (RPD) is outside stated control limits.
Q	Elevated reporting limit. The reporting limit is elevated due to high analyte levels.
Wa	Post digestion spike recovery fell between 40-85% due to matrix interference.
Wb	Post digestion spike recovery fell between 115-150% due to matrix interference.
IC	Diluted due to high inorganic chloride.

EXECUTIVE SUMMARY - Detection Highlights

D2C150182

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
CAFB-G 03/14/02 10:40 001				
Silver	0.026 B	1.0	ug/L	SW846 6020
Arsenic	3.1 B	5.0	ug/L	SW846 6020
Cadmium	0.032 B	1.0	ug/L	SW846 6020
Chromium	3.6 J	1.0	ug/L	SW846 6020
Lead	0.51 B	1.0	ug/L	SW846 6020
Selenium	5.9	5.0	ug/L	SW846 6020
Aluminum	71.8 B	100	ug/L	SW846 6010B
Barium	32.4	10.0	ug/L	SW846 6010B
Calcium	58100	200	ug/L	SW846 6010B
Iron	83.8 B	100	ug/L	SW846 6010B
Potassium	7320	3000	ug/L	SW846 6010B
Magnesium	54500	200	ug/L	SW846 6010B
Manganese	3.3 B	10.0	ug/L	SW846 6010B
Sodium	52900	5000	ug/L	SW846 6010B
Vanadium	18.0	10.0	ug/L	SW846 6010B
Zinc	20.2	20.0	ug/L	SW846 6010B
Total Dissolved Solids	624	10.0	mg/L	MCAWW 160.1
Nitrate	4.2	0.10	mg/L	MCAWW 353.2
Nitrite	0.0023	0.010	mg/L	MCAWW 354.1
	Qualifiers: B,J			
Sulfate	170 Q	25.0	mg/L	MCAWW 300.0A
CAFB-H 03/14/02 12:00 002				
Silver	0.053 B	1.0	ug/L	SW846 6020
Arsenic	3.3 B	5.0	ug/L	SW846 6020
Cadmium	0.030 B	1.0	ug/L	SW846 6020
Chromium	5.7 J	1.0	ug/L	SW846 6020
Lead	2.7	1.0	ug/L	SW846 6020
Selenium	6.7	5.0	ug/L	SW846 6020
Molybdenum	2.8 B	20.0	ug/L	SW846 6010B
Barium	36.9	10.0	ug/L	SW846 6010B
Calcium	43.2	0.20	mg/L	SW846 6010B
Copper	5.8 B	20.0	ug/L	SW846 6010B
Iron	0.31	0.10	mg/L	SW846 6010B
Potassium	6.8	3.0	mg/L	SW846 6010B
Magnesium	39.2	0.20	mg/L	SW846 6010B
Manganese	10.6	10.0	ug/L	SW846 6010B
Sodium	55.3	5.0	mg/L	SW846 6010B
Nickel	9.5 B	40.0	ug/L	SW846 6010B
Vanadium	20.1	10.0	ug/L	SW846 6010B
Zinc	81.1	20.0	ug/L	SW846 6010B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

D2C150182

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
CAFB-H 03/14/02 12:00 002				
Total Dissolved Solids	478	10.0	mg/L	MCAWW 160.1
Nitrate	1.8	0.10	mg/L	MCAWW 353.2
Nitrite	0.0027	0.010	mg/L	MCAWW 354.1
	Qualifiers: B,J			
Sulfate	129 Q	25.0	mg/L	MCAWW 300.0A
CAFB-E 03/14/02 13:00 003				
Silver	0.030 B	1.0	ug/L	SW846 6020
Arsenic	2.8 B	5.0	ug/L	SW846 6020
Chromium	6.9 J	1.0	ug/L	SW846 6020
Lead	6.7	1.0	ug/L	SW846 6020
Selenium	5.3	5.0	ug/L	SW846 6020
Barium	52.8	10.0	ug/L	SW846 6010B
Calcium	50.0	0.20	mg/L	SW846 6010B
Iron	0.093 B	0.10	mg/L	SW846 6010B
Potassium	6.9	3.0	mg/L	SW846 6010B
Magnesium	44.6	0.20	mg/L	SW846 6010B
Manganese	5.2 B	10.0	ug/L	SW846 6010B
Sodium	59.5	5.0	mg/L	SW846 6010B
Vanadium	18.4	10.0	ug/L	SW846 6010B
Total Dissolved Solids	549	10.0	mg/L	MCAWW 160.1
Nitrate	1.6	0.10	mg/L	MCAWW 353.2
Nitrite	0.0023	0.010	mg/L	MCAWW 354.1
	Qualifiers: B,J			
Sulfate	85.2 Q	25.0	mg/L	MCAWW 300.0A
CAFB-F 03/14/02 09:10 005				
Arsenic	2.9 B	5.0	ug/L	SW846 6020
Cadmium	0.37 B	1.0	ug/L	SW846 6020
Chromium	2.0 J	1.0	ug/L	SW846 6020
Lead	0.45 B	1.0	ug/L	SW846 6020
Selenium	6.7	5.0	ug/L	SW846 6020
Molybdenum	3.4 B	20.0	ug/L	SW846 6010B
Barium	39.9	10.0	ug/L	SW846 6010B
Calcium	49.6	0.20	mg/L	SW846 6010B
Iron	0.044 B	0.10	mg/L	SW846 6010B
Potassium	7.2	3.0	mg/L	SW846 6010B
Magnesium	45.5	0.20	mg/L	SW846 6010B
Manganese	1.2 B	10.0	ug/L	SW846 6010B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

D2C150182

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
CAFB-F 03/14/02 09:10 005				
Sodium	49.3	5.0	mg/L	SW846 6010B
Vanadium	17.4	10.0	ug/L	SW846 6010B
Zinc	14.7 B	20.0	ug/L	SW846 6010B
Total Dissolved Solids	525	10.0	mg/L	MCAWW 160.1
Nitrate	1.2	0.10	mg/L	MCAWW 353.2
Nitrite	0.0035	0.010	mg/L	MCAWW 354.1
	Qualifiers: B,J			
Sulfate	132 Q	25.0	mg/L	MCAWW 300.0A
CAFB-F1 03/14/02 09:20 006				
Arsenic	3.0 B	5.0	ug/L	SW846 6020
Cadmium	0.50 B	1.0	ug/L	SW846 6020
Chromium	2.4 J	1.0	ug/L	SW846 6020
Lead	0.41 B	1.0	ug/L	SW846 6020
Selenium	6.6	5.0	ug/L	SW846 6020
Molybdenum	3.0 B	20.0	ug/L	SW846 6010B
Barium	39.8	10.0	ug/L	SW846 6010B
Calcium	49.9	0.20	mg/L	SW846 6010B
Iron	0.027 B	0.10	mg/L	SW846 6010B
Potassium	7.3	3.0	mg/L	SW846 6010B
Magnesium	45.8	0.20	mg/L	SW846 6010B
Manganese	1.3 B	10.0	ug/L	SW846 6010B
Sodium	50.1	5.0	mg/L	SW846 6010B
Vanadium	17.8	10.0	ug/L	SW846 6010B
Zinc	15.7 B	20.0	ug/L	SW846 6010B
Total Dissolved Solids	526	10.0	mg/L	MCAWW 160.1
Nitrate	1.2	0.10	mg/L	MCAWW 353.2
Nitrite	0.0023	0.010	mg/L	MCAWW 354.1
	Qualifiers: B,J			
Sulfate	132 Q	25.0	mg/L	MCAWW 300.0A

METHODS SUMMARY

D2C150182

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
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

D2C150182

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	Roger Bain	018049
SW846 8260B	Mike Armstrong	002544
SW846 9030B/9034	Roger Winn	000597

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

D2C150182

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
EWFVX	001	CAFB-G	03/14/02	10:40
EWFX5	002	CAFB-H	03/14/02	12:00
EWFX9	003	CAFB-E	03/14/02	13:00
EWF0C	004	CAFB-F-TB	03/14/02	08:10
EWF0H	005	CAFB-F	03/14/02	09:10
EWF0R	006	CAFB-F1	03/14/02	09:20

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-G

GC/MS Volatiles

Lot-Sample #...: D2C150182-001 **Work Order #...:** EWFVX1AA **Matrix.....:** WG
Date Sampled...: 03/14/02 10:40 **Date Received..:** 03/15/02
Prep Date.....: 03/26/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2086353 **Analysis Time..:** 12:19
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-G

GC/MS Volatiles

Lot-Sample #...: D2C150182-001 Work Order #...: EWFVX1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	4.0	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	ND	1.0	ug/L	0.24
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(80 - 120)
1,2-Dichloroethane-d4	97	(72 - 127)
4-Bromofluorobenzene	98	(79 - 119)
Toluene-d8	96	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-G

GC/MS Volatiles

Lot-Sample #: D2C150182-001 **Work Order #:** EWFVX1AA **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Silane, fluorotrimethyl-	420-56-4	1.12 T2	M	5.2303	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 #...: D2C150182-002 **Work Order #...:** EWFX51AM **Matrix.....:** WG
Date Sampled...: 03/14/02 12:00 **Date Received..:** 03/15/02
Prep Date.....: 03/26/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2086353 **Analysis Time..:** 12:44
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-H

GC/MS Volatiles

Lot-Sample #...: D2C150182-002 **Work Order #...:** EWFX51AM **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	4.0	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	ND	1.0	ug/L	0.24
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(80 - 120)
1,2-Dichloroethane-d4	107	(72 - 127)
4-Bromofluorobenzene	96	(79 - 119)
Toluene-d8	95	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-H

GC/MS Volatiles

Lot-Sample #: D2C150182-002 **Work Order #:** EWFX51AM **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 #...: D2C150182-003 **Work Order #...:** EWFX91AM **Matrix.....:** WG
Date Sampled...: 03/14/02 13:00 **Date Received..:** 03/15/02
Prep Date.....: 03/26/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2086353 **Analysis Time..:** 13:09
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-E

GC/MS Volatiles

Lot-Sample #...: D2C150182-003 **Work Order #...:** EWFX91AM **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	4.0	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	ND	1.0	ug/L	0.24
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(80 - 120)
1,2-Dichloroethane-d4	113	(72 - 127)
4-Bromofluorobenzene	102	(79 - 119)
Toluene-d8	91	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-E

GC/MS Volatiles

Lot-Sample #: D2C150182-003 **Work Order #:** EWFX91AM **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		1.4	M	5.2249	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-F-TB

GC/MS Volatiles

Lot-Sample #...: D2C150182-004 **Work Order #...:** EWF0C1AA **Matrix.....:** WQ
Date Sampled...: 03/14/02 08:10 **Date Received..:** 03/15/02
Prep Date.....: 03/26/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2086353 **Analysis Time..:** 13:34
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-F-TB

GC/MS Volatiles

Lot-Sample #...: D2C150182-004 **Work Order #...:** EWF0C1AA **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	4.0	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	ND	1.0	ug/L	0.24
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(80 - 120)
1,2-Dichloroethane-d4	106	(72 - 127)
4-Bromofluorobenzene	100	(79 - 119)
Toluene-d8	95	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-F-TB

GC/MS Volatiles

Lot-Sample #: D2C150182-004 **Work Order #:** EWF0C1AA **Matrix:** WQ

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 #...: D2C150182-005 **Work Order #...:** EWF0H1AM **Matrix.....:** WG
Date Sampled...: 03/14/02 09:10 **Date Received..:** 03/15/02
Prep Date.....: 03/26/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2086353 **Analysis Time..:** 13:59
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-F

GC/MS Volatiles

Lot-Sample #...: D2C150182-005 **Work Order #...:** EWF0H1AM **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	4.0	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	ND	1.0	ug/L	0.24
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(80 - 120)
1,2-Dichloroethane-d4	110	(72 - 127)
4-Bromofluorobenzene	96	(79 - 119)
Toluene-d8	91	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-F

GC/MS Volatiles

Lot-Sample #: D2C150182-005 **Work Order #:** EWF0H1AM **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-F1

GC/MS Volatiles

Lot-Sample #...: D2C150182-006 **Work Order #...:** EWF0R1AM **Matrix.....:** WG
Date Sampled...: 03/14/02 09:20 **Date Received..:** 03/15/02
Prep Date.....: 03/26/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2086353 **Analysis Time..:** 14:24
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-F1

GC/MS Volatiles

Lot-Sample #...: D2C150182-006 **Work Order #...:** EWF0R1AM **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	4.0	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	ND	1.0	ug/L	0.24
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(80 - 120)
1,2-Dichloroethane-d4	108	(72 - 127)
4-Bromofluorobenzene	98	(79 - 119)
Toluene-d8	94	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-F1

GC/MS Volatiles

Lot-Sample #: D2C150182-006 **Work Order #:** EWF0R1AM **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-G

GC Semivolatiles

Lot-Sample #...: D2C150182-001 **Work Order #...:** EWFVX1CD **Matrix.....:** WG
Date Sampled...: 03/14/02 10:40 **Date Received..:** 03/15/02
Prep Date.....: 03/21/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2080148 **Analysis Time..:** 21:55
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aldrin	ND	0.050	ug/L	0.0070
alpha-BHC	ND	0.050	ug/L	0.0060
beta-BHC	ND	0.050	ug/L	0.0070
delta-BHC	ND	0.050	ug/L	0.0050
gamma-BHC (Lindane)	ND	0.050	ug/L	0.0050
alpha-Chlordane	ND	0.050	ug/L	0.0090
gamma-Chlordane	ND	0.050	ug/L	0.0070
4,4'-DDD	ND	0.050	ug/L	0.0080
4,4'-DDE	ND	0.050	ug/L	0.0060
4,4'-DDT	ND	0.050	ug/L	0.017
Diallate	ND	1.0	ug/L	0.50
Dieldrin	ND	0.050	ug/L	0.0050
Endosulfan I	ND	0.050	ug/L	0.0080
Endosulfan II	ND	0.050	ug/L	0.0080
Endosulfan sulfate	ND	0.050	ug/L	0.0060
Endrin	ND	0.050	ug/L	0.0060
Endrin aldehyde	ND	0.050	ug/L	0.017
Endrin ketone	ND	0.050	ug/L	0.0070
Heptachlor	ND	0.050	ug/L	0.0080
Heptachlor epoxide	ND	0.050	ug/L	0.0050
Isodrin	ND	0.10	ug/L	0.025
Kepone	ND	1.0	ug/L	0.20
Methoxychlor	ND	0.10	ug/L	0.0090
Toxaphene	ND	2.0	ug/L	0.51

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	98	(15 - 162)
Tetrachloro-m-xylene	97	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-H

GC Semivolatiles

Lot-Sample #...: D2C150182-002 **Work Order #...:** EWFX51CD **Matrix.....:** WG
Date Sampled...: 03/14/02 12:00 **Date Received..:** 03/15/02
Prep Date.....: 03/21/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2080148 **Analysis Time..:** 22:24
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aldrin	ND	0.050	ug/L	0.0070
alpha-BHC	ND	0.050	ug/L	0.0060
beta-BHC	ND	0.050	ug/L	0.0070
delta-BHC	ND	0.050	ug/L	0.0050
gamma-BHC (Lindane)	ND	0.050	ug/L	0.0050
alpha-Chlordane	ND	0.050	ug/L	0.0090
gamma-Chlordane	ND	0.050	ug/L	0.0070
4,4'-DDD	ND	0.050	ug/L	0.0080
4,4'-DDE	ND	0.050	ug/L	0.0060
4,4'-DDT	ND	0.050	ug/L	0.017
Diallate	ND	1.0	ug/L	0.50
Dieldrin	ND	0.050	ug/L	0.0050
Endosulfan I	ND	0.050	ug/L	0.0080
Endosulfan II	ND	0.050	ug/L	0.0080
Endosulfan sulfate	ND	0.050	ug/L	0.0060
Endrin	ND	0.050	ug/L	0.0060
Endrin aldehyde	ND	0.050	ug/L	0.017
Endrin ketone	ND	0.050	ug/L	0.0070
Heptachlor	ND	0.050	ug/L	0.0080
Heptachlor epoxide	ND	0.050	ug/L	0.0050
Isodrin	ND	0.10	ug/L	0.025
Kepone	ND	1.0	ug/L	0.20
Methoxychlor	ND	0.10	ug/L	0.0090
Toxaphene	ND	2.0	ug/L	0.51

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	95	(15 - 162)
Tetrachloro-m-xylene	96	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-E

GC Semivolatiles

Lot-Sample #...: D2C150182-003 **Work Order #...:** EWFX91CD **Matrix.....:** WG
Date Sampled...: 03/14/02 13:00 **Date Received..:** 03/15/02
Prep Date.....: 03/21/02 **Analysis Date..:** 03/23/02
Prep Batch #...: 2080148 **Analysis Time..:** 00:47
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aldrin	ND	0.050	ug/L	0.0070
alpha-BHC	ND	0.050	ug/L	0.0060
beta-BHC	ND	0.050	ug/L	0.0070
delta-BHC	ND	0.050	ug/L	0.0050
gamma-BHC (Lindane)	ND	0.050	ug/L	0.0050
alpha-Chlordane	ND	0.050	ug/L	0.0090
gamma-Chlordane	ND	0.050	ug/L	0.0070
4,4'-DDD	ND	0.050	ug/L	0.0080
4,4'-DDE	ND	0.050	ug/L	0.0060
4,4'-DDT	ND	0.050	ug/L	0.017
Diallate	ND	1.0	ug/L	0.50
Dieldrin	ND	0.050	ug/L	0.0050
Endosulfan I	ND	0.050	ug/L	0.0080
Endosulfan II	ND	0.050	ug/L	0.0080
Endosulfan sulfate	ND	0.050	ug/L	0.0060
Endrin	ND	0.050	ug/L	0.0060
Endrin aldehyde	ND	0.050	ug/L	0.017
Endrin ketone	ND	0.050	ug/L	0.0070
Heptachlor	ND	0.050	ug/L	0.0080
Heptachlor epoxide	ND	0.050	ug/L	0.0050
Isodrin	ND	0.10	ug/L	0.025
Kepone	ND	1.0	ug/L	0.20
Methoxychlor	ND	0.10	ug/L	0.0090
Toxaphene	ND	2.0	ug/L	0.51

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	103	(15 - 162)
Tetrachloro-m-xylene	97	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-F

GC Semivolatiles

Lot-Sample #...: D2C150182-005 **Work Order #...:** EWF0H1CD **Matrix.....:** WG
Date Sampled...: 03/14/02 09:10 **Date Received..:** 03/15/02
Prep Date.....: 03/21/02 **Analysis Date..:** 03/23/02
Prep Batch #...: 2080148 **Analysis Time..:** 01:16
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aldrin	ND	0.050	ug/L	0.0070
alpha-BHC	ND	0.050	ug/L	0.0060
beta-BHC	ND	0.050	ug/L	0.0070
delta-BHC	ND	0.050	ug/L	0.0050
gamma-BHC (Lindane)	ND	0.050	ug/L	0.0050
alpha-Chlordane	ND	0.050	ug/L	0.0090
gamma-Chlordane	ND	0.050	ug/L	0.0070
4,4'-DDD	ND	0.050	ug/L	0.0080
4,4'-DDE	ND	0.050	ug/L	0.0060
4,4'-DDT	ND	0.050	ug/L	0.017
Diallate	ND	1.0	ug/L	0.50
Dieldrin	ND	0.050	ug/L	0.0050
Endosulfan I	ND	0.050	ug/L	0.0080
Endosulfan II	ND	0.050	ug/L	0.0080
Endosulfan sulfate	ND	0.050	ug/L	0.0060
Endrin	ND	0.050	ug/L	0.0060
Endrin aldehyde	ND	0.050	ug/L	0.017
Endrin ketone	ND	0.050	ug/L	0.0070
Heptachlor	ND	0.050	ug/L	0.0080
Heptachlor epoxide	ND	0.050	ug/L	0.0050
Isodrin	ND	0.10	ug/L	0.025
Kepone	ND	1.0	ug/L	0.20
Methoxychlor	ND	0.10	ug/L	0.0090
Toxaphene	ND	2.0	ug/L	0.51

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	104	(15 - 162)
Tetrachloro-m-xylene	96	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-F1

GC Semivolatiles

Lot-Sample #...: D2C150182-006 **Work Order #...:** EWF0R1CD **Matrix.....:** WG
Date Sampled...: 03/14/02 09:20 **Date Received..:** 03/15/02
Prep Date.....: 03/21/02 **Analysis Date..:** 03/23/02
Prep Batch #...: 2080148 **Analysis Time..:** 01:45
Dilution Factor: 1

Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aldrin	ND	0.050	ug/L	0.0070
alpha-BHC	ND	0.050	ug/L	0.0060
beta-BHC	ND	0.050	ug/L	0.0070
delta-BHC	ND	0.050	ug/L	0.0050
gamma-BHC (Lindane)	ND	0.050	ug/L	0.0050
alpha-Chlordane	ND	0.050	ug/L	0.0090
gamma-Chlordane	ND	0.050	ug/L	0.0070
4,4'-DDD	ND	0.050	ug/L	0.0080
4,4'-DDE	ND	0.050	ug/L	0.0060
4,4'-DDT	ND	0.050	ug/L	0.017
Diallate	ND	1.0	ug/L	0.50
Dieldrin	ND	0.050	ug/L	0.0050
Endosulfan I	ND	0.050	ug/L	0.0080
Endosulfan II	ND	0.050	ug/L	0.0080
Endosulfan sulfate	ND	0.050	ug/L	0.0060
Endrin	ND	0.050	ug/L	0.0060
Endrin aldehyde	ND	0.050	ug/L	0.017
Endrin ketone	ND	0.050	ug/L	0.0070
Heptachlor	ND	0.050	ug/L	0.0080
Heptachlor epoxide	ND	0.050	ug/L	0.0050
Isodrin	ND	0.10	ug/L	0.025
Kepone	ND	1.0	ug/L	0.20
Methoxychlor	ND	0.10	ug/L	0.0090
Toxaphene	ND	2.0	ug/L	0.51

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	101	(15 - 162)
Tetrachloro-m-xylene	94	(49 - 133)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-G

GC Semivolatiles

Lot-Sample #...: D2C150182-001 Work Order #...: EWFVX1CE Matrix.....: WG
Date Sampled...: 03/14/02 10:40 Date Received..: 03/15/02
Prep Date.....: 03/21/02 Analysis Date..: 03/22/02
Prep Batch #...: 2080152 Analysis Time..: 15:16
Dilution Factor: 1
Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND	1.0	ug/L	0.085
Aroclor 1221	ND	1.0	ug/L	0.12
Aroclor 1232	ND	1.0	ug/L	0.10
Aroclor 1242	ND	1.0	ug/L	0.12
Aroclor 1248	ND	1.0	ug/L	0.079
Aroclor 1254	ND	1.0	ug/L	0.074
Aroclor 1260	ND	1.0	ug/L	0.060

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	76	(41 - 107)
Decachlorobiphenyl	102	(46 - 131)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-H

GC Semivolatiles

Lot-Sample #...: D2C150182-002 **Work Order #...:** EWFX51CE **Matrix.....:** WG
Date Sampled...: 03/14/02 12:00 **Date Received..:** 03/15/02
Prep Date.....: 03/21/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2080152 **Analysis Time..:** 15:42
Dilution Factor: 1

Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND	1.0	ug/L	0.085
Aroclor 1221	ND	1.0	ug/L	0.12
Aroclor 1232	ND	1.0	ug/L	0.10
Aroclor 1242	ND	1.0	ug/L	0.12
Aroclor 1248	ND	1.0	ug/L	0.079
Aroclor 1254	ND	1.0	ug/L	0.074
Aroclor 1260	ND	1.0	ug/L	0.060

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	79	(41 - 107)
Decachlorobiphenyl	98	(46 - 131)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-E

GC Semivolatiles

Lot-Sample #...: D2C150182-003 **Work Order #...:** EWFX91CE **Matrix.....:** WG
Date Sampled...: 03/14/02 13:00 **Date Received..:** 03/15/02
Prep Date.....: 03/21/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2080152 **Analysis Time..:** 16:08
Dilution Factor: 1

Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND	1.0	ug/L	0.085
Aroclor 1221	ND	1.0	ug/L	0.12
Aroclor 1232	ND	1.0	ug/L	0.10
Aroclor 1242	ND	1.0	ug/L	0.12
Aroclor 1248	ND	1.0	ug/L	0.079
Aroclor 1254	ND	1.0	ug/L	0.074
Aroclor 1260	ND	1.0	ug/L	0.060

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	73	(41 - 107)
Decachlorobiphenyl	104	(46 - 131)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-F

GC Semivolatiles

Lot-Sample #...: D2C150182-005 **Work Order #...:** EWF0H1CE **Matrix.....:** WG
Date Sampled...: 03/14/02 09:10 **Date Received..:** 03/15/02
Prep Date.....: 03/21/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2080152 **Analysis Time..:** 16:33
Dilution Factor: 1

Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND	1.0	ug/L	0.085
Aroclor 1221	ND	1.0	ug/L	0.12
Aroclor 1232	ND	1.0	ug/L	0.10
Aroclor 1242	ND	1.0	ug/L	0.12
Aroclor 1248	ND	1.0	ug/L	0.079
Aroclor 1254	ND	1.0	ug/L	0.074
Aroclor 1260	ND	1.0	ug/L	0.060

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	75	(41 - 107)
Decachlorobiphenyl	104	(46 - 131)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-F1

GC Semivolatiles

Lot-Sample #...: D2C150182-006 **Work Order #...:** EWF0R1CE **Matrix.....:** WG
Date Sampled...: 03/14/02 09:20 **Date Received..:** 03/15/02
Prep Date.....: 03/21/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2080152 **Analysis Time..:** 16:59
Dilution Factor: 1

Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND	1.0	ug/L	0.085
Aroclor 1221	ND	1.0	ug/L	0.12
Aroclor 1232	ND	1.0	ug/L	0.10
Aroclor 1242	ND	1.0	ug/L	0.12
Aroclor 1248	ND	1.0	ug/L	0.079
Aroclor 1254	ND	1.0	ug/L	0.074
Aroclor 1260	ND	1.0	ug/L	0.060

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	75	(41 - 107)
Decachlorobiphenyl	100	(46 - 131)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-G

TOTAL Metals

Lot-Sample #...: D2C150182-001 **Matrix.....:** WG
Date Sampled...: 03/14/02 10:40 **Date Received..:** 03/15/02

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2078369						
Aluminum	**71.8 B**	**100**	**ug/L**	**SW846 6010B**	**03/22-03/25/02**	**EWFVX1AJ**
		Dilution Factor: 1		Analysis Time..: 17:30	MDL.....: 20.0	
Barium	**32.4**	**10.0**	**ug/L**	**SW846 6010B**	**03/22-03/27/02**	**EWFVX1AK**
		Dilution Factor: 1		Analysis Time..: 10:37	MDL.....: 0.49	
Beryllium	ND	2.0	ug/L	SW846 6010B	03/22-03/27/02	EWFVX1AL
		Dilution Factor: 1		Analysis Time..: 10:37	MDL.....: 0.22	
Calcium	**58100**	**200**	**ug/L**	**SW846 6010B**	**03/22-03/25/02**	**EWFVX1A8**
		Dilution Factor: 1		Analysis Time..: 17:30	MDL.....: 31.0	
Cobalt	ND	10.0	ug/L	SW846 6010B	03/22-03/27/02	EWFVX1A5
		Dilution Factor: 1		Analysis Time..: 10:37	MDL.....: 0.92	
Copper	ND	20.0	ug/L	SW846 6010B	03/22-03/27/02	EWFVX1A
		Dilution Factor: 1		Analysis Time..: 10:37	MDL.....: 4.2	
Iron	**83.8 B**	**100**	**ug/L**	**SW846 6010B**	**03/22-03/25/02**	**EWFVX1AN**
		Dilution Factor: 1		Analysis Time..: 17:30	MDL.....: 13.0	
Potassium	**7320**	**3000**	**ug/L**	**SW846 6010B**	**03/22-03/25/02**	**EWFVX1CA**
		Dilution Factor: 1		Analysis Time..: 17:30	MDL.....: 490	
Magnesium	**54500**	**200**	**ug/L**	**SW846 6010B**	**03/22-03/25/02**	**EWFVX1A9**
		Dilution Factor: 1		Analysis Time..: 17:30	MDL.....: 24.0	
Manganese	**3.3 B**	**10.0**	**ug/L**	**SW846 6010B**	**03/22-03/27/02**	**EWFVX1AP**
		Dilution Factor: 1		Analysis Time..: 10:37	MDL.....: 0.49	
Sodium	**52900**	**5000**	**ug/L**	**SW846 6010B**	**03/22-03/25/02**	**EWFVX1CC**
		Dilution Factor: 1		Analysis Time..: 17:30	MDL.....: 1500	
Nickel	ND	40.0	ug/L	SW846 6010B	03/22-03/27/02	EWFVX1AQ
		Dilution Factor: 1		Analysis Time..: 10:37	MDL.....: 4.1	
Tin	ND	100	ug/L	SW846 6010B	03/22-03/27/02	EWFVX1A6
		Dilution Factor: 1		Analysis Time..: 10:37	MDL.....: 3.4	

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-G

TOTAL Metals

Lot-Sample #...: D2C150182-001 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	**18.0**	**10.0**	**ug/L**	**SW846 6010B**	**03/22-03/27/02**	**EWFVX1AR**
		Dilution Factor: 1		Analysis Time..: 10:37	MDL.....: 2.2	
Zinc	**20.2**	**20.0**	**ug/L**	**SW846 6010B**	**03/22-03/27/02**	**EWFVX1AT**
		Dilution Factor: 1		Analysis Time..: 10:37	MDL.....: 3.3	
Molybdenum	ND	20.0	ug/L	SW846 6010B	03/22-03/27/02	EWFVX1A7
		Dilution Factor: 1		Analysis Time..: 10:37	MDL.....: 2.1	
Prep Batch #...: 2078476						
Silver	**0.026 B**	**1.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWFVX1A1**
		Dilution Factor: 1		Analysis Time..: 21:33	MDL.....: 0.012	
Arsenic	**3.1 B**	**5.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWFVX1AV**
		Dilution Factor: 1		Analysis Time..: 21:33	MDL.....: 0.061	
Cadmium	**0.032 B**	**1.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWFVX1AW**
		Dilution Factor: 1		Analysis Time..: 21:33	MDL.....: 0.022	
Chromium	**3.6 J**	**1.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWFVX1A3**
		Dilution Factor: 1		Analysis Time..: 21:33	MDL.....: 0.24	
Lead	**0.51 B**	**1.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWFVX1AX**
		Dilution Factor: 1		Analysis Time..: 21:33	MDL.....: 0.15	
Antimony	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWFVX1AU
		Dilution Factor: 1		Analysis Time..: 21:33	MDL.....: 0.040	
Selenium	**5.9**	**5.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWFVX1A0**
		Dilution Factor: 1		Analysis Time..: 21:33	MDL.....: 0.19	
Thallium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWFVX1A2
		Dilution Factor: 1		Analysis Time..: 21:33	MDL.....: 0.015	
Prep Batch #...: 2085309						
Mercury	ND	0.20	ug/L	SW846 7470A	04/01/02	EWFVX1A4
		Dilution Factor: 1		Analysis Time..: 22:18	MDL.....: 0.028	

NOTE(S):

B Estimated result. Result is less than RL.

! Method blank contamination. The associated method blank contains the target analyte at a reportable level.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-H

TOTAL Metals

Lot-Sample #...: D2C150182-002 **Matrix.....:** WG
Date Sampled...: 03/14/02 12:00 **Date Received..:** 03/15/02

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2078369						
Aluminum	ND	0.10	mg/L	SW846 6010B	03/22-03/25/02	EWFX51AV
		Dilution Factor: 1		Analysis Time..: 17:34	MDL.....: 0.020	
Barium	**36.9**	**10.0**	**ug/L**	**SW846 6010B**	**03/22-03/27/02**	**EWFX51AW**
		Dilution Factor: 1		Analysis Time..: 10:42	MDL.....: 0.49	
Beryllium	ND	2.0	ug/L	SW846 6010B	03/22-03/27/02	EWFX51AX
		Dilution Factor: 1		Analysis Time..: 10:42	MDL.....: 0.22	
Calcium	**43.2**	**0.20**	**mg/L**	**SW846 6010B**	**03/22-03/25/02**	**EWFX51AK**
		Dilution Factor: 1		Analysis Time..: 17:34	MDL.....: 0.031	
Cobalt	ND	10.0	ug/L	SW846 6010B	03/22-03/27/02	EWFX51AG
		Dilution Factor: 1		Analysis Time..: 10:42	MDL.....: 0.92	
Copper	**5.8 B**	**20.0**	**ug/L**	**SW846 6010B**	**03/22-03/27/02**	**EWFX51**
		Dilution Factor: 1		Analysis Time..: 10:42	MDL.....: 4.2	
Iron	0.31	0.10	mg/L	SW846 6010B	03/22-03/25/02	EWFX51A1
		Dilution Factor: 1		Analysis Time..: 17:34	MDL.....: 0.013	
Potassium	**6.8**	**3.0**	**mg/L**	**SW846 6010B**	**03/22-03/25/02**	**EWFX51CA**
		Dilution Factor: 1		Analysis Time..: 17:34	MDL.....: 0.49	
Magnesium	**39.2**	**0.20**	**mg/L**	**SW846 6010B**	**03/22-03/25/02**	**EWFX51AL**
		Dilution Factor: 1		Analysis Time..: 17:34	MDL.....: 0.024	
Manganese	**10.6**	**10.0**	**ug/L**	**SW846 6010B**	**03/22-03/27/02**	**EWFX51A2**
		Dilution Factor: 1		Analysis Time..: 10:42	MDL.....: 0.49	
Sodium	**55.3**	**5.0**	**mg/L**	**SW846 6010B**	**03/22-03/25/02**	**EWFX51CC**
		Dilution Factor: 1		Analysis Time..: 17:34	MDL.....: 1.5	
Nickel	**9.5 B**	**40.0**	**ug/L**	**SW846 6010B**	**03/22-03/27/02**	**EWFX51A3**
		Dilution Factor: 1		Analysis Time..: 10:42	MDL.....: 4.1	
Tin	ND	100	ug/L	SW846 6010B	03/22-03/27/02	EWFX51AH
		Dilution Factor: 1		Analysis Time..: 10:42	MDL.....: 3.4	

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-H

TOTAL Metals

Lot-Sample #...: D2C150182-002 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	20.1	10.0	ug/L	SW846 6010B	03/22-03/27/02	EWFX51A4
		Dilution Factor: 1		Analysis Time..: 10:42	MDL.....: 2.2	
Zinc	81.1	20.0	ug/L	SW846 6010B	03/22-03/27/02	EWFX51A5
		Dilution Factor: 1		Analysis Time..: 10:42	MDL.....: 3.3	
Molybdenum	2.8 B	20.0	ug/L	SW846 6010B	03/22-03/27/02	EWFX51AJ
		Dilution Factor: 1		Analysis Time..: 10:42	MDL.....: 2.1	
Prep Batch #...: 2078476						
Silver	0.053 B	1.0	ug/L	SW846 6020	03/25-03/27/02	EWFX51AC
		Dilution Factor: 1		Analysis Time..: 21:37	MDL.....: 0.012	
Arsenic	3.3 B	5.0	ug/L	SW846 6020	03/25-03/27/02	EWFX51A7
		Dilution Factor: 1		Analysis Time..: 21:37	MDL.....: 0.061	
Cadmium	0.030 B	1.0	ug/L	SW846 6020	03/25-03/27/02	EWFX51A8
		Dilution Factor: 1		Analysis Time..: 21:37	MDL.....: 0.022	
Chromium	5.7 J	1.0	ug/L	SW846 6020	03/25-03/27/02	EWFX51AE
		Dilution Factor: 1		Analysis Time..: 21:37	MDL.....: 0.24	
Lead	2.7	1.0	ug/L	SW846 6020	03/25-03/27/02	EWFX51A9
		Dilution Factor: 1		Analysis Time..: 21:37	MDL.....: 0.15	
Antimony	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWFX51A6
		Dilution Factor: 1		Analysis Time..: 21:37	MDL.....: 0.040	
Selenium	6.7	5.0	ug/L	SW846 6020	03/25-03/27/02	EWFX51AA
		Dilution Factor: 1		Analysis Time..: 21:37	MDL.....: 0.19	
Thallium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWFX51AD
		Dilution Factor: 1		Analysis Time..: 21:37	MDL.....: 0.015	
Prep Batch #...: 2085309						
Mercury	ND	0.20	ug/L	SW846 7470A	04/01/02	EWFX51AF
		Dilution Factor: 1		Analysis Time..: 22:20	MDL.....: 0.028	

NOTE(S):

B Estimated result. Result is less than RL.

I Method blank contamination. The associated method blank contains the target analyte at a reportable level.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-E

TOTAL Metals

Lot-Sample #...: D2C150182-003 Matrix.....: WG
Date Sampled...: 03/14/02 13:00 Date Received..: 03/15/02

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2078369						
Aluminum	ND	0.10	mg/L	SW846 6010B	03/22-03/25/02	EWFX91AV
		Dilution Factor: 1		Analysis Time..: 17:44	MDL.....: 0.020	
Barium	**52.8**	**10.0**	**ug/L**	**SW846 6010B**	**03/22-03/27/02**	**EWFX91AW**
		Dilution Factor: 1		Analysis Time..: 10:48	MDL.....: 0.49	
Beryllium	ND	2.0	ug/L	SW846 6010B	03/22-03/27/02	EWFX91AX
		Dilution Factor: 1		Analysis Time..: 10:48	MDL.....: 0.22	
Calcium	**50.0**	**0.20**	**mg/L**	**SW846 6010B**	**03/22-03/25/02**	**EWFX91AK**
		Dilution Factor: 1		Analysis Time..: 17:44	MDL.....: 0.031	
Cobalt	ND	10.0	ug/L	SW846 6010B	03/22-03/27/02	EWFX91AG
		Dilution Factor: 1		Analysis Time..: 10:48	MDL.....: 0.92	
Copper	ND	20.0	ug/L	SW846 6010B	03/22-03/27/02	EWFX91F
		Dilution Factor: 1		Analysis Time..: 10:48	MDL.....: 4.2	
Iron	**0.093 B**	**0.10**	**mg/L**	**SW846 6010B**	**03/22-03/25/02**	**EWFX91A1**
		Dilution Factor: 1		Analysis Time..: 17:44	MDL.....: 0.013	
Potassium	**6.9**	**3.0**	**mg/L**	**SW846 6010B**	**03/22-03/25/02**	**EWFX91CA**
		Dilution Factor: 1		Analysis Time..: 17:44	MDL.....: 0.49	
Magnesium	**44.6**	**0.20**	**mg/L**	**SW846 6010B**	**03/22-03/25/02**	**EWFX91AL**
		Dilution Factor: 1		Analysis Time..: 17:44	MDL.....: 0.024	
Manganese	**5.2 B**	**10.0**	**ug/L**	**SW846 6010B**	**03/22-03/27/02**	**EWFX91A2**
		Dilution Factor: 1		Analysis Time..: 10:48	MDL.....: 0.49	
Sodium	**59.5**	**5.0**	**mg/L**	**SW846 6010B**	**03/22-03/25/02**	**EWFX91CC**
		Dilution Factor: 1		Analysis Time..: 17:44	MDL.....: 1.5	
Nickel	ND	40.0	ug/L	SW846 6010B	03/22-03/27/02	EWFX91A3
		Dilution Factor: 1		Analysis Time..: 10:48	MDL.....: 4.1	
Tin	ND	100	ug/L	SW846 6010B	03/22-03/27/02	EWFX91AH
		Dilution Factor: 1		Analysis Time..: 10:48	MDL.....: 3.4	

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-E

TOTAL Metals

Lot-Sample #...: D2C150182-003 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	**18.4**	**10.0**	**ug/L**	**SW846 6010B**	**03/22-03/27/02**	**EWFX91A4**
		Dilution Factor: 1		Analysis Time..: 10:48	MDL.....: 2.2	
Zinc	ND	20.0	ug/L	SW846 6010B	03/22-03/27/02	EWFX91A5
		Dilution Factor: 1		Analysis Time..: 10:48	MDL.....: 3.3	
Molybdenum	ND	20.0	ug/L	SW846 6010B	03/22-03/27/02	EWFX91AJ
		Dilution Factor: 1		Analysis Time..: 10:48	MDL.....: 2.1	
Prep Batch #...: 2078476						
Silver	**0.030 B**	**1.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWFX91AC**
		Dilution Factor: 1		Analysis Time..: 21:42	MDL.....: 0.012	
Arsenic	**2.8 B**	**5.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWFX91A7**
		Dilution Factor: 1		Analysis Time..: 21:42	MDL.....: 0.061	
admium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWFX91A8
		Dilution Factor: 1		Analysis Time..: 21:42	MDL.....: 0.022	
Chromium	**6.9 J**	**1.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWFX91AE**
		Dilution Factor: 1		Analysis Time..: 21:42	MDL.....: 0.24	
Lead	**6.7**	**1.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWFX91A9**
		Dilution Factor: 1		Analysis Time..: 21:42	MDL.....: 0.15	
Antimony	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWFX91A6
		Dilution Factor: 1		Analysis Time..: 21:42	MDL.....: 0.040	
Selenium	**5.3**	**5.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWFX91AA**
		Dilution Factor: 1		Analysis Time..: 21:42	MDL.....: 0.19	
Thallium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWFX91AD
		Dilution Factor: 1		Analysis Time..: 21:42	MDL.....: 0.015	
Prep Batch #...: 2085309						
Mercury	ND	0.20	ug/L	SW846 7470A	04/01/02	EWFX91AF
		Dilution Factor: 1		Analysis Time..: 22:21	MDL.....: 0.028	

NOTE(S):

B Estimated result. Result is less than RL.

* Method blank contamination. The associated method blank contains the target analyte at a reportable level.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-F

TOTAL Metals

Lot-Sample #...: D2C150182-005 Matrix.....: WG
Date Sampled...: 03/14/02 09:10 Date Received..: 03/15/02

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2078369						
Aluminum	ND	0.10	mg/L	SW846 6010B	03/22-03/25/02	EWF0H1AV
		Dilution Factor: 1		Analysis Time..: 17:48	MDL.....: 0.020	
Barium	**39.9**	**10.0**	**ug/L**	**SW846 6010B**	**03/22-03/27/02**	**EWF0H1AW**
		Dilution Factor: 1		Analysis Time..: 10:53	MDL.....: 0.49	
Beryllium	ND	2.0	ug/L	SW846 6010B	03/22-03/27/02	EWF0H1AX
		Dilution Factor: 1		Analysis Time..: 10:53	MDL.....: 0.22	
Calcium	**49.6**	**0.20**	**mg/L**	**SW846 6010B**	**03/22-03/25/02**	**EWF0H1AK**
		Dilution Factor: 1		Analysis Time..: 17:48	MDL.....: 0.031	
Cobalt	ND	10.0	ug/L	SW846 6010B	03/22-03/27/02	EWF0H1AG
		Dilution Factor: 1		Analysis Time..: 10:53	MDL.....: 0.92	
Copper	ND	20.0	ug/L	SW846 6010B	03/22-03/27/02	EWF0H1
		Dilution Factor: 1		Analysis Time..: 10:53	MDL.....: 4.2	
Iron	**0.044 B**	**0.10**	**mg/L**	**SW846 6010B**	**03/22-03/25/02**	**EWF0H1A1**
		Dilution Factor: 1		Analysis Time..: 17:48	MDL.....: 0.013	
Potassium	**7.2**	**3.0**	**mg/L**	**SW846 6010B**	**03/22-03/25/02**	**EWF0H1CA**
		Dilution Factor: 1		Analysis Time..: 17:48	MDL.....: 0.49	
Magnesium	**45.5**	**0.20**	**mg/L**	**SW846 6010B**	**03/22-03/25/02**	**EWF0H1AL**
		Dilution Factor: 1		Analysis Time..: 17:48	MDL.....: 0.024	
Manganese	**1.2 B**	**10.0**	**ug/L**	**SW846 6010B**	**03/22-03/27/02**	**EWF0H1A2**
		Dilution Factor: 1		Analysis Time..: 10:53	MDL.....: 0.49	
Sodium	**49.3**	**5.0**	**mg/L**	**SW846 6010B**	**03/22-03/25/02**	**EWF0H1CC**
		Dilution Factor: 1		Analysis Time..: 17:48	MDL.....: 1.5	
Nickel	ND	40.0	ug/L	SW846 6010B	03/22-03/27/02	EWF0H1A3
		Dilution Factor: 1		Analysis Time..: 10:53	MDL.....: 4.1	
Tin	ND	100	ug/L	SW846 6010B	03/22-03/27/02	EWF0H1AH
		Dilution Factor: 1		Analysis Time..: 10:53	MDL.....: 3.4	

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-F

TOTAL Metals

Lot-Sample #...: D2C150182-005 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	17.4	10.0	ug/L	SW846 6010B	03/22-03/27/02	EWF0H1A4
		Dilution Factor: 1		Analysis Time..: 10:53	MDL.....: 2.2	
Zinc	14.7 B	20.0	ug/L	SW846 6010B	03/22-03/27/02	EWF0H1A5
		Dilution Factor: 1		Analysis Time..: 10:53	MDL.....: 3.3	
Molybdenum	3.4 B	20.0	ug/L	SW846 6010B	03/22-03/27/02	EWF0H1AJ
		Dilution Factor: 1		Analysis Time..: 10:53	MDL.....: 2.1	
Prep Batch #...: 2078476						
Silver	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWF0H1AC
		Dilution Factor: 1		Analysis Time..: 21:46	MDL.....: 0.012	
Arsenic	2.9 B	5.0	ug/L	SW846 6020	03/25-03/27/02	EWF0H1A7
		Dilution Factor: 1		Analysis Time..: 21:46	MDL.....: 0.061	
'admium	0.37 B	1.0	ug/L	SW846 6020	03/25-03/27/02	EWF0H1A8
		Dilution Factor: 1		Analysis Time..: 21:46	MDL.....: 0.022	
Chromium	2.0 J	1.0	ug/L	SW846 6020	03/25-03/27/02	EWF0H1AE
		Dilution Factor: 1		Analysis Time..: 21:46	MDL.....: 0.24	
Lead	0.45 B	1.0	ug/L	SW846 6020	03/25-03/27/02	EWF0H1A9
		Dilution Factor: 1		Analysis Time..: 21:46	MDL.....: 0.15	
Antimony	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWF0H1A6
		Dilution Factor: 1		Analysis Time..: 21:46	MDL.....: 0.040	
Selenium	6.7	5.0	ug/L	SW846 6020	03/25-03/27/02	EWF0H1AA
		Dilution Factor: 1		Analysis Time..: 21:46	MDL.....: 0.19	
Thallium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWF0H1AD
		Dilution Factor: 1		Analysis Time..: 21:46	MDL.....: 0.015	
Prep Batch #...: 2085309						
Mercury	ND	0.20	ug/L	SW846 7470A	04/01/02	EWF0H1AF
		Dilution Factor: 1		Analysis Time..: 22:23	MDL.....: 0.028	

NOTE(S):

B Estimated result. Result is less than RL.

' Method blank contamination. The associated method blank contains the target analyte at a reportable level.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-F1

TOTAL Metals

Lot-Sample #...: D2C150182-006 Matrix.....: WG
Date Sampled...: 03/14/02 09:20 Date Received..: 03/15/02

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2078369						
Aluminum	ND	0.10	mg/L	SW846 6010B	03/22-03/25/02	EWF0R1AV
		Dilution Factor: 1		Analysis Time..: 17:52	MDL.....: 0.020	
Barium	**39.8**	**10.0**	**ug/L**	**SW846 6010B**	**03/22-03/27/02**	**EWF0R1AW**
		Dilution Factor: 1		Analysis Time..: 10:59	MDL.....: 0.49	
Beryllium	ND	2.0	ug/L	SW846 6010B	03/22-03/27/02	EWF0R1AX
		Dilution Factor: 1		Analysis Time..: 10:59	MDL.....: 0.22	
Calcium	**49.9**	**0.20**	**mg/L**	**SW846 6010B**	**03/22-03/25/02**	**EWF0R1AK**
		Dilution Factor: 1		Analysis Time..: 17:52	MDL.....: 0.031	
Cobalt	ND	10.0	ug/L	SW846 6010B	03/22-03/27/02	EWF0R1AG
		Dilution Factor: 1		Analysis Time..: 10:59	MDL.....: 0.92	
Copper	ND	20.0	ug/L	SW846 6010B	03/22-03/27/02	EWF0R1[illegible]
		Dilution Factor: 1		Analysis Time..: 10:59	MDL.....: 4.2	
Iron	**0.027 B**	**0.10**	**mg/L**	**SW846 6010B**	**03/22-03/25/02**	**EWF0R1A1**
		Dilution Factor: 1		Analysis Time..: 17:52	MDL.....: 0.013	
Potassium	**7.3**	**3.0**	**mg/L**	**SW846 6010B**	**03/22-03/25/02**	**EWF0R1CA**
		Dilution Factor: 1		Analysis Time..: 17:52	MDL.....: 0.49	
Magnesium	**45.8**	**0.20**	**mg/L**	**SW846 6010B**	**03/22-03/25/02**	**EWF0R1AL**
		Dilution Factor: 1		Analysis Time..: 17:52	MDL.....: 0.024	
Manganese	**1.3 B**	**10.0**	**ug/L**	**SW846 6010B**	**03/22-03/27/02**	**EWF0R1A2**
		Dilution Factor: 1		Analysis Time..: 10:59	MDL.....: 0.49	
Sodium	**50.1**	**5.0**	**mg/L**	**SW846 6010B**	**03/22-03/25/02**	**EWF0R1CC**
		Dilution Factor: 1		Analysis Time..: 17:52	MDL.....: 1.5	
Nickel	ND	40.0	ug/L	SW846 6010B	03/22-03/27/02	EWF0R1A3
		Dilution Factor: 1		Analysis Time..: 10:59	MDL.....: 4.1	
Tin	ND	100	ug/L	SW846 6010B	03/22-03/27/02	EWF0R1AH
		Dilution Factor: 1		Analysis Time..: 10:59	MDL.....: 3.4	

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-F1

TOTAL Metals

Lot-Sample #...: D2C150182-006 Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	17.8	10.0	ug/L	SW846 6010B	03/22-03/27/02	EWF0R1A4
		Dilution Factor: 1		Analysis Time..: 10:59	MDL.....: 2.2	
Zinc	15.7 B	20.0	ug/L	SW846 6010B	03/22-03/27/02	EWF0R1A5
		Dilution Factor: 1		Analysis Time..: 10:59	MDL.....: 3.3	
Molybdenum	3.0 B	20.0	ug/L	SW846 6010B	03/22-03/27/02	EWF0R1AJ
		Dilution Factor: 1		Analysis Time..: 10:59	MDL.....: 2.1	
Prep Batch #...: 2078476						
Silver	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWF0R1AC
		Dilution Factor: 1		Analysis Time..: 21:51	MDL.....: 0.012	
Arsenic	3.0 B	5.0	ug/L	SW846 6020	03/25-03/27/02	EWF0R1A7
		Dilution Factor: 1		Analysis Time..: 21:51	MDL.....: 0.061	
'admium	0.50 B	1.0	ug/L	SW846 6020	03/25-03/27/02	EWF0R1A8
		Dilution Factor: 1		Analysis Time..: 21:51	MDL.....: 0.022	
Chromium	2.4 J	1.0	ug/L	SW846 6020	03/25-03/27/02	EWF0R1AE
		Dilution Factor: 1		Analysis Time..: 21:51	MDL.....: 0.24	
Lead	0.41 B	1.0	ug/L	SW846 6020	03/25-03/27/02	EWF0R1A9
		Dilution Factor: 1		Analysis Time..: 21:51	MDL.....: 0.15	
Antimony	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWF0R1A6
		Dilution Factor: 1		Analysis Time..: 21:51	MDL.....: 0.040	
Selenium	6.6	5.0	ug/L	SW846 6020	03/25-03/27/02	EWF0R1AA
		Dilution Factor: 1		Analysis Time..: 21:51	MDL.....: 0.19	
Thallium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWF0R1AD
		Dilution Factor: 1		Analysis Time..: 21:51	MDL.....: 0.015	
Prep Batch #...: 2085309						
Mercury	ND	0.20	ug/L	SW846 7470A	04/01/02	EWF0R1AF
		Dilution Factor: 1		Analysis Time..: 22:29	MDL.....: 0.028	

NOTE(S):

B Estimated result. Result is less than RL.

' Method blank contamination. The associated method blank contains the target analyte at a reportable level.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-G

General Chemistry

Lot-Sample #...: D2C150182-001 Work Order #...: EWFVX Matrix.....: WG
Date Sampled...: 03/14/02 10:40 Date Received..: 03/15/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate	4.2	0.10	mg/L	MCAWW 353.2	03/15/02	2086228
		Dilution Factor: 1		Analysis Time..: 11:00	MDL.....: 0.010	
Nitrite	0.0023 B,J	0.010	mg/L	MCAWW 354.1	03/15/02	2074325
		Dilution Factor: 1		Analysis Time..: 13:15	MDL.....: 0.0020	
Perchlorate	ND	20.0	ug/L	EPA 314.0	04/08/02	2099259
		Dilution Factor: 1		Analysis Time..: 17:55	MDL.....: 1.5	
Sulfate	170 Q	25.0	mg/L	MCAWW 300.0A	03/26/02	2086174
		Dilution Factor: 5		Analysis Time..: 16:08	MDL.....: 3.0	
Total Dissolved Solids	624	10.0	mg/L	MCAWW 160.1	03/19/02	2078516
		Dilution Factor: 1		Analysis Time..: 16:00	MDL.....: 4.8	
Total Sulfide	ND	4.0	mg/L	SW846 9030B/9034	03/21/02	2080510
		Dilution Factor: 1		Analysis Time..: 12:00	MDL.....: 0.97	

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

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 #...: D2C150182-002 Work Order #...: EWFX5 Matrix.....: WG
Date Sampled...: 03/14/02 12:00 Date Received..: 03/15/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate	1.8	0.10	mg/L	MCAWW 353.2	03/15/02	2086228
		Dilution Factor: 1		Analysis Time..: 11:00	MDL.....: 0.010	
Nitrite	0.0027 B,J	0.010	mg/L	MCAWW 354.1	03/15/02	2074325
		Dilution Factor: 1		Analysis Time..: 13:15	MDL.....: 0.0020	
Perchlorate	ND	20.0	ug/L	EPA 314.0	04/08/02	2099259
		Dilution Factor: 1		Analysis Time..: 18:41	MDL.....: 1.5	
Sulfate	129 Q	25.0	mg/L	MCAWW 300.0A	03/26/02	2086174
		Dilution Factor: 5		Analysis Time..: 17:31	MDL.....: 3.0	
Total Dissolved Solids	478	10.0	mg/L	MCAWW 160.1	03/19/02	2078516
		Dilution Factor: 1		Analysis Time..: 16:00	MDL.....: 4.8	
Total Sulfide	ND	4.0	mg/L	SW846 9030B/9034	03/21/02	2080510
		Dilution Factor: 1		Analysis Time..: 12:00	MDL.....: 0.97	

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

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 #...: D2C150182-003 Work Order #...: EWFX9 Matrix.....: WG
Date Sampled...: 03/14/02 13:00 Date Received..: 03/15/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate	1.6	0.10	mg/L	MCAWW 353.2	03/15/02	2086228
		Dilution Factor: 1		Analysis Time..: 11:00	MDL.....: 0.010	
Nitrite	0.0023 B,J	0.010	mg/L	MCAWW 354.1	03/15/02	2074325
		Dilution Factor: 1		Analysis Time..: 13:15	MDL.....: 0.0020	
Perchlorate	ND	20.0	ug/L	EPA 314.0	04/08/02	2099259
		Dilution Factor: 1		Analysis Time..: 18:41	MDL.....: 1.5	
Sulfate	85.2 Q	25.0	mg/L	MCAWW 300.0A	03/26/02	2086174
		Dilution Factor: 5		Analysis Time..: 17:47	MDL.....: 3.0	
Total Dissolved Solids	549	10.0	mg/L	MCAWW 160.1	03/19/02	2078516
		Dilution Factor: 1		Analysis Time..: 16:00	MDL.....: 4.8	
Total Sulfide	ND	4.0	mg/L	SW846 9030B/9034	03/21/02	2080510
		Dilution Factor: 1		Analysis Time..: 12:00	MDL.....: 0.97	

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level. .

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

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-F

General Chemistry

Lot-Sample #...: D2C150182-005 **Work Order #...:** EWF0H **Matrix.....:** WG
Date Sampled...: 03/14/02 09:10 **Date Received..:** 03/15/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate	**1.2**	**0.10**	**mg/L**	**MCAWW 353.2**	**03/15/02**	**2086228**
		Dilution Factor: 1		Analysis Time..: 11:00	MDL.....: 0.010	
Nitrite	**0.0035 B,J**	**0.010**	**mg/L**	**MCAWW 354.1**	**03/15/02**	**2074325**
		Dilution Factor: 1		Analysis Time..: 13:15	MDL.....: 0.0020	
Perchlorate	ND	20.0	ug/L	EPA 314.0	04/08/02	2099259
		Dilution Factor: 1		Analysis Time..: 18:41	MDL.....: 1.5	
Sulfate	**132 Q**	**25.0**	**mg/L**	**MCAWW 300.0A**	**03/26/02**	**2086174**
		Dilution Factor: 5		Analysis Time..: 18:04	MDL.....: 3.0	
Total Dissolved Solids	**525**	**10.0**	**mg/L**	**MCAWW 160.1**	**03/19/02**	**2078516**
		Dilution Factor: 1		Analysis Time..: 16:00	MDL.....: 4.8	
Total Sulfide	ND	4.0	mg/L	SW846 9030B/9034	03/21/02	2080510
		Dilution Factor: 1		Analysis Time..: 12:00	MDL.....: 0.97	

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

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

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-F1

General Chemistry

Lot-Sample #...: D2C150182-006 Work Order #...: EWF0R Matrix.....: WG
Date Sampled...: 03/14/02 09:20 Date Received..: 03/15/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate	1.2	0.10	mg/L	MCAWW 353.2	03/15/02	2086228
		Dilution Factor: 1		Analysis Time..: 11:00	MDL.....: 0.010	
Nitrite	0.0023 B,J	0.010	mg/L	MCAWW 354.1	03/15/02	2074325
		Dilution Factor: 1		Analysis Time..: 13:15	MDL.....: 0.0020	
Perchlorate	ND	20.0	ug/L	EPA 314.0	04/08/02	2099259
		Dilution Factor: 1		Analysis Time..: 19:28	MDL.....: 1.5	
Sulfate	132 Q	25.0	mg/L	MCAWW 300.0A	03/26/02	2086174
		Dilution Factor: 5		Analysis Time..: 18:21	MDL.....: 3.0	
Total Dissolved Solids	526	10.0	mg/L	MCAWW 160.1	03/19/02	2078516
		Dilution Factor: 1		Analysis Time..: 16:00	MDL.....: 4.8	
Total Sulfide	ND	4.0	mg/L	SW846 9030B/9034	03/21/02	2080510
		Dilution Factor: 1		Analysis Time..: 12:00	MDL.....: 0.97	

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

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

QC DATA ASSOCIATION SUMMARY

D2C150182

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WG	MCAWW 160.1		2078516	2080219
	WG	MCAWW 353.2		2086228	
	WG	MCAWW 354.1		2074325	2074186
	WG	MCAWW 300.0A		2086174	2086073
	WG	SW846 6020		2078476	2078290
	WG	SW846 7470A		2085309	2085179
	WG	SW846 8082		2080152	
	WG	SW846 8081A		2080148	
	WG	SW846 8260B		2086353	2086190
	WG	SW846 6010B		2078369	2078209
	WG	SW846 9030B/9034		2080510	
	WG	EPA 314.0		2099259	2099126
002	WG	MCAWW 160.1		2078516	2080219
	WG	MCAWW 353.2		2086228	
	WG	MCAWW 354.1		2074325	2074186
	WG	MCAWW 300.0A		2086174	2086073
	WG	SW846 6020		2078476	2078290
	WG	SW846 7470A		2085309	2085179
	WG	SW846 8082		2080152	
	WG	SW846 8081A		2080148	
	WG	SW846 8260B		2086353	2086190
	WG	SW846 6010B		2078369	2078209
	WG	SW846 9030B/9034		2080510	
	WG	EPA 314.0		2099259	2099126
003	WG	MCAWW 160.1		2078516	2080219
	WG	MCAWW 353.2		2086228	
	WG	MCAWW 354.1		2074325	2074186
	WG	MCAWW 300.0A		2086174	2086073
	WG	SW846 6020		2078476	2078290
	WG	SW846 7470A		2085309	2085179
	WG	SW846 8082		2080152	
	WG	SW846 8081A		2080148	
	WG	SW846 8260B		2086353	2086190
	WG	SW846 6010B		2078369	2078209
	WG	SW846 9030B/9034		2080510	
	WG	EPA 314.0		2099259	2099126
004	WQ	SW846 8260B		2086353	2086190

(Continued on next page)

APPENDIX IV

Laboratory Quality Assurance / Quality Control Results

LABORATORY DATA VALIDATION CHECKLIST

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

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

Fredrick E. Gebhardt, USGS-WRD, Hydrologic Technician 15OCT2002

DATA INVENTORY

1.1 Sample project number: Severn Trent Services Reports # D2C130228 & # D2C140285

1.2 Operable unit and site: Landfill 5 unit, Cell 3

Sample collection date: 12MAR - 13MAR2002

1.3 Sample locations (location IDs): Wells CAFB-B, C, D, Q, S, T, and U; CAFB-D-1 was a duplicate sample for CAFB-D.

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

Data validation level: **(circle one)** note--see appendix 1 & 2 for description of different levels

GENERAL INFORMATION (Sewage Lagoons) ***(also see Appendix 3)***

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

Fredrick E. Gebhardt, USGS-WRD, Hydrologic Technician 15OCT2002

DATA INVENTORY

1.1 Sample project number: Severn Trent Services Report # D2C150182

1.2 Operable unit and site: Sewage Lagoon

Sample collection date: 14MAR2002

1.3 Sample locations (location IDs): Wells CAFB-E, CAFB-F, CAFB-G, and CAFB-H; CAFB-F1 duplicate sample for 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	4	MS/MSD	0
field duplicate	1	trip blank	1
equipment blank	0	ambient blank	0

Data validation level: **(circle one)** note--see appendix A for description of different levels

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 15OCT2002

LABORATORY DATA REPORTS

2.1 Analytical Results Report--report date: 10APR-12APR2002

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 Lagoons):

	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:	6	5	5	5	5
analyzed:	6	5	5	5	5

	TDS MCAWW160.1 160.1
requested:	5
analyzed:	5

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 temperature upon receipt by lab? Temperatures ranged from 0.5 - 5.7 °C. There was a total of 12 coolers shipped.

2.8 Additional comments:

SECTION 3.0: APPENDIX-IX, VOLATILE ORGANIC COMPOUNDS-- METHOD SW5030/SW8260B (Landfill 5 & Sewage Lagoons)

Name of reviewer(s) and review date: Fredrick E. Gebhardt 15OCT2002

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: 12-14MAR2002 analysis date limit: 26-28MAR2002

Samples were analyzed by 26MAR2002, 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 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). Re-

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]

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]

CAFB-D, 2 compounds, identified, Appendix I-13
CAFB-E, 1 compound, unknown, Appendix III-20
CAFB-G, 1 compound, identified, Appendix III-14
CAFB-Q-TB, 1 compound, unknown, Appendix I-22
CAFB-T, 1 compound, identified, Appendix II-18

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: _____

3.18 Additional comments: _____

SECTION 4.0: APPENDIX-IX SEMIVOLATILE ORGANIC COMPOUNDS-- METHOD SW3510/SW8270C (Landfill 5)

Name of reviewer(s) and review date: Fredrick E. Gebhardt 15OCT2002

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: 12-13MAR2002 extraction date limit: 19-20MAR2002
extraction date: 18-29MAR2002 analysis date limit: 20MAR-3APR2002

Samples were all initially extracted and analysis within holding times. However, CAFB-B sample was re-analysised due to Surrogate Spike Recovery results. This exceeded holding times.

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]

CAFB-B Surrogate Spike was outside stated control limits.

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]

No equipment blanks were collected.

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-70	5	Unknown
CAFB-C	II-57	5	Unknown
CAFB-D	I-27	4	Unknown, T2
CAFB-D-1	I-32	4	Unknown
CAFB-O	I-37	5	Unknown
CAFB-S	II-52	4	Unknown
CAFB-T	II-47	4	Unknown
CAFB-U	II-42	4	Unknown

* 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 (Landfill 5 & Sewage Lagoons)

Name of reviewer(s) and review date: Fredrick E. Gebhardt 15OCT2002

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: 12-14MAR2002 extraction date limit: 19-21MAR2002
extraction date: 20-21MAR2002 analysis date limit: 28-30APR2002

Samples were extracted by 21MAR and were analyzed by 22MAR2002, and met required extraction and analysis 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. Reporting limits were not raised for any of the samples.

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]

Equipment blank results were ND and met QC acceptance criteria.

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.

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 SW3520/SW8151A (Landfill 5)

Name of reviewer(s) and review date: Fredrick E. Gebhardt 15OCT2002

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: 12-13MAR2002 extraction date limit: 19-20MAR2002
extraction date: 19-20MAR2002 * analysis date limit: 28-30APR2002

All samples were extracted by 20MAR2002, * except well CAFB-B. Due to surrogate recovery being outside stated control limits, the sample was re-extracted on 26MAR. All samples were analyzed by date 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 for samples CAFB-B, did not meet QC acceptance criteria. Surrogate spike recoveries for reanalysis of this sample 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. Reporting limits were not raised for any of the samples.

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]

Equipment blanks were not collected.

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 (Landfill 5)

Name of reviewer(s) and review date: Fredrick E. Gebhardt 15OCT2002

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: 12-13MAR2002 extraction date limit: 11-12APR2002
extraction date: 19MAR2002 analysis date limit: 26-27APR2002

Samples were extracted by 19MAR2002 and were analyzed by 23-MAR2002, and met 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]

Equipment blank results were ND and met QC acceptance criteria.

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 SW3510/SW8310

Name of reviewer(s) and review date: Fredrick E. Gebhardt 15OCT2002

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: 12-13MAR2002 extraction date limit: 19-20MAR2002
extraction date: 19-20MAR2002 analysis date limit: 23-24APR2002

Samples were extracted by 19-20MAR2002 and were analyzed 3APR2002, and met 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. Reporting limits were not raised for any of the samples.

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]

Equipment blank were not collected.

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 limits.

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 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). (Landfill 5 & Sewage Lagoons)

Name of reviewer(s) and review date: Fredrick E. Gebhardt 15OCT2002

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: 12-14MAR2002 analysis date limit: 9-11APR2002

All rest sample date: 12-14MAR2002 analysis date limit: 8-10SEP2002

Mercury samples were analyzed by 1APR2002 and met required holding time limits. All rest were analyzed by 27MAR2002 and 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. Quanterra 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]

Chromium did not meet frequency and QC acceptance criteria, due to method blank contamination.

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]

Equipment blank was not collect.

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 except for chromium, due to method blank contamination.

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, except for chromium.

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]

MS/MSD results for chromium was recovered outside contro limits due to method blank contamination.

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 (Landfill 5)

Name of reviewer(s) and review date: Fredrick E. Gebhardt 15OCT2002

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: 12-13MAR2002 analysis date limit: 26-27MAR2002
Sulfide sample date: 12-13MAR2002 analysis date limit: 19-20MAR2002

Cyanide samples were analyzed by 20MAR2002 and sulfide samples were analyzed by 19MAR1999. All samples met 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. Reporting limits were not raised for any of the samples.

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]

Equipment blank was not collected.

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, but percent recovery for sulfide was slightly below control limit.

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 (Landfill 5)

Name of reviewer(s) and review date: Fredrick E. Gebhardt 15OCT2002

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: 12-13MAR2002 analysis date limit: 9-10APR2002

Samples were analyzed by 4APR2002 and met 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. Reporting limit was not raised on any of the samples.

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]

Equipment blank was not collected.

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 (Landfill 5)

Name of reviewer(s) and review date: Fredrick E. Gebhardt 15OCT2002

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: 12-13MAR2002 analysis date limit: 9-10APR2002

Samples were analyzed by 19MAR2002 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 did not meet QC acceptance criteria, due to method blank contamination.

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]

Equipment blank was not collected.

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 did not meet QC acceptance, due to method blank contamination.

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 did not meet QC acceptance due to method blank contamination.

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 (Sewage Lagoons)

Name of reviewer(s) and review date: Fredrick E. Gebhardt 15OCT2002

LEVEL I AND II -- Data Validation

HOLDING TIMES

13.1 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: 14MAR2002 analysis date limit: 11APR2002

All samples were analyzed by 26MAR2002 and met required holding times.

PROJECT REPORTING LIMIT

13.2 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

13.3 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 did meet QC acceptance criteria.

EQUIPMENT BLANKS

13.4 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]

Equipment blank was not collected.

DUPLICATE CONTROL SAMPLES (DCSs)

13.5 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

13.6 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)

13.7 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 results met QC acceptance criteria.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

13.8 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

13.9 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? **[FG-INORG, p. 36]** yes ____ no ____

Not reviewed

13.10 Additional comments: All samples had qualifier Q (reporting limit is elevated due to high analyte levels).

SECTION 14.0: NITRATE AND NITRITE--METHOD MCAWW353.2/354.1 (Sewage Lagoons)

Name of reviewer(s) and review date: Fredrick E. Gebhardt 15OCT2002

LEVEL I AND II -- Data Validation

HOLDING TIMES

14.1 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: 14MAR2002 analysis date limit: 16MAR2002
Nitrate sample date: 14MAR2002 analysis date limit: 11MAR2002

Nitrite and Nitrate samples were analyzed by 15MAR2002.
All samples met required holding times.

PROJECT REPORTING LIMIT

14.2 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

14.3 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

14.4 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]

Equipment blank was not collected.

DUPLICATE CONTROL SAMPLES (DCSs)

14.5 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

14.6 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 did not meet QC acceptance criteria, due to method blank contamination.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE (MS/MSD)

14.7 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 did meet QC acceptance criteria.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

14.8 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

14.9 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? **[FG-INORG, p. 36]** yes ____ no ____

Not reviewed

14.10 Additional comments: None.

SECTION 15.0: SULFIDE--METHOD SW9030B/9034 (Sewage Logoons)

Name of reviewer(s) and review date: Fredrick E. Gebhardt 15OCT2002

LEVEL I AND II -- Data Validation

HOLDING TIMES

15.1 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: 14MAR2002 analysis date limit: 21MAR2002

All samples were analyzed by 21MAR2002 and met required holding times.

PROJECT REPORTING LIMIT

15.2 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.

15.3 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 did meet QC acceptance criteria.

EQUIPMENT BLANKS

15.4 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]

Equipment blank was not collected.

DUPLICATE CONTROL SAMPLES (DCSs)

15.5 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

15.6 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.

15.7 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 did meet QC acceptance criteria.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

15.8 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

15.9 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? **[FG-INORG, p. 36]** yes ____ no ____

Not reviewed

15.10 Additional comments: None.

SECTION 16.0: TOTAL DISSOLVED SOLIDS (TDS)-- METHOD MCAWW160.1 (Sewage Lagoons)

Name of reviewer(s) and review date: Fredrick E. Gebhardt 15OCT2002

LEVEL I AND II -- Data Validation

HOLDING TIMES

16.1 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: 14MAR2002 analysis date limit: 21MAR2002

Samples were analyzed by 19MAR2002 and met required holding times.

PROJECT REPORTING LIMIT (PRL)

16.2 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

16.3 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 did meet QC acceptance criteria.

EQUIPMENT BLANKS

16.4 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]

Equipment blank was not collected.

DUPLICATE CONTROL SAMPLES (DCSs)

16.5 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

16.6 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)

16.7 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 meet QC acceptance criteria.

LEVEL II -- Data Validation

INSTRUMENT CALIBRATION

16.8 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

16.9 No omissions, problems, discrepancies, transcription errors, or reduction (dilution, conversion) errors in selected raw data? **[FG-INORG, p. 36]** yes ____ no ____

Not reviewed.

16.10 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: D2C130228

Data reviewer: Richard Daddow Review date: 4/17/02

District, Project, & Account #: New Mexico Cannon AFB 4635-36604

Sample collection date: 3/12/02 Sample matrix/no.: water

No. of sample types in lot: Environmental 3 Trip blank 1 Equip. blank ____

MS/MSD 2 Other: ____

2.0 INVOICE STATUS FOR LOT: Corrections Needed Invoice copy attached X

3.0 DATA REPORTS and FILES

Date of Lab analytical report: 4/10/02 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 ____ 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 ____ No X

If **no**, list sample/lab IDs, and associated problems with when delivered at laboratory:

One of the three VOA vials for sample CAFB-D (-001) was received broken at lab. (p.2) - There was enough sample volume to proceed w/ requested analyses.

Revision 1.5

Laboratory Lot No: D2C130228

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: D2C130228

5.0 QUALITY CONTROL (QC) ANALYSES and RESULTS

5.1 Did lab control samples (LCS/LSCD) meet percent recoveries (%R) criteria? Yes X 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:

6020 Cr <RL (p. 118)

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, 8280A, 8310, 6020, 7470A	associated MS lot # yes X no ___
~~6010B~~ 6010B Ca MSD (p. 121)	associated MS lot # yes X no ___
6010B Na, V, Mo (MSD), Mg MSD (p. 121) (p. 122);	associated MS lot # yes X no ___
	associated MS lot # yes ___ no ___
9012A (CN), 314, 9020B	associated MS lot # yes X no ___

No MS results reported for method(s): ___

5.4 Additional comments about QC results:

9060 (TOC) MS/MSD p. 132; 9030B Sulfide MSD (p. 132) yes X

Laboratory Lot No: D2C130228

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]*

X Herbicides by GC--method 8151A – app IX *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

X SVOCs by GC/MS--method 8270C – App IX *[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 App. IX *[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: 314 perchlorate 9030 Sulfide

Revision 1.5

COPY FOR YOUR INFORMATION

CONTRACT LABORATORY DATA-REVIEW WORKSHEET

1.0 GENERAL INFORMATION Laboratory Lot Number: D2C140285

Data reviewer: Richard Daddow Review date: 4/17/02

District, Project, & Account #: New Mexico Cannon AFB 4635-36004

Sample collection date: 3/13/02 Sample matrix/no.: water

No. of sample types in lot: Environmental 5 Trip blank 1 Equip. blank ____

MS/MSD ____ Other: ____

2.0 INVOICE STATUS FOR LOT: Corrections Needed Invoice copy attached X

3.0 DATA REPORTS and FILES

Date of Lab analytical report: 4/12/02 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: D2C140285

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-B (-001) re-extracted outside of prep. holding time due to surrogate-recovery problems (p. 2) for methods 8270C and ~~8C~~ 8151A. (p. 32 and 69)

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:

~~8270~~ 8270C 5 surrogates samples: CAFB-B (-001) (p. 2, 31)
8270C 1 surrogate sample: CAFB-U (-002) (p. 41)
8151A 1 surrogate sample: CAFB-B (p. 68) and (p. 2)

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: D2C140285

5.0 QUALITY CONTROL (QC) ANALYSES and RESULTS

5.1 Did lab control samples (LCS/LSCD) meet percent recoveries (%R) criteria? Yes X 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:

6020 Cr <Rhe (p. 160)
9060 (TOC) <Rhe (p. 173)

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~~ 8280A, ~~6020~~ 6020, 7470A associated MS lot # yes___ no X
6010B Ca, Mg, Na, U, Zn (MSD) associated MS lot # yes___ no X
p. 163-164 associated MS lot # yes___ no X
9012A (CN); 9060 (TOC) associated MS lot # yes X no___
314, 9020B (TOX), 9030B MSD (p. 176) associated MS lot # yes___ no X
associated MS lot # yes___ no___

No MS results reported for method(s): 8270C, 8081A, 8082, 8151A, 8310

5.4 Additional comments about QC results:

Laboratory Lot No: D2C140285

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 } App. IX *[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 } App. IX *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

X SVOCs by GC/MS--method 8270C } App. IX *[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 App. IX *[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: 9030 Sulfide 314 perchlorate

Revision 1.5

COPY FOR YOUR INFORMATION

CONTRACT LABORATORY DATA-REVIEW WORKSHEET

1.0 GENERAL INFORMATION Laboratory Lot Number: D2C150182

Data reviewer: Richard Daddow Review date: 4/17/02

District, Project, & Account #: New Mexico Cannon AFB 4635-36004

Sample collection date: 3/14/02 Sample matrix/no.: water

No. of sample types in lot: Environmental 5 Trip blank 1 Equip. blank ____

MS/MSD ____ Other: ____

2.0 INVOICE STATUS FOR LOT: OK Invoice copy attached ____

3.0 DATA REPORTS and FILES

Date of Lab analytical report: 4/11/02 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 ___ Electronic data files on CD? Yes ___ 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 X No ___

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 ___ No X

If **no**, list sample/lab IDs, and associated problems with when delivered at laboratory:

Labelling problems of sample bottles for method 314 analysis - see case narrative p.2

Revision 1.5

Laboratory Lot No: D2C150182

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-G (-001); CAFB-H (-002); CAFB-E (-003); CAFB-F (-005); CAFB-F1 (-006) (p. 50-54)

4.8 Additional comments about sample analyses: ____

Revision 1.5

Laboratory Lot No: D2C150182

5.0 QUALITY CONTROL (QC) ANALYSES and RESULTS

5.1 Did lab control samples (LCS/LSCD) meet percent recoveries (%R) criteria? Yes X 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:

6010B Be <RL (p. 76); 6020 Cr <RL (p. 77)
354.1 (Nitrite) <RL (p. 91)

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, 6020, 7470A	associated MS lot # yes___	no X
6010B Al, Fe (MS/MSD) p. 80	associated MS lot # yes___	no X
354.1 (Nitrite) (MS/MSD) p. 93	associated MS lot # yes___	no X
314, 300 (SO4) MS/MSD (p. 95)	associated MS lot # yes X	no___
	associated MS lot # yes___	no___
	associated MS lot # yes___	no___

No MS results reported for method(s): 8081A, 8082, 9030B, 353.2 (nitrate)

5.4 Additional comments about QC results:

Laboratory Lot No: D2C150182

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 } App. IX *[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]*

____ 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]*

____ 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]*

____ Cyanide, total and amenable--methods 9010B or 9012A *[W and S: analysis HT 14 days]*

X Other analyses: 314 perchlorate, 9030B Sulfide

Revision 1.5

QC DATA ASSOCIATION SUMMARY

D2C130228

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WG	SW846 9060		2093358	2093177
	WG	SW846 6020		2078476	2078290
	WG	SW846 9020B		2080258	2080099
	WG	SW846 7470A		2085309	2085179
	WG	SW846 8082		2078249	2078113
	WG	SW846 8081A		2078238	2078111
	WG	SW846 8260B		2083130	2083021
	WG	SW846 8270C		2077377	2077181
	WG	SW846 6010B		2078272	2078141
	WG	SW846 9012A		2077516	2077251
	WG	SW846 8151A		2078479	2078291
	WG	SW846 8280A		2078358	2078203
	WG	SW846 8310		2078234	2078116
	WG	SW846 9030B/9034		2080204	2080068
	WG	EPA 314.0		2077520	2077255
002	WG	SW846 9060		2093358	2093177
	WG	SW846 6020		2078476	2078290
	WG	SW846 9020B		2080258	2080099
	WG	SW846 7470A		2085309	2085179
	WG	SW846 8082		2078249	2078113
	WG	SW846 8081A		2078238	2078111
	WG	SW846 8260B		2083130	2083021
	WG	SW846 8270C		2077377	2077181
	WG	SW846 6010B		2078272	2078141
	WG	SW846 9012A		2077516	2077251
	WG	SW846 8151A		2078479	2078291
	WG	SW846 8280A		2078358	2078203
	WG	SW846 8310		2078234	2078116
	WG	SW846 9030B/9034		2080204	2080068
	WG	EPA 314.0		2077520	2077255
003	WG	SW846 9060		2093358	2093177
	WG	SW846 6020		2078476	2078290
	WG	SW846 9020B		2080258	2080099
	WG	SW846 7470A		2085309	2085179
	WG	SW846 8082		2078249	2078113
	WG	SW846 8081A		2078238	2078111
	WG	SW846 8260B		2083130	2083021
	WG	SW846 8270C		2077377	2077181
	WG	SW846 6010B		2078272	2078141
	WG	SW846 9012A		2077516	2077251
	WG	SW846 8151A		2078479	2078291

(Continued on next page)

QC DATA ASSOCIATION SUMMARY

D2C130228

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
003	WG	SW846 8280A		2078358	2078203
	WG	SW846 8310		2078234	2078116
	WG	SW846 9030B/9034		2080204	2080068
	WG	EPA 314.0		2077520	2077255
004	WQ	SW846 8260B		2083130	2083021

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D2C130228 **Work Order #...:** EWV7P1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C240000-130 EWV7P1AD-LCSD
Prep Date.....: 03/22/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2083130 **Analysis Time..:** 10:50
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	106	(79 - 119)			SW846 8260B
	104	(79 - 119)	1.5	(0-20)	SW846 8260B
Benzene	98	(79 - 119)			SW846 8260B
	100	(79 - 119)	1.5	(0-20)	SW846 8260B
Chlorobenzene	99	(76 - 116)			SW846 8260B
	99	(76 - 116)	0.30	(0-20)	SW846 8260B
Toluene	96	(75 - 122)			SW846 8260B
	97	(75 - 122)	1.6	(0-20)	SW846 8260B
Trichloroethene	99	(81 - 121)			SW846 8260B
	98	(81 - 121)	0.94	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(80 - 120)
	96	(80 - 120)
1,2-Dichloroethane-d4	89	(72 - 127)
	89	(72 - 127)
4-Bromofluorobenzene	98	(79 - 119)
	96	(79 - 119)
Toluene-d8	99	(79 - 119)
	98	(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 #...: D2C130228 **Work Order #...:** EWV7P1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C240000-130 EWV7P1AD-LCSD
Prep Date.....: 03/22/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2083130 **Analysis Time..:** 10:50
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethene	**10.0**	**10.6**	**ug/L**	**106**		**SW846 8260B**
	10.0	**10.4**	**ug/L**	**104**	**1.5**	**SW846 8260B**
Benzene	**10.0**	**9.81**	**ug/L**	**98**		**SW846 8260B**
	10.0	**9.96**	**ug/L**	**100**	**1.5**	**SW846 8260B**
Chlorobenzene	**10.0**	**9.86**	**ug/L**	**99**		**SW846 8260B**
	10.0	**9.89**	**ug/L**	**99**	**0.30**	**SW846 8260B**
Toluene	**10.0**	**9.57**	**ug/L**	**96**		**SW846 8260B**
	10.0	**9.72**	**ug/L**	**97**	**1.6**	**SW846 8260B**
Trichloroethene	**10.0**	**9.90**	**ug/L**	**99**		**SW846 8260B**
	10.0	**9.81**	**ug/L**	**98**	**0.94**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(80 - 120)
	96	(80 - 120)
1,2-Dichloroethane-d4	89	(72 - 127)
	89	(72 - 127)
4-Bromofluorobenzene	98	(79 - 119)
	96	(79 - 119)
Toluene-d8	99	(79 - 119)
	98	(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 #...: D2C130228 **Work Order #...:** EWV7P1AA **Matrix.....:** WATER
MB Lot-Sample #: D2C240000-130

Prep Date.....: 03/22/02 **Analysis Time..:** 11:40

Analysis Date..: 03/22/02 **Prep Batch #...:** 2083130
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	10	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
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
Ethyl methacrylate	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

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: D2C130228 **Work Order #...:** EWV7P1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Propionitrile	ND	4.0	ug/L	SW846 8260B
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
-Butanone (MEK)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(80 - 120)
1,2-Dichloroethane-d4	89	(72 - 127)
4-Bromofluorobenzene	97	(79 - 119)
Toluene-d8	100	(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 #: D2C240000-130 B **Work Order #:** EWV7P1AA **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 #...: D2C130228 **Work Order #...:** EWCEN1GT-MS **Matrix.....:** WG
MS Lot-Sample #: D2C130228-001 EWCEN1GU-MSD
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02
Prep Date.....: 03/22/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2083130 **Analysis Time..:** 13:18
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	**103**	**(79 - 119)**			**SW846 8260B**
	100	**(79 - 119)**	**2.0**	**(0-20)**	**SW846 8260B**
Benzene	**95**	**(79 - 119)**			**SW846 8260B**
	102	**(79 - 119)**	**7.0**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**102**	**(76 - 116)**			**SW846 8260B**
	104	**(76 - 116)**	**2.0**	**(0-20)**	**SW846 8260B**
Toluene	**100**	**(75 - 122)**			**SW846 8260B**
	103	**(75 - 122)**	**2.4**	**(0-20)**	**SW846 8260B**
Trichloroethene	**95**	**(81 - 121)**			**SW846 8260B**
	98	**(81 - 121)**	**2.4**	**(0-20)**	**SW846 8260B**

URROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	94	(80 - 120)
	97	(80 - 120)
1,2-Dichloroethane-d4	83	(72 - 127)
	91	(72 - 127)
4-Bromofluorobenzene	96	(79 - 119)
	98	(79 - 119)
Toluene-d8	100	(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 #...: D2C130228 **Work Order #...:** EWCEN1GT-MS **Matrix.....:** WG
MS Lot-Sample #: D2C130228-001 EWCEN1GU-MSD
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02
Prep Date.....: 03/22/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2083130 **Analysis Time..:** 13:18
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1-Dichloroethene	**ND**	**10.0**	**10.3**	**ug/L**	**103**		**SW846 8260B**
	ND	**10.0**	**10.0**	**ug/L**	**100**	**2.0**	**SW846 8260B**
Benzene	**ND**	**10.0**	**9.55**	**ug/L**	**95**		**SW846 8260B**
	ND	**10.0**	**10.2**	**ug/L**	**102**	**7.0**	**SW846 8260B**
Chlorobenzene	**ND**	**10.0**	**10.2**	**ug/L**	**102**		**SW846 8260B**
	ND	**10.0**	**10.4**	**ug/L**	**104**	**2.0**	**SW846 8260B**
Toluene	**ND**	**10.0**	**10.0**	**ug/L**	**100**		**SW846 8260B**
	ND	**10.0**	**10.3**	**ug/L**	**103**	**2.4**	**SW846 8260B**
Trichloroethene	**0.83**	**10.0**	**10.4**	**ug/L**	**95**		**SW846 8260B**
	0.83	**10.0**	**10.6**	**ug/L**	**98**	**2.4**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	94	(80 - 120)
	97	(80 - 120)
1,2-Dichloroethane-d4	83	(72 - 127)
	91	(72 - 127)
4-Bromofluorobenzene	96	(79 - 119)
	98	(79 - 119)
Toluene-d8	100	(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 #...: D2C130228 Work Order #...: EWJLT1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: D2C180000-377 EWJLT1AD-LCSD
Prep Date.....: 03/18/02 Analysis Date..: 03/26/02
Prep Batch #...: 2077377 Analysis Time..: 10:37
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Acenaphthene	69	(52 - 93)			SW846 8270C
	77	(52 - 93)	12	(0-28)	SW846 8270C
4-Chloro-3-methylphenol	72	(55 - 95)			SW846 8270C
	81	(55 - 95)	12	(0-34)	SW846 8270C
2-Chlorophenol	68	(52 - 92)			SW846 8270C
	80	(52 - 92)	16	(0-33)	SW846 8270C
1,4-Dichlorobenzene	56	(38 - 87)			SW846 8270C
	71	(38 - 87)	23	(0-37)	SW846 8270C
2,4-Dinitrotoluene	72	(56 - 107)			SW846 8270C
	80	(56 - 107)	9.4	(0-30)	SW846 8270C
4-Nitrophenol	61	(41 - 108)			SW846 8270C
	71	(41 - 108)	15	(0-40)	SW846 8270C
N-Nitrosodi-n-propyl-amine	70	(48 - 88)			SW846 8270C
	80	(48 - 88)	15	(0-33)	SW846 8270C
Pentachlorophenol	66	(42 - 105)			SW846 8270C
	70	(42 - 105)	5.4	(0-34)	SW846 8270C
Phenol	69	(50 - 90)			SW846 8270C
	80	(50 - 90)	16	(0-31)	SW846 8270C
Pyrene	69	(54 - 104)			SW846 8270C
	81	(54 - 104)	16	(0-31)	SW846 8270C
1,2,4-Trichloro-benzene	61	(43 - 88)			SW846 8270C
	73	(43 - 88)	18	(0-35)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	68	(51 - 99)
	78	(51 - 99)
Phenol-d5	69	(52 - 99)
	78	(52 - 99)
Nitrobenzene-d5	71	(57 - 97)
	82	(57 - 97)
2-Fluorobiphenyl	66	(49 - 98)
	74	(49 - 98)
2,4,6-Tribromophenol	70	(53 - 108)
	78	(53 - 108)
Terphenyl-d14	72	(38 - 119)

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: D2C130228 **Work Order #...:** EWJLT1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C180000-377 EWJLT1AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
	83	(38 - 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 Semivolatiles

Client Lot #...: D2C130228 **Work Order #...:** EWJLT1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C180000-377 EWJLT1AD-LCSD
Prep Date.....: 03/18/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2077377 **Analysis Time..:** 10:37
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Acenaphthene	100	69.1	ug/L	69		SW846 8270C
	100	77.5	ug/L	77	12	SW846 8270C
4-Chloro-3-methylphenol	150	109	ug/L	72		SW846 8270C
	150	122	ug/L	81	12	SW846 8270C
2-Chlorophenol	150	102	ug/L	68		SW846 8270C
	150	120	ug/L	80	16	SW846 8270C
1,4-Dichlorobenzene	100	56.3	ug/L	56		SW846 8270C
	100	70.6	ug/L	71	23	SW846 8270C
2,4-Dinitrotoluene	100	72.4	ug/L	72		SW846 8270C
	100	79.6	ug/L	80	9.4	SW846 8270C
4-Nitrophenol	150	91.3	ug/L	61		SW846 8270C
	150	106	ug/L	71	15	SW846 8270C
N-Nitrosodi-n-propyl-amine	100	69.5	ug/L	70		SW846 8270C
	100	80.5	ug/L	80	15	SW846 8270C
Pentachlorophenol	150	99.4	ug/L	66		SW846 8270C
	150	105	ug/L	70	5.4	SW846 8270C
Phenol	150	103	ug/L	69		SW846 8270C
	150	120	ug/L	80	16	SW846 8270C
Pyrene	100	68.6	ug/L	69		SW846 8270C
	100	80.6	ug/L	81	16	SW846 8270C
1,2,4-Trichloro-benzene	100	60.9	ug/L	61		SW846 8270C
	100	73.2	ug/L	73	18	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	68	(51 - 99)
	78	(51 - 99)
Phenol-d5	69	(52 - 99)
	78	(52 - 99)
Nitrobenzene-d5	71	(57 - 97)
	82	(57 - 97)
2-Fluorobiphenyl	66	(49 - 98)
	74	(49 - 98)
2,4,6-Tribromophenol	70	(53 - 108)
	78	(53 - 108)
Terphenyl-d14	72	(38 - 119)

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: D2C130228 **Work Order #...:** EWJLT1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C180000-377 EWJLT1AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
	83	(38 - 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 Semivolatiles

Client Lot #...: D2C130228 **Work Order #...:** EWJLT1AA **Matrix.....:** WATER
MB Lot-Sample #: D2C180000-377

Prep Date.....: 03/18/02 **Analysis Time..:** 10:10
Analysis Date..: 03/26/02 **Prep Batch #...:** 2077377
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
2,4-Dinitrotoluene	ND	10	ug/L	SW846 8270C
2,6-Dinitrotoluene	ND	10	ug/L	SW846 8270C
Nitrobenzene	ND	10	ug/L	SW846 8270C
Acenaphthene	ND	10	ug/L	SW846 8270C
Acenaphthylene	ND	10	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
Anthracene	ND	10	ug/L	SW846 8270C
Benzo(a)anthracene	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(ghi)perylene	ND	10	ug/L	SW846 8270C
Benzo(a)pyrene	ND	10	ug/L	SW846 8270C
Benzyl alcohol	ND	10	ug/L	SW846 8270C
bis(2-Chloroethoxy) methane	ND	10	ug/L	SW846 8270C
bis(2-Chloroethyl)- ether	ND	10	ug/L	SW846 8270C
2,2'-oxybis(1-Chloropropa	ND	10	ug/L	SW846 8270C
bis(2-Ethylhexyl) phthalate	ND	10	ug/L	SW846 8270C
4-Bromophenyl phenyl ether	ND	10	ug/L	SW846 8270C
Butyl benzyl phthalate	ND	10	ug/L	SW846 8270C
4-Chloroaniline	ND	10	ug/L	SW846 8270C
4-Chloro-3-methylphenol	ND	10	ug/L	SW846 8270C
2-Chloronaphthalene	ND	10	ug/L	SW846 8270C
2-Chlorophenol	ND	10	ug/L	SW846 8270C
4-Chlorophenyl phenyl ether	ND	10	ug/L	SW846 8270C
Chrysene	ND	10	ug/L	SW846 8270C
Dibenz(a,h)anthracene	ND	10	ug/L	SW846 8270C
Dibenzofuran	ND	10	ug/L	SW846 8270C
Di-n-butyl phthalate	ND	10	ug/L	SW846 8270C
1,2-Dichlorobenzene	ND	10	ug/L	SW846 8270C
1,3-Dichlorobenzene	ND	10	ug/L	SW846 8270C
1,4-Dichlorobenzene	ND	10	ug/L	SW846 8270C
,3'-Dichlorobenzidine	ND	50	ug/L	SW846 8270C
2,4-Dichlorophenol	ND	10	ug/L	SW846 8270C

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D2C130228 **Work Order #...:** EWJLT1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
2,6-Dichlorophenol	ND	10	ug/L	SW846 8270C
Diethyl phthalate	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
3,3'-Dimethylbenzidine	ND	20	ug/L	SW846 8270C
alpha,alpha-Dimethylphene	ND	50	ug/L	SW846 8270C
2,4-Dimethylphenol	ND	10	ug/L	SW846 8270C
Dimethyl phthalate	ND	10	ug/L	SW846 8270C
Di-n-octyl phthalate	ND	10	ug/L	SW846 8270C
1,3-Dinitrobenzene	ND	10	ug/L	SW846 8270C
4,6-Dinitro-2-methylphenol	ND	50	ug/L	SW846 8270C
2,4-Dinitrophenol	ND	50	ug/L	SW846 8270C
Diphenylamine	ND	10	ug/L	SW846 8270C
Ethyl methanesulfonate	ND	10	ug/L	SW846 8270C
Fluoranthene	ND	10	ug/L	SW846 8270C
Fluorene	ND	10	ug/L	SW846 8270C
Hexachlorobenzene	ND	10	ug/L	SW846 8270C
Hexachlorobutadiene	ND	10	ug/L	SW846 8270C
Hexachlorocyclopenta-diene	ND	50	ug/L	SW846 8270C
Hexachloroethane	ND	10	ug/L	SW846 8270C
Hexachloropropene	ND	100	ug/L	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	SW846 8270C
Isophorone	ND	10	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
2-Methylnaphthalene	ND	10	ug/L	SW846 8270C
2-Methylphenol	ND	10	ug/L	SW846 8270C
3-Methylphenol	ND	10	ug/L	SW846 8270C
4-Methylphenol	ND	10	ug/L	SW846 8270C
Naphthalene	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
2-Nitroaniline	ND	50	ug/L	SW846 8270C
3-Nitroaniline	ND	50	ug/L	SW846 8270C
4-Nitroaniline	ND	50	ug/L	SW846 8270C
2-Nitrophenol	ND	10	ug/L	SW846 8270C
4-Nitrophenol	ND	50	ug/L	SW846 8270C
N-Nitrosodi-n-butylamine	ND	10	ug/L	SW846 8270C
N-Nitrosodiethylamine	ND	10	ug/L	SW846 8270C

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D2C130228 **Work Order #...:** EWJLT1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
N-Nitrosodimethylamine	ND	10	ug/L	SW846 8270C
N-Nitrosodi-n-propyl-amine	ND	10	ug/L	SW846 8270C
N-Nitrosodiphenylamine	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
Pentachlorophenol	ND	50	ug/L	SW846 8270C
Phenacetin	ND	20	ug/L	SW846 8270C
Phenanthrene	ND	10	ug/L	SW846 8270C
Phenol	ND	10	ug/L	SW846 8270C
2-Picoline	ND	20	ug/L	SW846 8270C
'ronamide	ND	20	ug/L	SW846 8270C
Pyrene	ND	10	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
1,2,4-Trichloro-benzene	ND	10	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
1,3,5-Trinitrobenzene	ND	50	ug/L	SW846 8270C
Aramite	ND	20	ug/L	SW846 8270C
2-sec-Butyl-4,6-dinitro-phenol	ND	20	ug/L	SW846 8270C
2-Toluidine	ND	10	ug/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	77	(51 - 99)
Phenol-d5	78	(52 - 99)
Nitrobenzene-d5	81	(57 - 97)
2-Fluorobiphenyl	72	(49 - 98)
?,4,6-Tribromophenol	72	(53 - 108)
.erphenyl-d14	78	(38 - 119)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D2C130228 Work Order #...: EWJLT1AA 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 #: D2C180000-377 B **Work Order #:** EWJLT1AA **Matrix:** WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		0.019 J	M	2.2326	mg/L
Unknown		0.013 J	M	2.3921	mg/L
Unknown		0.014 J	M	3.408	mg/L
Unknown		0.011 J	M	3.5782	mg/L
Unknown		0.0081 J	M	3.6154	mg/L
Unknown		0.017 J	M	3.8388	mg/L
1-Propene, 1,2,3-trichloro-	96-19-5	0.0090 J	M	4.7058	mg/L
Hexachlorodibenzo-p-dioxin		ND	M		mg/L
Hexachlorodibenzofurans		ND	M		mg/L
Pentachlorodibenzo-p-dioxin		ND	M		mg/L
Pentachlorodibenzofurans		ND	M		mg/L
Tetrachlorodibenzo-p-dioxin		ND	M		mg/L
Tetrachlorodibenzofurans		ND	M		mg/L

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: D2C130228 Work Order #...: EWCEN1C9-MS Matrix.....: WG
MS Lot-Sample #: D2C130228-001 EWCEN1DA-MSD
Date Sampled...: 03/12/02 13:15 Date Received..: 03/13/02
Prep Date.....: 03/18/02 Analysis Date..: 03/26/02
Prep Batch #...: 2077377 Analysis Time..: 15:23
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Acenaphthene	73	(52 - 93)			SW846 8270C
	77	(52 - 93)	5.2	(0-28)	SW846 8270C
4-Chloro-3-methylphenol	76	(55 - 95)			SW846 8270C
	80	(55 - 95)	5.4	(0-34)	SW846 8270C
2-Chlorophenol	74	(52 - 92)			SW846 8270C
	75	(52 - 92)	1.8	(0-33)	SW846 8270C
1,4-Dichlorobenzene	67	(38 - 87)			SW846 8270C
	68	(38 - 87)	1.0	(0-37)	SW846 8270C
2,4-Dinitrotoluene	76	(56 - 107)			SW846 8270C
	83	(56 - 107)	9.3	(0-30)	SW846 8270C
4-Nitrophenol	66	(41 - 108)			SW846 8270C
	76	(41 - 108)	14	(0-40)	SW846 8270C
N-Nitrosodi-n-propyl-amine	75	(48 - 88)			SW846 8270C
	80	(48 - 88)	6.2	(0-33)	SW846 8270C
Pentachlorophenol	68	(42 - 105)			SW846 8270C
	71	(42 - 105)	3.7	(0-34)	SW846 8270C
Phenol	75	(50 - 90)			SW846 8270C
	77	(50 - 90)	2.5	(0-31)	SW846 8270C
Pyrene	68	(54 - 104)			SW846 8270C
	71	(54 - 104)	3.1	(0-31)	SW846 8270C
1,2,4-Trichloro-benzene	69	(43 - 88)			SW846 8270C
	71	(43 - 88)	2.6	(0-35)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	73	(51 - 99)
	74	(51 - 99)
Phenol-d5	74	(52 - 99)
	76	(52 - 99)
Nitrobenzene-d5	77	(57 - 97)
	80	(57 - 97)
2-Fluorobiphenyl	69	(49 - 98)
	74	(49 - 98)
2,4,6-Tribromophenol	74	(53 - 108)
	80	(53 - 108)

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: D2C130228 **Work Order #...:** EWCEN1C9-MS **Matrix.....:** WG
MS Lot-Sample #: D2C130228-001 EWCEN1DA-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	71	(38 - 119)
	74	(38 - 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 Semivolatiles

Client Lot #...: D2C130228 **Work Order #...:** EWCEN1C9-MS **Matrix.....:** WG
MS Lot-Sample #: D2C130228-001 EWCEN1DA-MSD
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02
Prep Date.....: 03/18/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2077377 **Analysis Time..:** 15:23
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Acenaphthene	ND	96.5	70.0	ug/L	73		SW846 8270C
	ND	96.3	73.7	ug/L	77	5.2	SW846 8270C
4-Chloro-3-methylphenol	ND	145	110	ug/L	76		SW846 8270C
	ND	145	116	ug/L	80	5.4	SW846 8270C
2-Chlorophenol	ND	145	107	ug/L	74		SW846 8270C
	ND	145	109	ug/L	75	1.8	SW846 8270C
1,4-Dichlorobenzene	ND	96.5	64.6	ug/L	67		SW846 8270C
	ND	96.3	65.2	ug/L	68	1.0	SW846 8270C
2,4-Dinitrotoluene	ND	96.5	73.3	ug/L	76		SW846 8270C
	ND	96.3	80.4	ug/L	83	9.3	SW846 8270C
4-Nitrophenol	ND	145	95.7	ug/L	66		SW846 8270C
	ND	145	110	ug/L	76	14	SW846 8270C
N-Nitrosodi-n-propyl-amine	ND	96.5	72.5	ug/L	75		SW846 8270C
	ND	96.3	77.1	ug/L	80	6.2	SW846 8270C
Pentachlorophenol	ND	145	99.1	ug/L	68		SW846 8270C
	ND	145	103	ug/L	71	3.7	SW846 8270C
Phenol	ND	145	108	ug/L	75		SW846 8270C
	ND	145	111	ug/L	77	2.5	SW846 8270C
Pyrene	ND	96.5	66.0	ug/L	68		SW846 8270C
	ND	96.3	68.1	ug/L	71	3.1	SW846 8270C
1,2,4-Trichloro-benzene	ND	96.5	66.5	ug/L	69		SW846 8270C
	ND	96.3	68.2	ug/L	71	2.6	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	73	(51 - 99)
	74	(51 - 99)
Phenol-d5	74	(52 - 99)
	76	(52 - 99)
Nitrobenzene-d5	77	(57 - 97)
	80	(57 - 97)
2-Fluorobiphenyl	69	(49 - 98)
	74	(49 - 98)
2,4,6-Tribromophenol	74	(53 - 108)
	80	(53 - 108)

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: D2C130228 **Work Order #...:** EWCEN1C9-MS **Matrix.....:** WG
MS Lot-Sample #: D2C130228-001 EWCEN1DA-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	71	(38 - 119)
	74	(38 - 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 #...: D2C130228 **Work Order #...:** EWKQA1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C190000-238 EWKQA1AD-LCSD
Prep Date.....: 03/19/02 **Analysis Date..:** 03/20/02
Prep Batch #...: 2078238 **Analysis Time..:** 19:55
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
4,4'-DDT	**98**	**(68 - 147)**			**SW846 8081A**
	95	**(68 - 147)**	**3.4**	**(0-30)**	**SW846 8081A**
Aldrin	**90**	**(55 - 137)**			**SW846 8081A**
	86	**(55 - 137)**	**5.2**	**(0-30)**	**SW846 8081A**
Dieldrin	**99**	**(68 - 146)**			**SW846 8081A**
	94	**(68 - 146)**	**4.8**	**(0-30)**	**SW846 8081A**
Endrin	**91**	**(66 - 143)**			**SW846 8081A**
	89	**(66 - 143)**	**2.1**	**(0-30)**	**SW846 8081A**
gamma-BHC (Lindane)	**102**	**(68 - 142)**			**SW846 8081A**
	98	**(68 - 142)**	**4.1**	**(0-30)**	**SW846 8081A**
Heptachlor	**94**	**(59 - 143)**			**SW846 8081A**
	91	**(59 - 143)**	**4.1**	**(0-30)**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	111	(15 - 162)
	109	(15 - 162)
Tetrachloro-m-xylene	95	(49 - 133)
	95	(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 #...: D2C130228 **Work Order #...:** EWKQA1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C190000-238 EWKQA1AD-LCSD
Prep Date.....: 03/19/02 **Analysis Date..:** 03/20/02
Prep Batch #...: 2078238 **Analysis Time..:** 19:55
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
4,4'-DDT	**0.500**	**0.492**	**ug/L**	**98**		**SW846 8081A**
	0.500	**0.476**	**ug/L**	**95**	**3.4**	**SW846 8081A**
Aldrin	**0.500**	**0.451**	**ug/L**	**90**		**SW846 8081A**
	0.500	**0.428**	**ug/L**	**86**	**5.2**	**SW846 8081A**
Dieldrin	**0.500**	**0.496**	**ug/L**	**99**		**SW846 8081A**
	0.500	**0.472**	**ug/L**	**94**	**4.8**	**SW846 8081A**
Endrin	**0.500**	**0.453**	**ug/L**	**91**		**SW846 8081A**
	0.500	**0.444**	**ug/L**	**89**	**2.1**	**SW846 8081A**
gamma-BHC (Lindane)	**0.500**	**0.513**	**ug/L**	**102**		**SW846 8081A**
	0.500	**0.492**	**ug/L**	**98**	**4.1**	**SW846 8081A**
Heptachlor	**0.500**	**0.472**	**ug/L**	**94**		**SW846 8081A**
	0.500	**0.453**	**ug/L**	**91**	**4.1**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	111	(15 - 162)
	109	(15 - 162)
Tetrachloro-m-xylene	95	(49 - 133)
	95	(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 #...: D2C130228 **Work Order #...:** EWKQA1AA **Matrix.....:** WATER
MB Lot-Sample #: D2C190000-238

Prep Date.....: 03/19/02 **Analysis Time..:** 18:00
Analysis Date..: 03/20/02 **Prep Batch #...:** 2078238
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
gamma-BHC (Lindane)	ND	0.050	ug/L	SW846 8081A
delta-BHC	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	113	(15 - 162)
Tetrachloro-m-xylene	101	(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 #...: D2C130228 **Work Order #...:** EWCEN1DC-MS **Matrix.....:** WG
MS Lot-Sample #: D2C130228-001 EWCEN1DD-MSD
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/20/02
Prep Batch #...: 2078238 **Analysis Time..:** 23:16
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
4,4'-DDT	**97**	**(68 - 147)**			**SW846 8081A**
	93	**(68 - 147)**	**2.5**	**(0-30)**	**SW846 8081A**
Aldrin	**87**	**(55 - 137)**			**SW846 8081A**
	83	**(55 - 137)**	**3.1**	**(0-30)**	**SW846 8081A**
Dieldrin	**99**	**(68 - 146)**			**SW846 8081A**
	97	**(68 - 146)**	**0.23**	**(0-30)**	**SW846 8081A**
Endrin	**99**	**(66 - 143)**			**SW846 8081A**
	88	**(66 - 143)**	**9.7**	**(0-30)**	**SW846 8081A**
gamma-BHC (Lindane)	**101**	**(68 - 142)**			**SW846 8081A**
	98	**(68 - 142)**	**1.4**	**(0-30)**	**SW846 8081A**
Heptachlor	**92**	**(59 - 143)**			**SW846 8081A**
	89	**(59 - 143)**	**1.5**	**(0-30)**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	113	(15 - 162)
	109	(15 - 162)
Tetrachloro-m-xylene	98	(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

MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: D2C130228 **Work Order #...:** EWCEN1DC-MS **Matrix.....:** WG
MS Lot-Sample #: D2C130228-001 EWCEN1DD-MSD
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/20/02
Prep Batch #...: 2078238 **Analysis Time..:** 23:16
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
4,4'-DDT	**ND**	**0.479**	**0.465**	**ug/L**	**97**		**SW846 8081A**
	ND	**0.488**	**0.453**	**ug/L**	**93**	**2.5**	**SW846 8081A**
Aldrin	**ND**	**0.479**	**0.416**	**ug/L**	**87**		**SW846 8081A**
	ND	**0.488**	**0.403**	**ug/L**	**83**	**3.1**	**SW846 8081A**
Dieldrin	**ND**	**0.479**	**0.474**	**ug/L**	**99**		**SW846 8081A**
	ND	**0.488**	**0.473**	**ug/L**	**97**	**0.23**	**SW846 8081A**
Endrin	**ND**	**0.479**	**0.473**	**ug/L**	**99**		**SW846 8081A**
	ND	**0.488**	**0.429**	**ug/L**	**88**	**9.7**	**SW846 8081A**
gamma-BHC (Lindane)	**ND**	**0.479**	**0.485**	**ug/L**	**101**		**SW846 8081A**
	ND	**0.488**	**0.479**	**ug/L**	**98**	**1.4**	**SW846 8081A**
Heptachlor	**ND**	**0.479**	**0.440**	**ug/L**	**92**		**SW846 8081A**
	ND	**0.488**	**0.433**	**ug/L**	**89**	**1.5**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	113	(15 - 162)
	109	(15 - 162)
Tetrachloro-m-xylene	98	(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 EVALUATION REPORT

GC Semivolatiles

Client Lot #...: D2C130228 **Work Order #...:** EWKQG1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C190000-249 EWKQG1AD-LCSD
Prep Date.....: 03/19/02 **Analysis Date..:** 03/21/02
Prep Batch #...: 2078249 **Analysis Time..:** 16:09
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aroclor 1016	**83**	**(65 - 131)**			**SW846 8082**
	84	**(65 - 131)**	**0.38**	**(0-30)**	**SW846 8082**
Aroclor 1260	**79**	**(55 - 139)**			**SW846 8082**
	79	**(55 - 139)**	**1.2**	**(0-30)**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	74	(41 - 107)
	79	(41 - 107)
Decachlorobiphenyl	102	(46 - 131)
	107	(46 - 131)

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 #...: D2C130228 **Work Order #...:** EWKQG1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C190000-249 EWKQG1AD-LCSD
Prep Date.....: 03/19/02 **Analysis Date..:** 03/21/02
Prep Batch #...: 2078249 **Analysis Time..:** 16:09
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Aroclor 1016	**2.00**	**1.67**	**ug/L**	**83**		**SW846 8082**
	2.00	**1.67**	**ug/L**	**84**	**0.38**	**SW846 8082**
Aroclor 1260	**2.00**	**1.57**	**ug/L**	**79**		**SW846 8082**
	2.00	**1.59**	**ug/L**	**79**	**1.2**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	74	(41 - 107)
	79	(41 - 107)
Decachlorobiphenyl	102	(46 - 131)
	107	(46 - 131)

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 #...: D2C130228
MB Lot-Sample #: D2C190000-249
Work Order #...: EWKQG1AA
Matrix.....: WATER
Prep Date.....: 03/19/02
Analysis Time..: 15:44
Analysis Date..: 03/21/02
Prep Batch #...: 2078249
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
Tetrachloro-m-xylene	80	(41 - 107)
Decachlorobiphenyl	107	(46 - 131)

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: D2C130228 **Work Order #...:** EWCEN1DE-MS **Matrix.....:** WG
MS Lot-Sample #: D2C130228-001 EWCEN1DF-MSD
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/21/02
Prep Batch #...: 2078249 **Analysis Time..:** 19:09
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aroclor 1016	**82**	**(65 - 131)**			**SW846 8082**
	84	**(65 - 131)**	**2.6**	**(0-30)**	**SW846 8082**
Aroclor 1260	**81**	**(55 - 139)**			**SW846 8082**
	83	**(55 - 139)**	**1.6**	**(0-30)**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	78	(41 - 107)
	81	(41 - 107)
Decachlorobiphenyl	105	(46 - 131)
	109	(46 - 131)

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 #...: D2C130228 **Work Order #...:** EWCEN1DE-MS **Matrix.....:** WG
MS Lot-Sample #: D2C130228-001 EWCEN1DF-MSD
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/21/02
Prep Batch #...: 2078249 **Analysis Time..:** 19:09
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Aroclor 1016	**ND**	**1.92**	**1.58**	**ug/L**	**82**		**SW846 8082**
	ND	**1.92**	**1.62**	**ug/L**	**84**	**2.6**	**SW846 8082**
Aroclor 1260	**ND**	**1.92**	**1.56**	**ug/L**	**81**		**SW846 8082**
	ND	**1.92**	**1.59**	**ug/L**	**83**	**1.6**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	78	(41 - 107)
	81	(41 - 107)
Decachlorobiphenyl	105	(46 - 131)
	109	(46 - 131)

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 #...: D2C130228 **Work Order #...:** EWLR81AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C190000-479 EWLR81AD-LCSD
Prep Date.....: 03/19/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2078479 **Analysis Time..:** 16:25
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2,4-D	**84**	(20 - 133)			**SW846 8151A**
	84	(20 - 133)	0.10	(0-30)	**SW846 8151A**
2,4,5-TP (Silvex)	**96**	(23 - 146)			**SW846 8151A**
	96	(23 - 146)	0.20	(0-30)	**SW846 8151A**
2,4,5-T	**97**	(20 - 155)			**SW846 8151A**
	98	(20 - 155)	1.1	(0-30)	**SW846 8151A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	90	(20 - 150)
	88	(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 #...: D2C130228 **Work Order #...:** EWLR81AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C190000-479 EWLR81AD-LCSD
Prep Date.....: 03/19/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2078479 **Analysis Time..:** 16:25
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
2,4-D	8.00	6.69	ug/L	84		SW846 8151A
	8.00	6.69	ug/L	84	0.10	SW846 8151A
2,4,5-TP (Silvex)	2.00	1.92	ug/L	96		SW846 8151A
	2.00	1.92	ug/L	96	0.20	SW846 8151A
2,4,5-T	2.00	1.94	ug/L	97		SW846 8151A
	2.00	1.96	ug/L	98	1.1	SW846 8151A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	90	(20 - 150)
	88	(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 #...: D2C130228 **Work Order #...:** EWLR81AA **Matrix.....:** WATER
MB Lot-Sample #: D2C190000-479

Prep Date.....: 03/19/02 **Analysis Time..:** 15:50

Analysis Date..: 03/22/02 **Prep Batch #...:** 2078479
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
2,4-D	ND	4.0	ug/L	SW846 8151A
Dinoseb	ND	0.60	ug/L	SW846 8151A
2,4,5-TP (Silvex)	ND	1.0	ug/L	SW846 8151A
2,4,5-T	ND	1.0	ug/L	SW846 8151A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	83	(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 #...: D2C130228 **Work Order #...:** EWCEN1DG-MS **Matrix.....:** WG
MS Lot-Sample #: D2C130228-001 EWCEN1DH-MSD
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2078479 **Analysis Time..:** 20:31
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2,4-D	**84**	**(20 - 133)**			**SW846 8151A**
	80	**(20 - 133)**	**5.2**	**(0-30)**	**SW846 8151A**
2,4,5-TP (Silvex)	**96**	**(23 - 146)**			**SW846 8151A**
	92	**(23 - 146)**	**4.2**	**(0-30)**	**SW846 8151A**
2,4,5-T	**98**	**(20 - 155)**			**SW846 8151A**
	90	**(20 - 155)**	**8.6**	**(0-30)**	**SW846 8151A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	75	(20 - 150)
	94	(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 #...: D2C130228 **Work Order #...:** EWCEN1DG-MS **Matrix.....:** WG
MS Lot-Sample #: D2C130228-001 EWCEN1DH-MSD
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2078479 **Analysis Time..:** 20:31
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
2,4-D	**ND**	**7.66**	**6.41**	**ug/L**	**84**		**SW846 8151A**
	ND	**7.64**	**6.09**	**ug/L**	**80**	**5.2**	**SW846 8151A**
2,4,5-TP (Silvex)	**ND**	**1.91**	**1.84**	**ug/L**	**96**		**SW846 8151A**
	ND	**1.91**	**1.76**	**ug/L**	**92**	**4.2**	**SW846 8151A**
2,4,5-T	**ND**	**1.91**	**1.88**	**ug/L**	**98**		**SW846 8151A**
	ND	**1.91**	**1.72**	**ug/L**	**90**	**8.6**	**SW846 8151A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	75	(20 - 150)
	94	(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 EVALUATION REPORT

Trace Level Organic Compounds

Client Lot #...: D2C130228 **Work Order #...:** EWK881AC **Matrix.....:** WATER
LCS Lot-Sample#: G2C190000-358
Prep Date.....: 03/19/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2078358 **Analysis Time..:** 19:22
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
2,3,7,8-TCDD	**100**	**(79 - 125)**	**SW846 8280A**
1,2,3,7,8-PeCDD	**101**	**(72 - 137)**	**SW846 8280A**
1,2,3,6,7,8-HxCDD	**96**	**(71 - 130)**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDD	**105**	**(54 - 153)**	**SW846 8280A**
OCDD	**100**	**(69 - 127)**	**SW846 8280A**
2,3,7,8-TCDF	**99**	**(78 - 123)**	**SW846 8280A**
1,2,3,7,8-PeCDF	**101**	**(75 - 133)**	**SW846 8280A**
1,2,3,6,7,8-HxCDF	**96**	**(70 - 128)**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDF	**99**	**(76 - 129)**	**SW846 8280A**
OCDF	**101**	**(66 - 130)**	**SW846 8280A**

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	105	(25 - 150)
13C-2,3,7,8-TCDF	103	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	102	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	104	(25 - 150)
13C-OCDD	106	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	108	(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 #...: D2C130228 **Work Order #...:** EWK881AC **Matrix.....:** WATER
LCS Lot-Sample#: G2C190000-358
Prep Date.....: 03/19/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2078358 **Analysis Time..:** 19:22
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
2,3,7,8-TCDD	**25.0**	**24.9**	**ng/L**	**100**	**SW846 8280A**
1,2,3,7,8-PeCDD	**62.5**	**63.4**	**ng/L**	**101**	**SW846 8280A**
1,2,3,6,7,8-HxCDD	**62.5**	**60.0**	**ng/L**	**96**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDD	**62.5**	**65.6**	**ng/L**	**105**	**SW846 8280A**
OCDD	**125**	**125**	**ng/L**	**100**	**SW846 8280A**
2,3,7,8-TCDF	**25.0**	**24.7**	**ng/L**	**99**	**SW846 8280A**
1,2,3,7,8-PeCDF	**62.5**	**63.0**	**ng/L**	**101**	**SW846 8280A**
1,2,3,6,7,8-HxCDF	**62.5**	**60.2**	**ng/L**	**96**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDF	**62.5**	**61.8**	**ng/L**	**99**	**SW846 8280A**
OCDF	**125**	**126**	**ng/L**	**101**	**SW846 8280A**

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	105	(25 - 150)
13C-2,3,7,8-TCDF	103	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	102	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	104	(25 - 150)
13C-OCDD	106	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	108	(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 #...: D2C130228 **Work Order #...:** EWK881AA **Matrix.....:** WATER
MB Lot-Sample #: G2C190000-358

Prep Date.....: 03/19/02 **Analysis Time..:** 18:34
Analysis Date..: 03/22/02 **Prep Batch #...:** 2078358
Dilution Factor: 1

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.043	ng/L	SW846 8280A
Total TCDD	ND	0.043	ng/L	SW846 8280A
Total PeCDD	ND	1.9	ng/L	SW846 8280A
Total HxCDD	ND	0.13	ng/L	SW846 8280A
Total TCDF	ND	0.024	ng/L	SW846 8280A
Total PeCDF	ND	0.24	ng/L	SW846 8280A
Total HxCDF	ND	0.10	ng/L	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	87	(25 - 150)
13C-2,3,7,8-TCDF	85	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	84	(25 - 150)
3C-1,2,3,4,6,7,8-HpCDF	88	(25 - 150)
13C-OCDD	88	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	98	(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 #...: D2C130228 **Work Order #...:** EWCEN1DV-MS **Matrix.....:** WG
MS Lot-Sample #: D2C130228-001 EWCEN1DW-MSD
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2078358 **Analysis Time..:** 20:57
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2,3,7,8-TCDD	98	(79 - 125)			SW846 8280A
	99	(79 - 125)	0.60	(0-19)	SW846 8280A
1,2,3,7,8-PeCDD	99	(72 - 137)			SW846 8280A
	100	(72 - 137)	0.09	(0-39)	SW846 8280A
1,2,3,6,7,8-HxCDD	92	(71 - 130)			SW846 8280A
	93	(71 - 130)	0.58	(0-25)	SW846 8280A
1,2,3,4,6,7,8-HpCDD	101	(54 - 153)			SW846 8280A
	103	(54 - 153)	0.42	(0-50)	SW846 8280A
OCDD	98	(69 - 127)			SW846 8280A
	98	(69 - 127)	1.4	(0-33)	SW846 8280A
2,3,7,8-TCDF	97	(78 - 123)			SW846 8280A
	97	(78 - 123)	1.4	(0-16)	SW846 8280A
1,2,3,7,8-PeCDF	97	(75 - 133)			SW846 8280A
	97	(75 - 133)	1.5	(0-44)	SW846 8280A
1,2,3,6,7,8-HxCDF	96	(70 - 128)			SW846 8280A
	96	(70 - 128)	1.4	(0-24)	SW846 8280A
1,2,3,4,6,7,8-HpCDF	97	(76 - 129)			SW846 8280A
	97	(76 - 129)	0.65	(0-18)	SW846 8280A
OCDF	99	(66 - 130)			SW846 8280A
	99	(66 - 130)	1.3	(0-35)	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	105	(25 - 150)
	110	(25 - 150)
13C-2,3,7,8-TCDF	104	(25 - 150)
	110	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	101	(25 - 150)
	105	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	102	(25 - 150)
	106	(25 - 150)
13C-OCDD	105	(25 - 150)
	111	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	107	(25 - 150)
	106	(25 - 150)

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

Trace Level Organic Compounds

Client Lot #...: D2C130228 **Work Order #...:** EWCEN1DV-MS **Matrix.....:** WG
MS Lot-Sample #: D2C130228-001 EWCEN1DW-MSD

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

MATRIX SPIKE SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: D2C130228 Work Order #...: EWCEN1DV-MS Matrix.....: WG
MS Lot-Sample #: D2C130228-001 EWCEN1DW-MSD
Date Sampled...: 03/12/02 13:15 Date Received..: 03/13/02
Prep Date.....: 03/19/02 Analysis Date..: 03/22/02
Prep Batch #...: 2078358 Analysis Time..: 20:57
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
2,3,7,8-TCDD	ND	25.2	24.7	ng/L	98		SW846 8280A
	ND	24.8	24.6	ng/L	99	0.60	SW846 8280A
1,2,3,7,8-PeCDD	ND	63.0	62.3	ng/L	99		SW846 8280A
	ND	62.1	62.2	ng/L	100	0.09	SW846 8280A
1,2,3,6,7,8-HxCDD	ND	63.0	58.2	ng/L	92		SW846 8280A
	ND	62.1	57.9	ng/L	93	0.58	SW846 8280A
1,2,3,4,6,7,8-HpCDD	ND	63.0	63.7	ng/L	101		SW846 8280A
	ND	62.1	64.0	ng/L	103	0.42	SW846 8280A
OCDD	ND	126	123	ng/L	98		SW846 8280A
	ND	124	121	ng/L	98	1.4	SW846 8280A
2,3,7,8-TCDF	ND	25.2	24.5	ng/L	97		SW846 8280A
	ND	24.8	24.2	ng/L	97	1.4	SW846 8280A
1,2,3,7,8-PeCDF	ND	63.0	61.1	ng/L	97		SW846 8280A
	ND	62.1	60.2	ng/L	97	1.5	SW846 8280A
1,2,3,6,7,8-HxCDF	ND	63.0	60.6	ng/L	96		SW846 8280A
	ND	62.1	59.7	ng/L	96	1.4	SW846 8280A
1,2,3,4,6,7,8-HpCDF	ND	63.0	60.9	ng/L	97		SW846 8280A
	ND	62.1	60.5	ng/L	97	0.65	SW846 8280A
OCDF	ND	126	125	ng/L	99		SW846 8280A
	ND	124	123	ng/L	99	1.3	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	105	(25 - 150)
	110	(25 - 150)
13C-2,3,7,8-TCDF	104	(25 - 150)
	110	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	101	(25 - 150)
	105	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	102	(25 - 150)
	106	(25 - 150)
13C-OCDD	105	(25 - 150)
	111	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	107	(25 - 150)
	106	(25 - 150)

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: D2C130228 **Work Order #...:** EWCEN1DV-MS **Matrix.....:** WG
MS Lot-Sample #: D2C130228-001 EWCEN1DW-MSD

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 EVALUATION REPORT

HPLC

Client Lot #...: D2C130228 **Work Order #...:** EWKQV1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C190000-234 EWKQV1AD-LCSD
Prep Date.....: 03/19/02 **Analysis Date..:** 04/03/02
Prep Batch #...: 2078234 **Analysis Time..:** 09:40
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzo(a)pyrene	**77**	**(57 - 112)**			**SW846 8310**
	80	**(57 - 112)**	**4.7**	**(0-20)**	**SW846 8310**
Fluorene	**88**	**(54 - 115)**			**SW846 8310**
	91	**(54 - 115)**	**3.2**	**(0-40)**	**SW846 8310**
Indeno(1,2,3-cd)pyrene	**82**	**(52 - 106)**			**SW846 8310**
	86	**(52 - 106)**	**5.0**	**(0-30)**	**SW846 8310**
Naphthalene	**84**	**(49 - 110)**			**SW846 8310**
	86	**(49 - 110)**	**2.1**	**(0-40)**	**SW846 8310**
Pyrene	**97**	**(62 - 117)**			**SW846 8310**
	100	**(62 - 117)**	**3.1**	**(0-40)**	**SW846 8310**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	90	(64 - 108)
	93	(64 - 108)

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 #...: D2C130228 **Work Order #...:** EWKQV1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C190000-234 EWKQV1AD-LCSD
Prep Date.....: 03/19/02 **Analysis Date..:** 04/03/02
Prep Batch #...: 2078234 **Analysis Time..:** 09:40
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzo(a)pyrene	**20.0**	**15.4**	**ug/L**	**77**		**SW846 8310**
	20.0	**16.1**	**ug/L**	**80**	**4.7**	**SW846 8310**
Fluorene	**20.0**	**17.6**	**ug/L**	**88**		**SW846 8310**
	20.0	**18.2**	**ug/L**	**91**	**3.2**	**SW846 8310**
Indeno(1,2,3-cd)pyrene	**20.0**	**16.4**	**ug/L**	**82**		**SW846 8310**
	20.0	**17.2**	**ug/L**	**86**	**5.0**	**SW846 8310**
Naphthalene	**20.0**	**16.8**	**ug/L**	**84**		**SW846 8310**
	20.0	**17.1**	**ug/L**	**86**	**2.1**	**SW846 8310**
Pyrene	**20.0**	**19.4**	**ug/L**	**97**		**SW846 8310**
	20.0	**20.0**	**ug/L**	**100**	**3.1**	**SW846 8310**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	90	(64 - 108)
	93	(64 - 108)

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 #...: D2C130228 **Work Order #...:** EWKQV1AA **Matrix.....:** WATER
MB Lot-Sample #: D2C190000-234

Prep Date.....: 03/19/02 **Analysis Time..:** 09:10

Analysis Date..: 04/03/02 **Prep Batch #...:** 2078234
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	98	(64 - 108)

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: D2C130228 **Work Order #...:** EWCEN1DJ-MS **Matrix.....:** WG
MS Lot-Sample #: D2C130228-001 EWCEN1DK-MSD
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 04/03/02
Prep Batch #...: 2078234 **Analysis Time..:** 11:07
Dilution Factor: 1.

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzo(a)pyrene	**75**	**(57 - 112)**			**SW846 8310**
	79	**(57 - 112)**	**6.6**	**(0-20)**	**SW846 8310**
Fluorene	**95**	**(54 - 115)**			**SW846 8310**
	89	**(54 - 115)**	**4.7**	**(0-40)**	**SW846 8310**
Indeno(1,2,3-cd)pyrene	**75**	**(52 - 106)**			**SW846 8310**
	82	**(52 - 106)**	**9.9**	**(0-30)**	**SW846 8310**
Naphthalene	**92**	**(49 - 110)**			**SW846 8310**
	85	**(49 - 110)**	**6.8**	**(0-40)**	**SW846 8310**
Pyrene	**104**	**(62 - 117)**			**SW846 8310**
	98	**(62 - 117)**	**4.7**	**(0-40)**	**SW846 8310**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	95	(64 - 108)
	82	(64 - 108)

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 #...: D2C130228 **Work Order #...:** EWCEN1DJ-MS **Matrix.....:** WG
MS Lot-Sample #: D2C130228-001 EWCEN1DK-MSD
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 04/03/02
Prep Batch #...: 2078234 **Analysis Time..:** 11:07
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzo(a)pyrene	**ND**	**19.1**	**14.4**	**ug/L**	**75**		**SW846 8310**
	ND	**19.4**	**15.4**	**ug/L**	**79**	**6.6**	**SW846 8310**
Fluorene	**ND**	**19.1**	**18.1**	**ug/L**	**95**		**SW846 8310**
	ND	**19.4**	**17.2**	**ug/L**	**89**	**4.7**	**SW846 8310**
Indeno(1,2,3-cd)pyrene	**ND**	**19.1**	**14.4**	**ug/L**	**75**		**SW846 8310**
	ND	**19.4**	**15.9**	**ug/L**	**82**	**9.9**	**SW846 8310**
Naphthalene	**ND**	**19.1**	**17.6**	**ug/L**	**92**		**SW846 8310**
	ND	**19.4**	**16.4**	**ug/L**	**85**	**6.8**	**SW846 8310**
Pyrene	**ND**	**19.1**	**19.9**	**ug/L**	**104**		**SW846 8310**
	ND	**19.4**	**19.0**	**ug/L**	**98**	**4.7**	**SW846 8310**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	95	(64 - 108)
	82	(64 - 108)

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 #...: D2C130228 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Aluminum	103	(88 - 108)			SW846 6010B	03/21-03/22/02	2078272
	103	(88 - 108)	0.28	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Barium	104	(92 - 113)			SW846 6010B	03/21-03/22/02	2078272
	106	(92 - 113)	1.8	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Beryllium	95	(89 - 112)			SW846 6010B	03/21-03/22/02	2078272
	97	(89 - 112)	2.0	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Calcium	100	(90 - 110)			SW846 6010B	03/21-03/22/02	2078272
	100	(90 - 110)	0.66	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Cobalt	93	(88 - 108)			SW846 6010B	03/21-03/22/02	2078272
	95	(88 - 108)	2.1	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Copper	100	(90 - 110)			SW846 6010B	03/21-03/22/02	2078272
	102	(90 - 110)	1.6	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Iron	104	(90 - 110)			SW846 6010B	03/21-03/22/02	2078272
	103	(90 - 110)	1.1	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Magnesium	105	(92 - 112)			SW846 6010B	03/21-03/22/02	2078272
	105	(92 - 112)	0.77	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Manganese	95	(90 - 110)			SW846 6010B	03/21-03/22/02	2078272
	97	(90 - 110)	2.3	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Nickel	103	(90 - 111)			SW846 6010B	03/21-03/27/02	2078272
	108	(90 - 111)	5.1	(0-20)	SW846 6010B	03/21-03/27/02	2078272
		Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D2C130228 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Potassium	102	(88 - 109)			SW846 6010B	03/21-03/22/02	2078272
	101	(88 - 109)	0.91	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Sodium	108	(91 - 113)			SW846 6010B	03/21-03/22/02	2078272
	106	(91 - 113)	2.2	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Tin	97	(87 - 109)			SW846 6010B	03/21-03/27/02	2078272
	102	(87 - 109)	4.9	(0-20)	SW846 6010B	03/21-03/27/02	2078272
		Dilution Factor: 1					
Vanadium	91	(89 - 113)			SW846 6010B	03/21-03/22/02	2078272
	93	(89 - 113)	2.2	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Zinc	88	(84 - 111)			SW846 6010B	03/21-03/22/02	2078272
	90	(84 - 111)	2.8	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Molybdenum	91	(89 - 109)			SW846 6010B	03/21-03/22/02	2078272
	93	(89 - 109)	2.7	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Antimony	100	(86 - 119)			SW846 6020	03/25-03/27/02	2078476
	100	(86 - 119)	0.16	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Arsenic	97	(86 - 114)			SW846 6020	03/25-03/27/02	2078476
	95	(86 - 114)	2.4	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Cadmium	100	(85 - 115)			SW846 6020	03/25-03/27/02	2078476
	100	(85 - 115)	0.15	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Chromium	98	(85 - 115)			SW846 6020	03/25-03/27/02	2078476
	99	(85 - 115)	1.2	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D2C130228 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Lead	102	(85 - 115)			SW846 6020	03/25-03/27/02	2078476
	101	(85 - 115)	1.2	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Selenium	94	(85 - 115)			SW846 6020	03/25-03/27/02	2078476
	92	(85 - 115)	1.8	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Silver	101	(85 - 114)			SW846 6020	03/25-03/27/02	2078476
	99	(85 - 114)	1.6	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Thallium	100	(85 - 115)			SW846 6020	03/25-03/27/02	2078476
	101	(85 - 115)	0.78	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Mercury	94	(84 - 114)			SW846 7470A	04/01/02	2085309
	93	(84 - 114)	1.1	(0-10)	SW846 7470A	04/01/02	2085309
		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 #...: D2C130228 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Aluminum	2000	2060	ug/L	103		SW846 6010B	03/21-03/22/02	2078272
	2000	2050	ug/L	103	0.28	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Barium	2000	2080	ug/L	104		SW846 6010B	03/21-03/22/02	2078272
	2000	2120	ug/L	106	1.8	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Beryllium	50.0	47.4	ug/L	95		SW846 6010B	03/21-03/22/02	2078272
	50.0	48.4	ug/L	97	2.0	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Calcium	50000	50100	ug/L	100		SW846 6010B	03/21-03/22/02	2078272
	50000	49800	ug/L	100	0.66	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Cobalt	500	463	ug/L	93		SW846 6010B	03/21-03/22/02	2078272
	500	473	ug/L	95	2.1	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Copper	250	251	ug/L	100		SW846 6010B	03/21-03/22/02	2078272
	250	254	ug/L	102	1.6	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Iron	1000	1040	ug/L	104		SW846 6010B	03/21-03/22/02	2078272
	1000	1030	ug/L	103	1.1	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Magnesium	50000	52700	ug/L	105		SW846 6010B	03/21-03/22/02	2078272
	50000	52300	ug/L	105	0.77	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Manganese	500	476	ug/L	95		SW846 6010B	03/21-03/22/02	2078272
	500	487	ug/L	97	2.3	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Nickel	500	514	ug/L	103		SW846 6010B	03/21-03/27/02	2078272
	500	541	ug/L	108	5.1	SW846 6010B	03/21-03/27/02	2078272
			Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D2C130228 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Potassium	50000	51200	ug/L	102		SW846 6010B	03/21-03/22/02	2078272
	50000	50700	ug/L	101	0.91	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Sodium	50000	54000	ug/L	108		SW846 6010B	03/21-03/22/02	2078272
	50000	52800	ug/L	106	2.2	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Tin	2000	1940	ug/L	97		SW846 6010B	03/21-03/27/02	2078272
	2000	2040	ug/L	102	4.9	SW846 6010B	03/21-03/27/02	2078272
			Dilution Factor: 1					
Vanadium	500	456	ug/L	91		SW846 6010B	03/21-03/22/02	2078272
	500	466	ug/L	93	2.2	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Zinc	500	439	ug/L	88		SW846 6010B	03/21-03/22/02	2078272
	500	451	ug/L	90	2.8	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Molybdenum	1000	908	ug/L	91		SW846 6010B	03/21-03/22/02	2078272
	1000	933	ug/L	93	2.7	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Antimony	200	200	ug/L	100		SW846 6020	03/25-03/27/02	2078476
	200	200	ug/L	100	0.16	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Arsenic	200	194	ug/L	97		SW846 6020	03/25-03/27/02	2078476
	200	189	ug/L	95	2.4	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Cadmium	200	200	ug/L	100		SW846 6020	03/25-03/27/02	2078476
	200	200	ug/L	100	0.15	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Chromium	200	197	ug/L	98		SW846 6020	03/25-03/27/02	2078476
	200	199	ug/L	99	1.2	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D2C130228 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Lead	200	204	ug/L	102		SW846 6020	03/25-03/27/02	2078476
	200	201	ug/L	101	1.2	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Selenium	200	187	ug/L	94		SW846 6020	03/25-03/27/02	2078476
	200	184	ug/L	92	1.8	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Silver	200	202	ug/L	101		SW846 6020	03/25-03/27/02	2078476
	200	199	ug/L	99	1.6	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Thallium	200	201	ug/L	100		SW846 6020	03/25-03/27/02	2078476
	200	202	ug/L	101	0.78	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Mercury	5.00	4.71	ug/L	94		SW846 7470A	04/01/02	2085309
	5.00	4.66	ug/L	93	1.1	SW846 7470A	04/01/02	2085307
			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 #...: D2C130228 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: D2C190000-272 **Prep Batch #...:** 2078272						
Aluminum	ND	100	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AA
		Dilution Factor: 1				
		Analysis Time..: 16:14				
Barium	ND	10.0	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AC
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Beryllium	ND	2.0	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AD
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Calcium	ND	200	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AP
		Dilution Factor: 1				
		Analysis Time..: 16:14				
Cobalt	ND	10.0	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AL
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Copper	ND	20.0	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AE
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Iron	ND	100	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AF
		Dilution Factor: 1				
		Analysis Time..: 16:14				
Magnesium	ND	200	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AQ
		Dilution Factor: 1				
		Analysis Time..: 16:14				
Manganese	ND	10.0	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AG
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Nickel	ND	40.0	ug/L	SW846 6010B	03/21-03/27/02	EWKW61AH
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Potassium	ND	3000	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AR
		Dilution Factor: 1				
		Analysis Time..: 16:14				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D2C130228 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Sodium	ND	5000	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AT
		Dilution Factor: 1				
		Analysis Time..: 16:14				
Tin	ND	100	ug/L	SW846 6010B	03/21-03/27/02	EWKW61AM
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Vanadium	ND	10.0	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AJ
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Zinc	ND	20.0	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AK
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Molybdenum	ND	20.0	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AN
		Dilution Factor: 1				
		Analysis Time..: 21:52				

MB Lot-Sample #: D2C190000-476 **Prep Batch #...:** 2078476

Antimony	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWLRM1AA
		Dilution Factor: 1				
		Analysis Time..: 16:12				
Arsenic	ND	5.0	ug/L	SW846 6020	03/25-03/27/02	EWLRM1AC
		Dilution Factor: 1				
		Analysis Time..: 16:12				
Cadmium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWLRM1AD
		Dilution Factor: 1				
		Analysis Time..: 16:12				
Chromium	**0.64 B**	**1.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWLRM1AJ**
		Dilution Factor: 1				
		Analysis Time..: 16:12				
Lead	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWLRM1AE
		Dilution Factor: 1				
		Analysis Time..: 16:12				
Selenium	ND	5.0	ug/L	SW846 6020	03/25-03/27/02	EWLRM1AF
		Dilution Factor: 1				
		Analysis Time..: 16:12				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D2C130228 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWLRM1AG
		Dilution Factor: 1				
		Analysis Time..: 16:12				
Thallium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWLRM1AH
		Dilution Factor: 1				
		Analysis Time..: 16:12				

NOTE(S):

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

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D2C130228 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: D2C260000-309 **Prep Batch #...:** 2085309						
Mercury	ND	0.20	ug/L	SW846 7470A	04/01/02	EW0G21AA
		Dilution Factor: 1				
		Analysis Time..: 21:40				

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D2C130228 **Matrix.....:** WG
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D2C130228-001 **Prep Batch #...:** 2078272							
Aluminum	105	(88 - 108)			SW846 6010B	03/21-03/22/02	EWCEN1D1
	95	(88 - 108)	10	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1D2
		Dilution Factor: 1					
		Analysis Time..: 16:43					
Barium	104	(92 - 113)			SW846 6010B	03/21-03/22/02	EWCEN1D3
	99	(92 - 113)	4.6	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1D4
		Dilution Factor: 1					
		Analysis Time..: 23:10					
Beryllium	100	(89 - 112)			SW846 6010B	03/21-03/28/02	EWCEN1D5
	91	(89 - 112)	10	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1D6
		Dilution Factor: 1					
		Analysis Time..: 16:58					
Calcium	100	(90 - 110)			SW846 6010B	03/21-03/22/02	EWCEN1EQ
	85 N	(90 - 110)	9.7	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1ER
		Dilution Factor: 1					
		Analysis Time..: 16:43					
Cobalt	92	(88 - 108)			SW846 6010B	03/21-03/22/02	EWCEN1EJ
	88	(88 - 108)	4.2	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1EK
		Dilution Factor: 1					
		Analysis Time..: 23:10					
Copper	101	(90 - 110)			SW846 6010B	03/21-03/22/02	EWCEN1D7
	96	(90 - 110)	5.0	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1D8
		Dilution Factor: 1					
		Analysis Time..: 23:10					
Iron	105	(90 - 110)			SW846 6010B	03/21-03/22/02	EWCEN1D9
	94	(90 - 110)	11	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1EA
		Dilution Factor: 1					
		Analysis Time..: 16:43					
Magnesium	108	(92 - 112)			SW846 6010B	03/21-03/22/02	EWCEN1ET
	91 N	(92 - 112)	9.8	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1EU
		Dilution Factor: 1					
		Analysis Time..: 16:43					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D2C130228 **Matrix.....:** WG
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	94	(90 - 110)			SW846 6010B	03/21-03/22/02	EWCEN1EC
	90	(90 - 110)	4.1	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1ED
		Dilution Factor: 1					
		Analysis Time..: 23:10					
Nickel	102	(90 - 111)			SW846 6010B	03/21-03/22/02	EWCEN1EE
	98	(90 - 111)	4.2	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1EF
		Dilution Factor: 1					
		Analysis Time..: 23:10					
Potassium	104	(88 - 109)			SW846 6010B	03/21-03/22/02	EWCEN1EV
	93	(88 - 109)	9.9	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1EW
		Dilution Factor: 1					
		Analysis Time..: 16:43					
Sodium	108	(91 - 113)			SW846 6010B	03/21-03/22/02	EWCEN1EX
	90 N	(91 - 113)	9.0	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1E0
		Dilution Factor: 1					
		Analysis Time..: 16:43					
Tin	102	(87 - 109)			SW846 6010B	03/21-03/28/02	EWCEN1EL
	99	(87 - 109)	2.6	(0-20)	SW846 6010B	03/21-03/27/02	EWCEN1EM
		Dilution Factor: 1					
		Analysis Time..: 16:58					
Vanadium	90	(89 - 113)			SW846 6010B	03/21-03/22/02	EWCEN1EG
	85 N	(89 - 113)	4.4	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1EH
		Dilution Factor: 1					
		Analysis Time..: 23:10					
Zinc	87	(84 - 111)			SW846 6010B	03/21-03/22/02	EWCEN1CJ
	84	(84 - 111)	3.0	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1CK
		Dilution Factor: 1					
		Analysis Time..: 23:10					
Molybdenum	91	(89 - 109)			SW846 6010B	03/21-03/22/02	EWCEN1EN
	87 N	(89 - 109)	4.4	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1EP
		Dilution Factor: 1					
		Analysis Time..: 23:10					

MS Lot-Sample #: D2C130228-001 **Prep Batch #...:** 2078476

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D2C130228 **Matrix.....:** WG
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Antimony	100	(86 - 119)			SW846 6020	03/25-03/27/02	EWCEN1CL
	100	(86 - 119)	0.64	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1CM
		Dilution Factor: 1					
		Analysis Time..: 20:26					
Arsenic	98	(86 - 114)			SW846 6020	03/25-03/27/02	EWCEN1CN
	97	(86 - 114)	0.80	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1CP
		Dilution Factor: 1					
		Analysis Time..: 20:26					
Cadmium	100	(85 - 115)			SW846 6020	03/25-03/27/02	EWCEN1CQ
	100	(85 - 115)	0.56	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1CR
		Dilution Factor: 1					
		Analysis Time..: 20:26					
Chromium	99	(85 - 115)			SW846 6020	03/25-03/27/02	EWCEN1C3
	98	(85 - 115)	0.95	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1C4
		Dilution Factor: 1					
		Analysis Time..: 20:26					
Lead	103	(85 - 115)			SW846 6020	03/25-03/27/02	EWCEN1CT
	102	(85 - 115)	0.37	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1CU
		Dilution Factor: 1					
		Analysis Time..: 20:26					
Selenium	93	(85 - 115)			SW846 6020	03/25-03/27/02	EWCEN1CV
	94	(85 - 115)	1.4	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1CW
		Dilution Factor: 1					
		Analysis Time..: 20:26					
Silver	89	(85 - 114)			SW846 6020	03/25-03/27/02	EWCEN1CX
	96	(85 - 114)	7.6	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1C0
		Dilution Factor: 1					
		Analysis Time..: 20:26					
Thallium	101	(85 - 115)			SW846 6020	03/25-03/27/02	EWCEN1C1
	101	(85 - 115)	0.02	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1C2
		Dilution Factor: 1					
		Analysis Time..: 20:26					

MS Lot-Sample #: D2C130228-001 **Prep Batch #...:** 2085309

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D2C130228 **Matrix.....:** WG
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Mercury	89	(84 - 114)			SW846 7470A	04/01/02	EWCEN1C5
	90	(84 - 114)	0.67	(0-10)	SW846 7470A	04/01/02	EWCEN1C6

Dilution Factor: 1
Analysis Time..: 21:56

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 #...: D2C130228 **Matrix.....:** WG
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D2C130228-001 **Prep Batch #...:** 2078272									
Aluminum									
	ND	2000	2110	ug/L	105		SW846 6010B	03/21-03/22/02	EWCEN1D1
	ND	2000	1900	ug/L	95	10	SW846 6010B	03/21-03/22/02	EWCEN1D2
			Dilution Factor: 1						
			Analysis Time..: 16:43						
Barium									
	90.3	2000	2170	ug/L	104		SW846 6010B	03/21-03/22/02	EWCEN1D3
	90.3	2000	2070	ug/L	99	4.6	SW846 6010B	03/21-03/22/02	EWCEN1D4
			Dilution Factor: 1						
			Analysis Time..: 23:10						
Beryllium									
	ND	50.0	50.1	ug/L	100		SW846 6010B	03/21-03/28/02	EWCEN1D5
	ND	50.0	45.3	ug/L	91	10	SW846 6010B	03/21-03/22/02	EWCEN1D6
			Dilution Factor: 1						
			Analysis Time..: 16:58						
Calcium									
	32300	50000	82600	ug/L	100		SW846 6010B	03/21-03/22/02	EWCEN1EQ
	32300	50000	74900 N	ug/L	85	9.7	SW846 6010B	03/21-03/22/02	EWCEN1ER
			Dilution Factor: 1						
			Analysis Time..: 16:43						
Cobalt									
	ND	500	459	ug/L	92		SW846 6010B	03/21-03/22/02	EWCEN1EJ
	ND	500	440	ug/L	88	4.2	SW846 6010B	03/21-03/22/02	EWCEN1EK
			Dilution Factor: 1						
			Analysis Time..: 23:10						
Copper									
	ND	250	251	ug/L	101		SW846 6010B	03/21-03/22/02	EWCEN1D7
	ND	250	239	ug/L	96	5.0	SW846 6010B	03/21-03/22/02	EWCEN1D8
			Dilution Factor: 1						
			Analysis Time..: 23:10						
Iron									
	26.4	1000	1080	ug/L	105		SW846 6010B	03/21-03/22/02	EWCEN1D9
	26.4	1000	969	ug/L	94	11	SW846 6010B	03/21-03/22/02	EWCEN1EA
			Dilution Factor: 1						
			Analysis Time..: 16:43						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D2C130228 **Matrix.....:** WG
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Magnesium									
	32800	50000	86600	ug/L	108		SW846 6010B	03/21-03/22/02	EWCEN1ET
	32800	50000	78500 N	ug/L	91	9.8	SW846 6010B	03/21-03/22/02	EWCEN1EU
			Dilution Factor: 1						
			Analysis Time..: 16:43						
Manganese									
	1.2	500	470	ug/L	94		SW846 6010B	03/21-03/22/02	EWCEN1EC
	1.2	500	451	ug/L	90	4.1	SW846 6010B	03/21-03/22/02	EWCEN1ED
			Dilution Factor: 1						
			Analysis Time..: 23:10						
Nickel									
	ND	500	512	ug/L	102		SW846 6010B	03/21-03/22/02	EWCEN1EE
	ND	500	490	ug/L	98	4.2	SW846 6010B	03/21-03/22/02	EWCEN1EF
			Dilution Factor: 1						
			Analysis Time..: 23:10						
Potassium									
	6110	50000	58200	ug/L	104		SW846 6010B	03/21-03/22/02	EWCEN[illegible]
	6110	50000	52700	ug/L	93	9.9	SW846 6010B	03/21-03/22/02	EWCEN1EW
			Dilution Factor: 1						
			Analysis Time..: 16:43						
Sodium									
	50800	50000	105000	ug/L	108		SW846 6010B	03/21-03/22/02	EWCEN1EX
	50800	50000	96000 N	ug/L	90	9.0	SW846 6010B	03/21-03/22/02	EWCEN1E0
			Dilution Factor: 1						
			Analysis Time..: 16:43						
Tin									
	ND	2000	2040	ug/L	102		SW846 6010B	03/21-03/28/02	EWCEN1EL
	ND	2000	1990	ug/L	99	2.6	SW846 6010B	03/21-03/27/02	EWCEN1EM
			Dilution Factor: 1						
			Analysis Time..: 16:58						
Vanadium									
	33.4	500	481	ug/L	90		SW846 6010B	03/21-03/22/02	EWCEN1EG
	33.4	500	461 N	ug/L	85	4.4	SW846 6010B	03/21-03/22/02	EWCEN1EH
			Dilution Factor: 1						
			Analysis Time..: 23:10						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D2C130228 **Matrix.....:** WG
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc									
	ND	500	433	ug/L	87		SW846 6010B	03/21-03/22/02	EWCEN1CJ
	ND	500	420	ug/L	84	3.0	SW846 6010B	03/21-03/22/02	EWCEN1CK
			Dilution Factor: 1						
			Analysis Time..: 23:10						
Molybdenum									
	3.0	1000	908	ug/L	91		SW846 6010B	03/21-03/22/02	EWCEN1EN
	3.0	1000	869 N	ug/L	87	4.4	SW846 6010B	03/21-03/22/02	EWCEN1EP
			Dilution Factor: 1						
			Analysis Time..: 23:10						

MS Lot-Sample #: D2C130228-001 **Prep Batch #...:** 2078476

Antimony									
	ND	200	201	ug/L	100		SW846 6020	03/25-03/27/02	EWCEN1CL
	ND	200	199	ug/L	100	0.64	SW846 6020	03/25-03/27/02	EWCEN1CM
			Dilution Factor: 1						
			Analysis Time..: 20:26						
Arsenic									
	4.6	200	201	ug/L	98		SW846 6020	03/25-03/27/02	EWCEN1CN
	4.6	200	199	ug/L	97	0.80	SW846 6020	03/25-03/27/02	EWCEN1CP
			Dilution Factor: 1						
			Analysis Time..: 20:26						
Cadmium									
	ND	200	201	ug/L	100		SW846 6020	03/25-03/27/02	EWCEN1CQ
	ND	200	200	ug/L	100	0.56	SW846 6020	03/25-03/27/02	EWCEN1CR
			Dilution Factor: 1						
			Analysis Time..: 20:26						
Chromium									
	1.1	200	199	ug/L	99		SW846 6020	03/25-03/27/02	EWCEN1C3
	1.1	200	197	ug/L	98	0.95	SW846 6020	03/25-03/27/02	EWCEN1C4
			Dilution Factor: 1						
			Analysis Time..: 20:26						
Lead									
	ND	200	206	ug/L	103		SW846 6020	03/25-03/27/02	EWCEN1CT
	ND	200	205	ug/L	102	0.37	SW846 6020	03/25-03/27/02	EWCEN1CU
			Dilution Factor: 1						
			Analysis Time..: 20:26						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D2C130228 **Matrix.....:** WG
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Selenium									
	0.21	200	186	ug/L	93		SW846 6020	03/25-03/27/02	EWCEN1CV
	0.21	200	189	ug/L	94	1.4	SW846 6020	03/25-03/27/02	EWCEN1CW
			Dilution Factor: 1						
			Analysis Time..: 20:26						
Silver									
	ND	200	178	ug/L	89		SW846 6020	03/25-03/27/02	EWCEN1CX
	ND	200	192	ug/L	96	7.6	SW846 6020	03/25-03/27/02	EWCEN1C0
			Dilution Factor: 1						
			Analysis Time..: 20:26						
Thallium									
	ND	200	201	ug/L	101		SW846 6020	03/25-03/27/02	EWCEN1C1
	ND	200	201	ug/L	101	0.02	SW846 6020	03/25-03/27/02	EWCEN1C2
			Dilution Factor: 1						
			Analysis Time..: 20:26						

MS Lot-Sample #: D2C130228-001 **Prep Batch #...:** 2085309

Mercury									
	ND	5.00	4.46	ug/L	89		SW846 7470A	04/01/02	EWCEN1C5
	ND	5.00	4.49	ug/L	90	0.67	SW846 7470A	04/01/02	EWCEN1C6
			Dilution Factor: 1						
			Analysis Time..: 21:56						

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 #...: D2C130228 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total		WO#:EWJ121AC-LCS/EWJ121AD-LCSD				LCS Lot-Sample#: D2C180000-516	
	97	(85 - 115)			SW846 9012A	03/18-03/20/02	2077516
	100	(85 - 115)	2.3	(0-20)	SW846 9012A	03/18-03/20/02	2077516
		Dilution Factor: 1					
Perchlorate		WO#:EWJ191AC-LCS/EWJ191AD-LCSD				LCS Lot-Sample#: D2C180000-520	
	115	(80 - 120)			EPA 314.0	03/15/02	2077520
	114	(80 - 120)	0.82	(0-20)	EPA 314.0	03/15/02	2077520
		Dilution Factor: 1					
Total Organic Halogens		WO#:EWP0X1AC-LCS/EWP0X1AD-LCSD				LCS Lot-Sample#: D2C210000-258	
	97	(76 - 109)			SW846 9020B	03/18-03/19/02	2080258
	99	(76 - 109)	2.3	(0-30)	SW846 9020B	03/18/02	2080258
		Dilution Factor: 1					
Total Organic Carbon		WO#:EXA931AC-LCS/EXA931AD-LCSD				LCS Lot-Sample#: D2D030000-358	
	109	(90 - 110)			SW846 9060	04/02-04/03/02	2093358
	104	(90 - 110)	4.8	(0-10)	SW846 9060	04/02-04/03/02	2093358
		Dilution Factor: 1					
Total Sulfide		WO#:EWPM31AC-LCS/EWPM31AD-LCSD				LCS Lot-Sample#: D2C210000-204	
	84	(70 - 130)			SW846 9030B/9034	03/19/02	2080204
	83	(70 - 130)	0.45	(0-20)	SW846 9030B/9034	03/19/02	2080204
		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 #...: D2C130228 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total		WO#:EWJ121AC-LCS/EWJ121AD-LCSD LCS Lot-Sample#: D2C180000-516						
	0.200	0.195	mg/L	97		SW846 9012A	03/18-03/20/02	2077516
	0.200	0.199	mg/L	100	2.3	SW846 9012A	03/18-03/20/02	2077516
			Dilution Factor: 1					
Perchlorate		WO#:EWJ191AC-LCS/EWJ191AD-LCSD LCS Lot-Sample#: D2C180000-520						
	200	231	ug/L	115		EPA 314.0	03/15/02	2077520
	200	229	ug/L	114	0.82	EPA 314.0	03/15/02	2077520
			Dilution Factor: 1					
Total Organic Halogens		WO#:EWP0X1AC-LCS/EWP0X1AD-LCSD LCS Lot-Sample#: D2C210000-258						
	100	97.0	ug/L	97		SW846 9020B	03/18-03/19/02	2080258
	100	99.3	ug/L	99	2.3	SW846 9020B	03/18/02	2080258
			Dilution Factor: 1					
Total Organic Carbon		WO#:EXA931AC-LCS/EXA931AD-LCSD LCS Lot-Sample#: D2D030000-358						
	25.0	27.3	mg/L	109		SW846 9060	04/02-04/03/02	209335
	25.0	26.0	mg/L	104	4.8	SW846 9060	04/02-04/03/02	209335
			Dilution Factor: 1					
Total Sulfide		WO#:EWPM31AC-LCS/EWPM31AD-LCSD LCS Lot-Sample#: D2C210000-204						
	21.1	17.6	mg/L	84		SW846 9030B/9034	03/19/02	2080204
	21.1	17.5	mg/L	83	0.45	SW846 9030B/9034	03/19/02	2080204
			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 #...: D2C130228 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total		Work Order #: EWJ121AA		MB Lot-Sample #:	D2C180000-516	
	ND	0.010	mg/L	SW846 9012A	03/18-03/20/02	2077516
		Dilution Factor: 1				
		Analysis Time..: 13:00				
Perchlorate		Work Order #: EWJ191AA		MB Lot-Sample #:	D2C180000-520	
	ND	20.0	ug/L	EPA 314.0	03/15/02	2077520
		Dilution Factor: 1				
		Analysis Time..: 07:23				
Total Organic Halogens		Work Order #: EWP0X1AA		MB Lot-Sample #:	D2C210000-258	
	ND	30.0	ug/L	SW846 9020B	03/18/02	2080258
		Dilution Factor: 1				
		Analysis Time..: 12:00				
Total Organic Carbon		Work Order #: EXA931AA		MB Lot-Sample #:	D2D030000-358	
	ND	1.0	mg/L	SW846 9060	04/02-04/03/02	2093358
		Dilution Factor: 1				
		Analysis Time..: 01:00				
Total Sulfide		Work Order #: EWPM31AA		MB Lot-Sample #:	D2C210000-204	
	ND	4.0	mg/L	SW846 9030B/9034	03/19/02	2080204
		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 EVALUATION REPORT

General Chemistry

Client Lot #...: D2C130228 **Matrix.....:** WG
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total		WO#: EWCEN1DL-MS/EWCEN1DM-MSD				MS Lot-Sample #: D2C130228-001	
	97	(85 - 115)			SW846 9012A	03/18-03/20/02	2077516
	96	(85 - 115)	1.3	(0-20)	SW846 9012A	03/18-03/20/02	2077516
		Dilution Factor: 1					
		Analysis Time..: 13:00					
Perchlorate		WO#: EWCEN1DX-MS/EWCEN1D0-MSD				MS Lot-Sample #: D2C130228-001	
	97	(80 - 120)			EPA 314.0	03/15-03/16/02	2077520
	96	(80 - 120)	0.31	(0-20)	EPA 314.0	03/15-03/16/02	2077520
		Dilution Factor: 1					
		Analysis Time..: 00:03					
Total Organic Halogens		WO#: EWCEN1DN-MS/EWCEN1DP-MSD				MS Lot-Sample #: D2C130228-001	
	94	(79 - 115)			SW846 9020B	03/18-03/19/02	2080258
	96	(79 - 115)	2.0	(0-18)	SW846 9020B	03/18-03/19/02	2080258
		Dilution Factor: 1					
		Analysis Time..: 12:00					
Total Organic Carbon		WO#: EWCEN1DT-MS/EWCEN1DU-MSD				MS Lot-Sample #: D2C130228-001	
	116 N	(90 - 110)			SW846 9060	04/02-04/03/02	2093358
	116 N	(90 - 110)	0.17	(0-10)	SW846 9060	04/02-04/03/02	2093358
		Dilution Factor: 1					
		Analysis Time..: 09:00					
Total Sulfide		WO#: EWCEN1DQ-MS/EWCEN1DR-MSD				MS Lot-Sample #: D2C130228-001	
	76	(70 - 130)			SW846 9030B/9034	03/19/02	2080204
	64 N	(70 - 130)	17	(0-20)	SW846 9030B/9034	03/19/02	2080204
		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 #...: D2C130228 **Matrix.....:** WG
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total			WO#: EWCEN1DL-MS/EWCEN1DM-MSD				MS Lot-Sample #: D2C130228-001		
	0.0065	0.100	0.104	mg/L	97		SW846 9012A	03/18-03/20/02	2077516
	0.0065	0.100	0.102	mg/L	96	1.3	SW846 9012A	03/18-03/20/02	2077516
			Dilution Factor: 1						
			Analysis Time..: 13:00						
Perchlorate			WO#: EWCEN1DX-MS/EWCEN1D0-MSD				MS Lot-Sample #: D2C130228-001		
	ND	100	96.6	ug/L	97		EPA 314.0	03/15-03/16/02	2077520
	ND	100	96.3	ug/L	96	0.31	EPA 314.0	03/15-03/16/02	2077520
			Dilution Factor: 1						
			Analysis Time..: 00:03						
Total Organic Halogens			WO#: EWCEN1DN-MS/EWCEN1DP-MSD				MS Lot-Sample #: D2C130228-001		
	4.5	100	98.0	ug/L	94		SW846 9020B	03/18-03/19/02	2080258
	4.5	100	100	ug/L	96	2.0	SW846 9020B	03/18-03/19/02	2080258
			Dilution Factor: 1						
			Analysis Time..: 12:00						
Total Organic Carbon			WO#: EWCEN1DT-MS/EWCEN1DU-MSD				MS Lot-Sample #: D2C130228-001		
	ND	25.0	29.1 N	mg/L	116		SW846 9060	04/02-04/03/02	2093358
	ND	25.0	29.2 N	mg/L	116	0.17	SW846 9060	04/02-04/03/02	2093358
			Dilution Factor: 1						
			Analysis Time..: 09:00						
Total Sulfide			WO#: EWCEN1DQ-MS/EWCEN1DR-MSD				MS Lot-Sample #: D2C130228-001		
	ND	21.1	16.6	mg/L	76		SW846 9030B/9	03/19/02	2080204
	ND	21.1	14.0 N	mg/L	64	17	SW846 9030B/9	03/19/02	2080204
			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

3-7 PC
D.S.
3/17

Project Name & Number	PACKING AND SHIPPING DETAILS	
Cannon Air Force Base, Ground Water Sampling 463536004	Packed and Sealed for Shipping by: F. Gebhardt	Seal Number: 243820
Sampling Location: Landfill-5, Cannon Air Force Base, NM	Delivered to Shipper by: F. Gebhardt	Airbill Number: 828073477804
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
03/12/2002	1315	CAFB - D	Ground-water	~~4~~ 51*	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 plus MS and MSD

Additional Comments: * Part of this sample is in 2 other coolers w/ seal no.s 243830. The VOC's for this sample are in a 4th cooler w/ seal no. 243840. 243870

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
Ralph Wilson III	to Fed Ex	03/12/02	1600	SEVERN TRENT SERVICES 4955 Yarrow Street Arvada, CO 80002 ph: (303) 736-0184 Attention: Karen Kuoppala	Condition of Contents
	Brown	3/13/02	0830		Contents Temperature
					Laboratory Project Number

U.S. GEOLOGICAL SURVEY, WATER RES RCES 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: F. Gebhardt — Seal Number: 243570
Team Leader: Project chief -- Fred Gebhardt	Delivered to Shipper by: F. Gebhardt — Airbill Number: 828073477804
	Sampling Status: ☐ Done ☒ Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
2002	1315	CAFB - D	Ground-water	~~X~~ 51*	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 plus MS and MSD

Additional Comments * Part of this sample is in 2 other coolers w/ seal no.'s 243820 & 243830. The VOC's for this sample are in a 4th cooler w/ seal no. 243840.

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
	Brown	3/13/02	0830	SEVERN TRENT SERVICES 4955 Yarrow Street Arvada, CO 80002 ph: (303) 736-0184 Attention: Karen Kuoppala	Condition of Contents
					Contents Temperature
					Laboratory Project Number

4.7c
DS
3/13

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: F. Gebhardt — Seal Number: 243830
Team Leader: Project chief -- Fred Gebhardt	Delivered to Shipper by: F. Gebhardt — Airbill Number: 828073477804
	Sampling Status: ☐ Done ☒ Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
03/12/2002	1315	CAFB - D	Ground-water	~~7~~ 51*	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 plus MS and MSD

Additional Comments: *Part of this sample is in 2 other coolers w/ seal no.'s 243820 & 243570. The VOCs for this sample are in a 4th cooler w/ seal no. 243840.

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 Fed Ex	03/12/02	1600	SEVERN TRENT SERVICES 4955 Yarrow Street Arvada, CO 80002 ph: (303) 736-0184 Attention: Karen Kuoppala	Condition of Contents
	[signature]	3/13/02	0830		Contents Temperature
					Laboratory Project Number

5.6°C
DGR
3/13

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: F. Gebhardt — Seal Number: 243850
Team Leader: Project chief -- Fred Gebhardt	Delivered to Shipper by: F. Gebhardt — Airbill Number: 828073477804
	Sampling Status: ☐ Done ☒ Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
03/12/2002	1320	CAFB - D - 1	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

Additional Comments: The VOC's for this sample are in another cooler w/ seal no. 243840.

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 Fed Ex	03/12/02	1600	SEVERN TRENT SERVICES 4955 Yarrow Street Arvada, CO 80002 ph: (303) 736-0184 Attention: Karen Kuoppala	Condition of Contents
	[signature]	3/13/02	0830		Contents Temperature
					Laboratory Project Number

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

5.4°C
D.S.
3/13

Project Name & Number	PACKING AND SHIPPING DETAILS	
Cannon Air Force Base, Ground Water Sampling 463536004	Packed and Sealed for Shipping by: F. Gebhardt	Seal Number: 243840
Sampling Location: Landfill-5, Cannon Air Force Base, NM	Delivered to Shipper by: F. Gebhardt	Airbill Number: 8280734778 04
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
03/12/2002	1110	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
"	1030	CAFB Q-TB	Field QC sample	3	SW 8260B (only)	Trip blank sample

Additional Comments: This cooler also contains VOC samples for CAFB-D and CAFB-D-1.

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
Ralph Wilcox III	to Fed Ex	03/12/02	1600	SEVERN TRENT SERVICES 4955 Yarrow Street Arvada, CO 80002 ph: (303) 736-0184 Attention: Karen Kuoppala	Condition of Contents
	[illegible]	3/13/02	0830		Contents Temperature
					Laboratory Project Number

STL Denver

Sample Receiving Checklist

Lot #: D2C130228 Date/Time Received: 3/13/02 0830

Company Name & Sampling Site: USGS-Cannon AFB

*Cooler #(s): 1 2 3 4 5

Temperatures (°C): 3.7 5.7 4.7 5.6 5.4

PM to Complete This Section: *Yes* *No*

Residual chlorine check required: ☐ ☑

Time Zone:

• EDT/EST • CDT/CST • MDT/MST • PDT/PST • OTHER 25228

Unpacking & Labeling Check Points:

N/A	Yes	No		Initials
☐	☑	☐	1. Cooler seals intact. (N/A if hand delivered)	
	☑	☐	2. Chain of custody present.	
	☐	☐	3. Bottles broken and/or are leaking, comment if yes. 1 x VOA	
	☐	☑	4. Multiphase samples present? If yes, comment below.	
			PHOTOGRAPH BROKEN BOTTLES/MULTIPHASE SAMPLES	
	☑	☐	5. Proper container & preservatives used (ref. Attachment D of SOP# DEN-QA-0003)	
☐	☑	☐	6. pH of all samples checked and meet requirements, note exceptions.	
	☑	☐	7. Chain of custody includes "received by" and "relinquished" by signatures, dates, and times.	
	☐	☑	8. Receipt date(s) > 48 hours past the collection date(s)? If yes, notify PA/PM.	
	☑	☐	9. Chain of custody agrees with bottle count, comment if no.	
	☑	☐	10. Chain of custody agrees with labels, comment if no.	
☐	☑	☐	11. VOA samples filled completely, comment if no.	
☐	☑	☐	12. VOA vials preserved, check label. Preservative ☑HCl ☑4±2°C ☐Sodium Thiosulfate	
	☐	☑	13. Did samples require preservation with sodium thiosulfate?	
☑	☐	☐	14. If yes to #12, did the samples contain residual chlorine?	
☑	☐	☐	15. Sediment present in dissolved/filtered bottles.	
	☐	☑	16. Are analyses with short holding times requested?	
	☐	☑	17. Was a quick Turn Around (TAT) requested?	
☑	☑	☐	17. Is extra sample volume provided for MS, MSD or matrix duplicates?	
			DOUBLECHECK METALS,SAMPLE LABELS & SUBCONTRACT	
☐	☑	☐	18. Subcontract COC signed and sent with samples to bottle prep?	
	☑	☐	19. Were sample labels double-checked by a second person?	
☑	☐	☐	20. Were sample bottles and COC double checked for dissolved/filtered metals by a second person?	
☐	☑	☐	21. If applicable, were AFCEE Metals placed in the walkin refrigerator?	

Document any problems or discrepancies and the actions taken to resolve them on a Condition Upon Receipt Anomaly Report (CUR).

QC DATA ASSOCIATION SUMMARY

D2C140285

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WG	SW846 9060		2095309	2095145
	WG	SW846 6020		2078476	2078290
	WG	SW846 9020B		2080258	2080099
	WG	SW846 7470A		2085309	2085179
	WG	SW846 8082		2079135	
	WG	SW846 8081A		2079121	
	WG	SW846 8260B		2085241	2085106
	WG	SW846 8270C		2079198	
	WG	SW846 8270C		2088308	
	WG	SW846 6010B		2078272	2078141
	WG	SW846 9012A		2080459	2080239
	WG	SW846 8151A		2079503	
	WG	SW846 8151A		2085450	
	WG	SW846 8280A		2078358	2078203
	WG	SW846 8310		2079128	
	WG	SW846 9030B/9034		2080204	2080068
	WG	EPA 314.0		2077520	2077255
002	WG	SW846 9060		2095309	2095145
	WG	SW846 6020		2078476	2078290
	WG	SW846 9020B		2080258	2080099
	WG	SW846 7470A		2085309	2085179
	WG	SW846 8082		2079135	
	WG	SW846 8081A		2079121	
	WG	SW846 8260B		2085241	2085106
	WG	SW846 8270C		2079198	
	WG	SW846 6010B		2078272	2078141
	WG	SW846 9012A		2080459	2080239
	WG	SW846 8151A		2079503	
	WG	SW846 8280A		2078358	2078203
	WG	SW846 8310		2079128	
	WG	SW846 9030B/9034		2080204	2080068
	WG	EPA 314.0		2077520	2077255
003	WG	SW846 9060		2095309	2095145
	WG	SW846 6020		2078476	2078290
	WG	SW846 9020B		2080258	2080099
	WG	SW846 7470A		2085309	2085179
	WG	SW846 8082		2079135	
	WG	SW846 8081A		2079121	
	WG	SW846 8260B		2085241	2085106
	WG	SW846 8270C		2079198	
	WG	SW846 6010B		2078272	2078141

(Continued on next page)

QC DATA ASSOCIATION SUMMARY

D2C140285

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
	WG	SW846 9012A		2080459	2080239
	WG	SW846 8151A		2079503	
	WG	SW846 8280A		2078358	2078203
	WG	SW846 8310		2079128	
	WG	SW846 9030B/9034		2080204	2080068
	WG	EPA 314.0		2077520	2077255
004	WG	SW846 9060		2095309	2095145
	WG	SW846 6020		2078476	2078290
	WG	SW846 9020B		2080258	2080099
	WG	SW846 7470A		2085309	2085179
	WG	SW846 8082		2079135	
	WG	SW846 8081A		2079121	
	WG	SW846 8260B		2085241	2085106
	WG	SW846 8270C		2079198	
	WG	SW846 6010B		2078272	2078141
	WG	SW846 9012A		2080459	2080239
	WG	SW846 8151A		2079503	
	WG	SW846 8280A		2078358	2078203
	WG	SW846 8310		2079128	
	WG	SW846 9030B/9034		2080204	2080068
	WG	EPA 314.0		2077520	2077255
005	WG	SW846 9060		2095309	2095145
	WG	SW846 6020		2078476	2078290
	WG	SW846 9020B		2080258	2080099
	WG	SW846 7470A		2085309	2085179
	WG	SW846 8082		2079135	
	WG	SW846 8081A		2079121	
	WG	SW846 8260B		2085241	2085106
	WG	SW846 8270C		2079198	
	WG	SW846 6010B		2078272	2078141
	WG	SW846 9012A		2080459	2080239
	WG	SW846 8151A		2079503	
	WG	SW846 8280A		2078358	2078203
	WG	SW846 8310		2079128	
	WG	SW846 9030B/9034		2080204	2080068
	WG	EPA 314.0		2077520	2077255
006	WQ	SW846 8260B		2085241	2085106

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D2C140285 **Work Order #...:** EWX331AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C260000-241 EWX331AD-LCSD
Prep Date.....: 03/25/02 **Analysis Date..:** 03/25/02
Prep Batch #...: 2085241 **Analysis Time..:** 10:56
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	**110**	**(79 - 119)**			**SW846 8260B**
	108	**(79 - 119)**	**2.3**	**(0-20)**	**SW846 8260B**
Benzene	**104**	**(79 - 119)**			**SW846 8260B**
	101	**(79 - 119)**	**3.6**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**104**	**(76 - 116)**			**SW846 8260B**
	105	**(76 - 116)**	**0.67**	**(0-20)**	**SW846 8260B**
Toluene	**107**	**(75 - 122)**			**SW846 8260B**
	110	**(75 - 122)**	**2.5**	**(0-20)**	**SW846 8260B**
Trichloroethene	**100**	**(81 - 121)**			**SW846 8260B**
	95	**(81 - 121)**	**4.9**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	93	(80 - 120)
	90	(80 - 120)
1,2-Dichloroethane-d4	81	(72 - 127)
	81	(72 - 127)
4-Bromofluorobenzene	92	(79 - 119)
	93	(79 - 119)
Toluene-d8	102	(79 - 119)
	103	(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 #...: D2C140285 Work Order #...: EWX331AC-LCS Matrix.....: WATER
LCS Lot-Sample#: D2C260000-241 EWX331AD-LCSD
Prep Date.....: 03/25/02 Analysis Date..: 03/25/02
Prep Batch #...: 2085241 Analysis Time..: 10:56
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethene	10.0	11.0	ug/L	110		SW846 8260B
	10.0	10.8	ug/L	108	2.3	SW846 8260B
Benzene	10.0	10.4	ug/L	104		SW846 8260B
	10.0	10.1	ug/L	101	3.6	SW846 8260B
Chlorobenzene	10.0	10.4	ug/L	104		SW846 8260B
	10.0	10.5	ug/L	105	0.67	SW846 8260B
Toluene	10.0	10.7	ug/L	107		SW846 8260B
	10.0	11.0	ug/L	110	2.5	SW846 8260B
Trichloroethene	10.0	10.0	ug/L	100		SW846 8260B
	10.0	9.52	ug/L	95	4.9	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	93	(80 - 120)
	90	(80 - 120)
1,2-Dichloroethane-d4	81	(72 - 127)
	81	(72 - 127)
4-Bromofluorobenzene	92	(79 - 119)
	93	(79 - 119)
Toluene-d8	102	(79 - 119)
	103	(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 #...: D2C140285 **Work Order #...:** EWX331AA **Matrix.....:** WATER
MB Lot-Sample #: D2C260000-241

Prep Date.....: 03/25/02 **Analysis Time..:** 11:46
Analysis Date..: 03/25/02 **Prep Batch #...:** 2085241
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	1.0	ug/L	SW846 8260B
Acetone	ND	10	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-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
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
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
Acrylonitrile	ND	20	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

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: D2C140285 **Work Order #...:** EWX331AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B
Iodomethane	ND	1.0	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
Acetonitrile	ND	20	ug/L	SW846 8260B
Acrolein	ND	20	ug/L	SW846 8260B
Chloroprene	ND	1.0	ug/L	SW846 8260B
Allyl chloride	ND	2.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	2.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	1.0	ug/L	SW846 8260B
Ethyl methacrylate	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

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(80 - 120)
1,2-Dichloroethane-d4	83	(72 - 127)
4-Bromofluorobenzene	93	(79 - 119)
Toluene-d8	105	(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 #: D2C260000-241 B **Work Order #:** EWX331AA **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 #...: D2C140285 **Work Order #...:** EWDM41D4-MS **Matrix.....:** WATER
MS Lot-Sample #: D2C140173-001 EWDM41D5-MSD
Date Sampled...: 03/13/02 10:42 **Date Received..:** 03/14/02
Prep Date.....: 03/25/02 **Analysis Date..:** 03/25/02
Prep Batch #...: 2085241 **Analysis Time..:** 14:28
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	**107**	**(79 - 119)**			**SW846 8260B**
	109	**(79 - 119)**	**1.8**	**(0-20)**	**SW846 8260B**
Benzene	**104**	**(79 - 119)**			**SW846 8260B**
	105	**(79 - 119)**	**1.2**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**108**	**(76 - 116)**			**SW846 8260B**
	110	**(76 - 116)**	**1.6**	**(0-20)**	**SW846 8260B**
Toluene	**110**	**(75 - 122)**			**SW846 8260B**
	111	**(75 - 122)**	**1.4**	**(0-20)**	**SW846 8260B**
Trichloroethene	**96**	**(81 - 121)**			**SW846 8260B**
	98	**(81 - 121)**	**2.4**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(80 - 120)
	92	(80 - 120)
1,2-Dichloroethane-d4	85	(72 - 127)
	84	(72 - 127)
4-Bromofluorobenzene	93	(79 - 119)
	92	(79 - 119)
Toluene-d8	103	(79 - 119)
	103	(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 #...: D2C140285 **Work Order #...:** EWDM41D4-MS **Matrix.....:** WATER
MS Lot-Sample #: D2C140173-001 EWDM41D5-MSD
Date Sampled...: 03/13/02 10:42 **Date Received..:** 03/14/02
Prep Date.....: 03/25/02 **Analysis Date..:** 03/25/02
Prep Batch #...: 2085241 **Analysis Time..:** 14:28
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1-Dichloroethene	**ND**	**10.0**	**10.7**	**ug/L**	**107**		**SW846 8260B**
	ND	**10.0**	**10.9**	**ug/L**	**109**	**1.8**	**SW846 8260B**
Benzene	**0.28**	**10.0**	**10.7**	**ug/L**	**104**		**SW846 8260B**
	0.28	**10.0**	**10.8**	**ug/L**	**105**	**1.2**	**SW846 8260B**
Chlorobenzene	**0.35**	**10.0**	**11.2**	**ug/L**	**108**		**SW846 8260B**
	0.35	**10.0**	**11.4**	**ug/L**	**110**	**1.6**	**SW846 8260B**
Toluene	**ND**	**10.0**	**11.0**	**ug/L**	**110**		**SW846 8260B**
	ND	**10.0**	**11.1**	**ug/L**	**111**	**1.4**	**SW846 8260B**
Trichloroethene	**ND**	**10.0**	**9.61**	**ug/L**	**96**		**SW846 8260B**
	ND	**10.0**	**9.84**	**ug/L**	**98**	**2.4**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(80 - 120)
	92	(80 - 120)
1,2-Dichloroethane-d4	85	(72 - 127)
	84	(72 - 127)
4-Bromofluorobenzene	93	(79 - 119)
	92	(79 - 119)
Toluene-d8	103	(79 - 119)
	103	(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 #...: D2C140285 Work Order #...: EWMF31AC-LCS Matrix.....: WATER
LCS Lot-Sample#: D2C200000-198 EWMF31AD-LCSD
Prep Date.....: 03/20/02 Analysis Date..: 03/26/02
Prep Batch #...: 2079198 Analysis Time..: 11:35
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Acenaphthene	74	(52 - 93)			SW846 8270C
	75	(52 - 93)	0.33	(0-28)	SW846 8270C
4-Chloro-3-methylphenol	75	(55 - 95)			SW846 8270C
	75	(55 - 95)	1.1	(0-34)	SW846 8270C
2-Chlorophenol	73	(52 - 92)			SW846 8270C
	77	(52 - 92)	5.5	(0-33)	SW846 8270C
1,4-Dichlorobenzene	69	(38 - 87)			SW846 8270C
	70	(38 - 87)	1.2	(0-37)	SW846 8270C
2,4-Dinitrotoluene	81	(56 - 107)			SW846 8270C
	89	(56 - 107)	8.6	(0-30)	SW846 8270C
4-Nitrophenol	69	(41 - 108)			SW846 8270C
	72	(41 - 108)	4.8	(0-40)	SW846 8270C
N-Nitrosodi-n-propyl-amine	74	(48 - 88)			SW846 8270C
	74	(48 - 88)	1.2	(0-33)	SW846 8270C
Pentachlorophenol	75	(42 - 105)			SW846 8270C
	74	(42 - 105)	1.1	(0-34)	SW846 8270C
Phenol	74	(50 - 90)			SW846 8270C
	76	(50 - 90)	3.3	(0-31)	SW846 8270C
Pyrene	73	(54 - 104)			SW846 8270C
	73	(54 - 104)	0.98	(0-31)	SW846 8270C
1,2,4-Trichloro-benzene	70	(43 - 88)			SW846 8270C
	69	(43 - 88)	1.3	(0-35)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	76	(51 - 99)
	78	(51 - 99)
Phenol-d5	77	(52 - 99)
	79	(52 - 99)
Nitrobenzene-d5	80	(57 - 97)
	82	(57 - 97)
2-Fluorobiphenyl	72	(49 - 98)
	71	(49 - 98)
2,4,6-Tribromophenol	81	(53 - 108)
	76	(53 - 108)
Terphenyl-d14	78	(38 - 119)

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: D2C140285 **Work Order #...:** EWMF31AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C200000-198 EWMF31AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
	77	(38 - 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 Semivolatiles

Client Lot #...: D2C140285 Work Order #...: EWMF31AC-LCS Matrix.....: WATER
LCS Lot-Sample#: D2C200000-198 EWMF31AD-LCSD
Prep Date.....: 03/20/02 Analysis Date..: 03/26/02
Prep Batch #...: 2079198 Analysis Time..: 11:35
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Acenaphthene	100	74.3	ug/L	74		SW846 8270C
	100	74.6	ug/L	75	0.33	SW846 8270C
4-Chloro-3-methylphenol	150	112	ug/L	75		SW846 8270C
	150	113	ug/L	75	1.1	SW846 8270C
2-Chlorophenol	150	110	ug/L	73		SW846 8270C
	150	116	ug/L	77	5.5	SW846 8270C
1,4-Dichlorobenzene	100	68.8	ug/L	69		SW846 8270C
	100	69.6	ug/L	70	1.2	SW846 8270C
2,4-Dinitrotoluene	100	81.3	ug/L	81		SW846 8270C
	100	88.5	ug/L	89	8.6	SW846 8270C
4-Nitrophenol	150	103	ug/L	69		SW846 8270C
	150	108	ug/L	72	4.8	SW846 8270C
N-Nitrosodi-n-propyl-amine	100	73.5	ug/L	74		SW846 8270C
	100	74.4	ug/L	74	1.2	SW846 8270C
Pentachlorophenol	150	112	ug/L	75		SW846 8270C
	150	111	ug/L	74	1.1	SW846 8270C
Phenol	150	111	ug/L	74		SW846 8270C
	150	114	ug/L	76	3.3	SW846 8270C
Pyrene	100	73.4	ug/L	73		SW846 8270C
	100	72.7	ug/L	73	0.98	SW846 8270C
1,2,4-Trichloro-benzene	100	69.7	ug/L	70		SW846 8270C
	100	68.8	ug/L	69	1.3	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	76	(51 - 99)
	78	(51 - 99)
Phenol-d5	77	(52 - 99)
	79	(52 - 99)
Nitrobenzene-d5	80	(57 - 97)
	82	(57 - 97)
2-Fluorobiphenyl	72	(49 - 98)
	71	(49 - 98)
2,4,6-Tribromophenol	81	(53 - 108)
	76	(53 - 108)
Terphenyl-d14	78	(38 - 119)

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: D2C140285 **Work Order #...:** EWMF31AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C200000-198 EWMF31AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
	77	(38 - 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 Semivolatiles

Client Lot #...: D2C140285 **Work Order #...:** EWMF31AA **Matrix.....:** WATER
MB Lot-Sample #: D2C200000-198

Prep Date.....: 03/20/02 **Analysis Time..:** 11:11
Analysis Date..: 03/26/02 **Prep Batch #...:** 2079198
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acenaphthene	ND	10	ug/L	SW846 8270C
Acenaphthylene	ND	10	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
Anthracene	ND	10	ug/L	SW846 8270C
Benzo(a)anthracene	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(ghi)perylene	ND	10	ug/L	SW846 8270C
Benzo(a)pyrene	ND	10	ug/L	SW846 8270C
Benzyl alcohol	ND	10	ug/L	SW846 8270C
bis(2-Chloroethoxy) methane	ND	10	ug/L	SW846 8270C
bis(2-Chloroethyl)-ether	ND	10	ug/L	SW846 8270C
bis(2-Ethylhexyl) phthalate	ND	10	ug/L	SW846 8270C
4-Bromophenyl phenyl ether	ND	10	ug/L	SW846 8270C
Butyl benzyl phthalate	ND	10	ug/L	SW846 8270C
4-Chloroaniline	ND	10	ug/L	SW846 8270C
4-Chloro-3-methylphenol	ND	10	ug/L	SW846 8270C
2-Chloronaphthalene	ND	10	ug/L	SW846 8270C
2-Chlorophenol	ND	10	ug/L	SW846 8270C
4-Chlorophenyl phenyl ether	ND	10	ug/L	SW846 8270C
Chrysene	ND	10	ug/L	SW846 8270C
Dibenz(a,h)anthracene	ND	10	ug/L	SW846 8270C
Dibenzofuran	ND	10	ug/L	SW846 8270C
Di-n-butyl phthalate	ND	10	ug/L	SW846 8270C
1,2-Dichlorobenzene	ND	10	ug/L	SW846 8270C
1,3-Dichlorobenzene	ND	10	ug/L	SW846 8270C
1,4-Dichlorobenzene	ND	10	ug/L	SW846 8270C
3,3'-Dichlorobenzidine	ND	50	ug/L	SW846 8270C
2,4-Dichlorophenol	ND	10	ug/L	SW846 8270C
2,6-Dichlorophenol	ND	10	ug/L	SW846 8270C
Diethyl phthalate	ND	10	ug/L	SW846 8270C
-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 #...: D2C140285 **Work Order #...:** EWMF31AA **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
2,4-Dimethylphenol	ND	10	ug/L	SW846 8270C
Dimethyl phthalate	ND	10	ug/L	SW846 8270C
Di-n-octyl phthalate	ND	10	ug/L	SW846 8270C
1,3-Dinitrobenzene	ND	10	ug/L	SW846 8270C
2,4-Dinitrotoluene	ND	10	ug/L	SW846 8270C
2,6-Dinitrotoluene	ND	10	ug/L	SW846 8270C
4,6-Dinitro-2-methylphenol	ND	50	ug/L	SW846 8270C
2,4-Dinitrophenol	ND	50	ug/L	SW846 8270C
Diphenylamine	ND	10	ug/L	SW846 8270C
Ethyl methanesulfonate	ND	10	ug/L	SW846 8270C
Fluoranthene	ND	10	ug/L	SW846 8270C
Fluorene	ND	10	ug/L	SW846 8270C
Hexachlorobenzene	ND	10	ug/L	SW846 8270C
Hexachlorobutadiene	ND	10	ug/L	SW846 8270C
Hexachlorocyclopentadiene	ND	50	ug/L	SW846 8270C
Hexachloroethane	ND	10	ug/L	SW846 8270C
Hexachloropropene	ND	100	ug/L	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	SW846 8270C
Isophorone	ND	10	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
2-Methylnaphthalene	ND	10	ug/L	SW846 8270C
2-Methylphenol	ND	10	ug/L	SW846 8270C
3-Methylphenol	ND	10	ug/L	SW846 8270C
4-Methylphenol	ND	10	ug/L	SW846 8270C
Naphthalene	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
2-Nitroaniline	ND	50	ug/L	SW846 8270C
3-Nitroaniline	ND	50	ug/L	SW846 8270C
4-Nitroaniline	ND	50	ug/L	SW846 8270C
Nitrobenzene	ND	10	ug/L	SW846 8270C
2-Nitrophenol	ND	10	ug/L	SW846 8270C
4-Nitrophenol	ND	50	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-Nitrosodi-n-propylamine	ND	10	ug/L	SW846 8270C

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D2C140285 **Work Order #...:** EWMF31AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
N-Nitrosodiphenylamine	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
Pentachlorophenol	ND	50	ug/L	SW846 8270C
Phenacetin	ND	20	ug/L	SW846 8270C
Phenanthrene	ND	10	ug/L	SW846 8270C
Phenol	ND	10	ug/L	SW846 8270C
2-Picoline	ND	20	ug/L	SW846 8270C
Pronamide	ND	20	ug/L	SW846 8270C
Pyrene	ND	10	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
1,2,4-Trichloro-benzene	ND	10	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
1,3,5-Trinitrobenzene	ND	50	ug/L	SW846 8270C
Aramite	ND	20	ug/L	SW846 8270C
2,2'-oxybis(1-Chloropropa	ND	10	ug/L	SW846 8270C
2-sec-Butyl-4,6-dinitro-phenol	ND	20	ug/L	SW846 8270C
2-Toluidine	ND	10	ug/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	75	(51 - 99)
Phenol-d5	76	(52 - 99)
Nitrobenzene-d5	77	(57 - 97)
2-Fluorobiphenyl	70	(49 - 98)
2,4,6-Tribromophenol	75	(53 - 108)
Terphenyl-d14	76	(38 - 119)

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 #: D2C200000-198 B **Work Order #:** EWMF31AA **Matrix:** WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		12 J	M	4.0029	ug/L
Unknown		15 J	M	4.7895	ug/L
1-Propene, 1,1,2-trichloro-	21400-25-9	37 J	M	4.8586	ug/L

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: D2C140285 Work Order #...: EW61G1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: D2C290000-308 EW61G1AD-LCSD
Prep Date.....: 03/29/02 Analysis Date..: 04/03/02
Prep Batch #...: 2088308 Analysis Time..: 12:56
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Acenaphthene	76	(52 - 93)			SW846 8270C
	73	(52 - 93)	4.4	(0-28)	SW846 8270C
4-Chloro-3-methylphenol	73	(55 - 95)			SW846 8270C
	74	(55 - 95)	2.0	(0-34)	SW846 8270C
2-Chlorophenol	75	(52 - 92)			SW846 8270C
	70	(52 - 92)	6.8	(0-33)	SW846 8270C
1,4-Dichlorobenzene	70	(38 - 87)			SW846 8270C
	68	(38 - 87)	2.8	(0-37)	SW846 8270C
2,4-Dinitrotoluene	78	(56 - 107)			SW846 8270C
	73	(56 - 107)	6.7	(0-30)	SW846 8270C
4-Nitrophenol	60	(41 - 108)			SW846 8270C
	56	(41 - 108)	7.6	(0-40)	SW846 8270C
N-Nitrosodi-n-propyl-amine	72	(48 - 88)			SW846 8270C
	71	(48 - 88)	1.5	(0-33)	SW846 8270C
Pentachlorophenol	59	(42 - 105)			SW846 8270C
	64	(42 - 105)	7.5	(0-34)	SW846 8270C
Phenol	72	(50 - 90)			SW846 8270C
	69	(50 - 90)	4.3	(0-31)	SW846 8270C
Pyrene	77	(54 - 104)			SW846 8270C
	75	(54 - 104)	3.3	(0-31)	SW846 8270C
1,2,4-Trichloro-benzene	73	(43 - 88)			SW846 8270C
	69	(43 - 88)	5.1	(0-35)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	74	(51 - 99)
	69	(51 - 99)
Phenol-d5	76	(52 - 99)
	72	(52 - 99)
Nitrobenzene-d5	82	(57 - 97)
	77	(57 - 97)
2-Fluorobiphenyl	78	(49 - 98)
	66	(49 - 98)
2,4,6-Tribromophenol	75	(53 - 108)
	72	(53 - 108)
Terphenyl-d14	81	(38 - 119)

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: D2C140285 **Work Order #...:** EW61G1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C290000-308 EW61G1AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
	77	(38 - 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 Semivolatiles

Client Lot #...: D2C140285 Work Order #...: EW61G1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: D2C290000-308 EW61G1AD-LCSD
Prep Date.....: 03/29/02 Analysis Date..: 04/03/02
Prep Batch #...: 2088308 Analysis Time..: 12:56
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Acenaphthene	100	76.0	ug/L	76		SW846 8270C
	100	72.8	ug/L	73	4.4	SW846 8270C
4-Chloro-3-methylphenol	150	109	ug/L	73		SW846 8270C
	150	111	ug/L	74	2.0	SW846 8270C
2-Chlorophenol	150	113	ug/L	75		SW846 8270C
	150	105	ug/L	70	6.8	SW846 8270C
1,4-Dichlorobenzene	100	70.0	ug/L	70		SW846 8270C
	100	68.1	ug/L	68	2.8	SW846 8270C
2,4-Dinitrotoluene	100	77.9	ug/L	78		SW846 8270C
	100	72.9	ug/L	73	6.7	SW846 8270C
4-Nitrophenol	150	89.9	ug/L	60		SW846 8270C
	150	83.3	ug/L	56	7.6	SW846 8270C
N-Nitrosodi-n-propyl-amine	100	72.4	ug/L	72		SW846 8270C
	100	71.3	ug/L	71	1.5	SW846 8270C
Pentachlorophenol	150	88.6	ug/L	59		SW846 8270C
	150	95.5	ug/L	64	7.5	SW846 8270C
Phenol	150	109	ug/L	72		SW846 8270C
	150	104	ug/L	69	4.3	SW846 8270C
Pyrene	100	77.1	ug/L	77		SW846 8270C
	100	74.6	ug/L	75	3.3	SW846 8270C
1,2,4-Trichloro-benzene	100	73.0	ug/L	73		SW846 8270C
	100	69.3	ug/L	69	5.1	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	74	(51 - 99)
	69	(51 - 99)
Phenol-d5	76	(52 - 99)
	72	(52 - 99)
Nitrobenzene-d5	82	(57 - 97)
	77	(57 - 97)
2-Fluorobiphenyl	78	(49 - 98)
	66	(49 - 98)
2,4,6-Tribromophenol	75	(53 - 108)
	72	(53 - 108)
Terphenyl-d14	81	(38 - 119)

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: D2C140285 **Work Order #...:** EW61G1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C290000-308 EW61G1AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
	77	(38 - 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 Semivolatiles

Client Lot #...: D2C140285 **Work Order #...:** EW61G1AA **Matrix.....:** WATER
MB Lot-Sample #: D2C290000-308

Prep Date.....: 03/29/02 **Analysis Time..:** 12:32
Analysis Date..: 04/03/02 **Prep Batch #...:** 2088308
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
bis(2-Chloroethoxy) methane	ND	10	ug/L	SW846 8270C
bis(2-Chloroethyl)-ether	ND	10	ug/L	SW846 8270C
bis(2-Ethylhexyl) phthalate	ND	10	ug/L	SW846 8270C
Acenaphthene	ND	10	ug/L	SW846 8270C
Acenaphthylene	ND	10	ug/L	SW846 8270C
Anthracene	ND	10	ug/L	SW846 8270C
Benzo(a)anthracene	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(ghi)perylene	ND	10	ug/L	SW846 8270C
Benzo(a)pyrene	ND	10	ug/L	SW846 8270C
Benzyl alcohol	ND	10	ug/L	SW846 8270C
4-Bromophenyl phenyl ether	ND	10	ug/L	SW846 8270C
Butyl benzyl phthalate	ND	10	ug/L	SW846 8270C
4-Chloroaniline	ND	10	ug/L	SW846 8270C
4-Chloro-3-methylphenol	ND	10	ug/L	SW846 8270C
2-Chloronaphthalene	ND	10	ug/L	SW846 8270C
2-Chlorophenol	ND	10	ug/L	SW846 8270C
4-Chlorophenyl phenyl ether	ND	10	ug/L	SW846 8270C
Chrysene	ND	10	ug/L	SW846 8270C
Dibenz(a,h)anthracene	ND	10	ug/L	SW846 8270C
Dibenzofuran	ND	10	ug/L	SW846 8270C
Di-n-butyl phthalate	ND	10	ug/L	SW846 8270C
1,2-Dichlorobenzene	ND	10	ug/L	SW846 8270C
1,3-Dichlorobenzene	ND	10	ug/L	SW846 8270C
1,4-Dichlorobenzene	ND	10	ug/L	SW846 8270C
3,3'-Dichlorobenzidine	ND	50	ug/L	SW846 8270C
2,4-Dichlorophenol	ND	10	ug/L	SW846 8270C
Diethyl phthalate	ND	10	ug/L	SW846 8270C
2,4-Dimethylphenol	ND	10	ug/L	SW846 8270C
Dimethyl phthalate	ND	10	ug/L	SW846 8270C
Di-n-octyl phthalate	ND	10	ug/L	SW846 8270C
4,6-Dinitro-2-methylphenol	ND	50	ug/L	SW846 8270C
2,4-Dinitrophenol	ND	50	ug/L	SW846 8270C
2,4-Dinitrotoluene	ND	10	ug/L	SW846 8270C

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D2C140285 **Work Order #...:** EW61G1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
2,6-Dinitrotoluene	ND	10	ug/L	SW846 8270C
Fluoranthene	ND	10	ug/L	SW846 8270C
Fluorene	ND	10	ug/L	SW846 8270C
Hexachlorobenzene	ND	10	ug/L	SW846 8270C
Hexachlorobutadiene	ND	10	ug/L	SW846 8270C
Hexachlorocyclopenta-diene	ND	50	ug/L	SW846 8270C
Hexachloroethane	ND	10	ug/L	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	SW846 8270C
Isophorone	ND	10	ug/L	SW846 8270C
2-Methylnaphthalene	ND	10	ug/L	SW846 8270C
2-Methylphenol	ND	10	ug/L	SW846 8270C
3-Methylphenol	ND	10	ug/L	SW846 8270C
4-Methylphenol	ND	10	ug/L	SW846 8270C
Naphthalene	ND	10	ug/L	SW846 8270C
2-Nitroaniline	ND	50	ug/L	SW846 8270C
3-Nitroaniline	ND	50	ug/L	SW846 8270C
4-Nitroaniline	ND	50	ug/L	SW846 8270C
Nitrobenzene	ND	10	ug/L	SW846 8270C
2-Nitrophenol	ND	10	ug/L	SW846 8270C
4-Nitrophenol	ND	50	ug/L	SW846 8270C
N-Nitrosodimethylamine	ND	10	ug/L	SW846 8270C
N-Nitrosodi-n-propyl-amine	ND	10	ug/L	SW846 8270C
N-Nitrosodiphenylamine	ND	10	ug/L	SW846 8270C
Pentachlorophenol	ND	50	ug/L	SW846 8270C
Phenanthrene	ND	10	ug/L	SW846 8270C
Phenol	ND	10	ug/L	SW846 8270C
Pyrene	ND	10	ug/L	SW846 8270C
Pyridine	ND	20	ug/L	SW846 8270C
1,2,4,5-Tetrachloro-benzene	ND	10	ug/L	SW846 8270C
1,2,4-Trichloro-benzene	ND	10	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
2,2'-oxybis(1-Chloropropa	ND	10	ug/L	SW846 8270C
Aniline	ND	10	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
2,6-Dichlorophenol	ND	10	ug/L	SW846 8270C
4-Dimethylaminoazobenzene	ND	20	ug/L	SW846 8270C

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D2C140285 **Work Order #...:** EW61G1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
7,12-Dimethylbenz(a)-anthracene	ND	20	ug/L	SW846 8270C
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
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-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
Safrole	ND	20	ug/L	SW846 8270C
2,3,4,6-Tetrachlorophenol	ND	50	ug/L	SW846 8270C
1,3,5-Trinitrobenzene	ND	50	ug/L	SW846 8270C
Aramite	ND	20	ug/L	SW846 8270C
2-sec-Butyl-4,6-dinitro-phenol	ND	20	ug/L	SW846 8270C
2-Toluidine	ND	10	ug/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	71	(51 - 99)
Phenol-d5	74	(52 - 99)
Nitrobenzene-d5	77	(57 - 97)
2-Fluorobiphenyl	70	(49 - 98)
2,4,6-Tribromophenol	58	(53 - 108)
Terphenyl-d14	76	(38 - 119)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: D2C140285 **Work Order #...:** EW61G1AA **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 #: D2C290000-308 B **Work Order #:** EW61G1AA **Matrix:** WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		4.1 J	M	3.5027	ug/L
Unknown		4.1 J	M	3.6621	ug/L
Unknown		4.5 J	M	3.6993	ug/L
Unknown		26 J	M	3.9172	ug/L
Unknown		6.4 J	M	4.7197	ug/L
1-Propene, 1,1,2-trichloro-	21400-25-9	17 J	M	4.7888	ug/L

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: D2C140285 **Work Order #...:** EWL751AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C200000-121 EWL751AD-LCSD
Prep Date.....: 03/20/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2079121 **Analysis Time..:** 12:21
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
4,4'-DDT	**104**	**(68 - 147)**			**SW846 8081A**
	92	**(68 - 147)**	**12**	**(0-30)**	**SW846 8081A**
Aldrin	**88**	**(55 - 137)**			**SW846 8081A**
	78	**(55 - 137)**	**12**	**(0-30)**	**SW846 8081A**
Dieldrin	**98**	**(68 - 146)**			**SW846 8081A**
	87	**(68 - 146)**	**13**	**(0-30)**	**SW846 8081A**
Endrin	**104**	**(66 - 143)**			**SW846 8081A**
	91	**(66 - 143)**	**14**	**(0-30)**	**SW846 8081A**
gamma-BHC (Lindane)	**95**	**(68 - 142)**			**SW846 8081A**
	85	**(68 - 142)**	**12**	**(0-30)**	**SW846 8081A**
Heptachlor	**95**	**(59 - 143)**			**SW846 8081A**
	85	**(59 - 143)**	**12**	**(0-30)**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	109	(15 - 162)
	97	(15 - 162)
Tetrachloro-m-xylene	100	(49 - 133)
	86	(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 #...: D2C140285 Work Order #...: EWL751AC-LCS Matrix.....: WATER
LCS Lot-Sample#: D2C200000-121 EWL751AD-LCSD
Prep Date.....: 03/20/02 Analysis Date..: 03/22/02
Prep Batch #...: 2079121 Analysis Time..: 12:21
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
4,4'-DDT	**0.500**	**0.522**	**ug/L**	**104**		**SW846 8081A**
	0.500	**0.460**	**ug/L**	**92**	**12**	**SW846 8081A**
Aldrin	**0.500**	**0.438**	**ug/L**	**88**		**SW846 8081A**
	0.500	**0.389**	**ug/L**	**78**	**12**	**SW846 8081A**
Dieldrin	**0.500**	**0.492**	**ug/L**	**98**		**SW846 8081A**
	0.500	**0.434**	**ug/L**	**87**	**13**	**SW846 8081A**
Endrin	**0.500**	**0.522**	**ug/L**	**104**		**SW846 8081A**
	0.500	**0.453**	**ug/L**	**91**	**14**	**SW846 8081A**
gamma-BHC (Lindane)	**0.500**	**0.476**	**ug/L**	**95**		**SW846 8081A**
	0.500	**0.423**	**ug/L**	**85**	**12**	**SW846 8081A**
Heptachlor	**0.500**	**0.475**	**ug/L**	**95**		**SW846 8081A**
	0.500	**0.423**	**ug/L**	**85**	**12**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	109	(15 - 162)
	97	(15 - 162)
Tetrachloro-m-xylene	100	(49 - 133)
	86	(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 #...: D2C140285 **Work Order #...:** EWL751AA **Matrix.....:** WATER
MB Lot-Sample #: D2C200000-121

Prep Date.....: 03/20/02 **Analysis Time..:** 16:40
Analysis Date..: 03/22/02 **Prep Batch #...:** 2079121
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
delta-BHC	ND	0.050	ug/L	SW846 8081A
gamma-BHC (Lindane)	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
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
Methoxychlor	ND	0.10	ug/L	SW846 8081A
Toxaphene	ND	2.0	ug/L	SW846 8081A
Isodrin	ND	0.10	ug/L	SW846 8081A
Kepone	ND	1.0	ug/L	SW846 8081A
alpha-Chlordane	ND	0.050	ug/L	SW846 8081A
gamma-Chlordane	ND	0.050	ug/L	SW846 8081A
Diallate	ND	1.0	ug/L	SW846 8081A
Endrin ketone	ND	0.050	ug/L	SW846 8081A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	107	(15 - 162)
Tetrachloro-m-xylene	94	(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 #...: D2C140285 **Work Order #...:** EWL801AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C200000-135 EWL801AD-LCSD
Prep Date.....: 03/20/02 **Analysis Date..:** 03/21/02
Prep Batch #...: 2079135 **Analysis Time..:** 17:20
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aroclor 1016	**95**	**(65 - 131)**			**SW846 8082**
	113	**(65 - 131)**	**17**	**(0-30)**	**SW846 8082**
Aroclor 1260	**81**	**(55 - 139)**			**SW846 8082**
	96	**(55 - 139)**	**17**	**(0-30)**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	107	(41 - 107)
	102	(41 - 107)
Decachlorobiphenyl	98	(46 - 131)
	120	(46 - 131)

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 #...: D2C140285 **Work Order #...:** EWL801AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C200000-135 EWL801AD-LCSD
Prep Date.....: 03/20/02 **Analysis Date..:** 03/21/02
Prep Batch #...: 2079135 **Analysis Time..:** 17:20
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Aroclor 1016	**1.00**	**0.952**	**ug/L**	**95**		**SW846 8082**
	1.00	**1.13**	**ug/L**	**113**	**17**	**SW846 8082**
Aroclor 1260	**1.00**	**0.810**	**ug/L**	**81**		**SW846 8082**
	1.00	**0.959**	**ug/L**	**96**	**17**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	107	(41 - 107)
	102	(41 - 107)
Decachlorobiphenyl	98	(46 - 131)
	120	(46 - 131)

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 #...: D2C140285 **Work Order #...:** EWL801AA **Matrix.....:** WATER
MB Lot-Sample #: D2C200000-135

Prep Date.....: 03/20/02 **Analysis Time..:** 16:52
Analysis Date..: 03/21/02 **Prep Batch #...:** 2079135
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
Tetrachloro-m-xylene	66	(41 - 107)
Decachlorobiphenyl	58	(46 - 131)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: D2C140285 **Work Order #...:** EWNWJ1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C200000-503 EWNWJ1AD-LCSD
Prep Date.....: 03/20/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2079503 **Analysis Time..:** 03:51
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2,4-D	**61**	**(20 - 133)**			**SW846 8151A**
	61	**(20 - 133)**	**0.63**	**(0-30)**	**SW846 8151A**
2,4,5-TP (Silvex)	**77**	**(23 - 146)**			**SW846 8151A**
	77	**(23 - 146)**	**0.65**	**(0-30)**	**SW846 8151A**
2,4,5-T	**68**	**(20 - 155)**			**SW846 8151A**
	65	**(20 - 155)**	**5.0**	**(0-30)**	**SW846 8151A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	70	(20 - 150)
	65	(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 #...: D2C140285 Work Order #...: EWNWJ1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: D2C200000-503 EWNWJ1AD-LCSD
Prep Date.....: 03/20/02 Analysis Date..: 03/26/02
Prep Batch #...: 2079503 Analysis Time..: 03:51
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
2,4-D	8.00	4.90	ug/L	61		SW846 8151A
	8.00	4.87	ug/L	61	0.63	SW846 8151A
2,4,5-TP (Silvex)	2.00	1.54	ug/L	77		SW846 8151A
	2.00	1.53	ug/L	77	0.65	SW846 8151A
2,4,5-T	2.00	1.36	ug/L	68		SW846 8151A
	2.00	1.30	ug/L	65	5.0	SW846 8151A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	70	(20 - 150)
	65	(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 #...: D2C140285 **Work Order #...:** EWNWJ1AA **Matrix.....:** WATER
MB Lot-Sample #: D2C200000-503

Prep Date.....: 03/20/02 **Analysis Time..:** 03:16
Analysis Date..: 03/26/02 **Prep Batch #...:** 2079503
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
2,4-D	ND	4.0	ug/L	SW846 8151A
2,4,5-TP (Silvex)	ND	1.0	ug/L	SW846 8151A
2,4,5-T	ND	1.0	ug/L	SW846 8151A
Dinoseb	ND	0.60	ug/L	SW846 8151A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	64	(20 - 150)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: D2C140285 **Work Order #...:** EW05C1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C260000-450 EW05C1AD-LCSD
Prep Date.....: 03/26/02 **Analysis Date..:** 04/02/02
Prep Batch #...: 2085450 **Analysis Time..:** 13:51
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2,4-D	**68**	**(20 - 133)**			**SW846 8151A**
	66	**(20 - 133)**	**4.1**	**(0-30)**	**SW846 8151A**
2,4,5-TP (Silvex)	**81**	**(23 - 146)**			**SW846 8151A**
	80	**(23 - 146)**	**1.5**	**(0-30)**	**SW846 8151A**
2,4,5-T	**82**	**(20 - 155)**			**SW846 8151A**
	80	**(20 - 155)**	**3.6**	**(0-30)**	**SW846 8151A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	77	(20 - 150)
	73	(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 #...: D2C140285 **Work Order #...:** EW05C1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C260000-450 EW05C1AD-LCSD
Prep Date.....: 03/26/02 **Analysis Date..:** 04/02/02
Prep Batch #...: 2085450 **Analysis Time..:** 13:51
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
2,4-D	8.00	5.48	ug/L	68		SW846 8151A
	8.00	5.26	ug/L	66	4.1	SW846 8151A
2,4,5-TP (Silvex)	2.00	1.62	ug/L	81		SW846 8151A
	2.00	1.60	ug/L	80	1.5	SW846 8151A
2,4,5-T	2.00	1.65	ug/L	82		SW846 8151A
	2.00	1.59	ug/L	80	3.6	SW846 8151A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	77	(20 - 150)
	73	(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 #...: D2C140285 **Work Order #...:** EW05C1AA **Matrix.....:** WATER
MB Lot-Sample #: D2C260000-450

Prep Date.....: 03/26/02 **Analysis Time..:** 13:15

Analysis Date..: 04/02/02 **Prep Batch #...:** 2085450
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
2,4-D	ND	4.0	ug/L	SW846 8151A
2,4,5-TP (Silvex)	ND	1.0	ug/L	SW846 8151A
2,4,5-T	ND	1.0	ug/L	SW846 8151A
Dinoseb	ND	0.60	ug/L	SW846 8151A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
DCAA	75	(20 - 150)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

Trace Level Organic Compounds

Client Lot #...: D2C140285 Work Order #...: EWK881AC Matrix.....: WATER
LCS Lot-Sample#: G2C190000-358
Prep Date.....: 03/19/02 Analysis Date..: 03/22/02
Prep Batch #...: 2078358 Analysis Time..: 19:22
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
2,3,7,8-TCDD	**100**	**(79 - 125)**	**SW846 8280A**
1,2,3,7,8-PeCDD	**101**	**(72 - 137)**	**SW846 8280A**
1,2,3,6,7,8-HxCDD	**96**	**(71 - 130)**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDD	**105**	**(54 - 153)**	**SW846 8280A**
OCDD	**100**	**(69 - 127)**	**SW846 8280A**
2,3,7,8-TCDF	**99**	**(78 - 123)**	**SW846 8280A**
1,2,3,7,8-PeCDF	**101**	**(75 - 133)**	**SW846 8280A**
1,2,3,6,7,8-HxCDF	**96**	**(70 - 128)**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDF	**99**	**(76 - 129)**	**SW846 8280A**
OCDF	**101**	**(66 - 130)**	**SW846 8280A**

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	105	(25 - 150)
13C-2,3,7,8-TCDF	103	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	102	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	104	(25 - 150)
13C-OCDD	106	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	108	(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 #...: D2C140285 **Work Order #...:** EWK881AC **Matrix.....:** WATER
LCS Lot-Sample#: G2C190000-358
Prep Date.....: 03/19/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2078358 **Analysis Time..:** 19:22
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
2,3,7,8-TCDD	**25.0**	**24.9**	**ng/L**	**100**	**SW846 8280A**
1,2,3,7,8-PeCDD	**62.5**	**63.4**	**ng/L**	**101**	**SW846 8280A**
1,2,3,6,7,8-HxCDD	**62.5**	**60.0**	**ng/L**	**96**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDD	**62.5**	**65.6**	**ng/L**	**105**	**SW846 8280A**
OCDD	**125**	**125**	**ng/L**	**100**	**SW846 8280A**
2,3,7,8-TCDF	**25.0**	**24.7**	**ng/L**	**99**	**SW846 8280A**
1,2,3,7,8-PeCDF	**62.5**	**63.0**	**ng/L**	**101**	**SW846 8280A**
1,2,3,6,7,8-HxCDF	**62.5**	**60.2**	**ng/L**	**96**	**SW846 8280A**
1,2,3,4,6,7,8-HpCDF	**62.5**	**61.8**	**ng/L**	**99**	**SW846 8280A**
OCDF	**125**	**126**	**ng/L**	**101**	**SW846 8280A**

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	105	(25 - 150)
13C-2,3,7,8-TCDF	103	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	102	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	104	(25 - 150)
13C-OCDD	106	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	108	(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 #...: D2C140285 **Work Order #...:** EWK881AA **Matrix.....:** WATER
MB Lot-Sample #: G2C190000-358

Prep Date.....: 03/19/02 **Analysis Time..:** 18:34
Analysis Date..: 03/22/02 **Prep Batch #...:** 2078358
Dilution Factor: 1

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.043	ng/L	SW846 8280A
Total TCDD	ND	0.043	ng/L	SW846 8280A
Total PeCDD	ND	1.9	ng/L	SW846 8280A
Total HxCDD	ND	0.13	ng/L	SW846 8280A
Total TCDF	ND	0.024	ng/L	SW846 8280A
Total PeCDF	ND	0.24	ng/L	SW846 8280A
Total HxCDF	ND	0.10	ng/L	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	87	(25 - 150)
13C-2,3,7,8-TCDF	85	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	84	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	88	(25 - 150)
13C-OCDD	88	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	98	(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 #...: D2C140285 **Work Order #...:** EWCEN1DV-MS **Matrix.....:** WATER
MS Lot-Sample #: D2C130228-001 EWCEN1DW-MSD
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02
Prep Date.....: 03/19/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2078358 **Analysis Time..:** 20:57
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2,3,7,8-TCDD	98	(79 - 125)			SW846 8280A
	99	(79 - 125)	0.60	(0-19)	SW846 8280A
1,2,3,7,8-PeCDD	99	(72 - 137)			SW846 8280A
	100	(72 - 137)	0.09	(0-39)	SW846 8280A
1,2,3,6,7,8-HxCDD	92	(71 - 130)			SW846 8280A
	93	(71 - 130)	0.58	(0-25)	SW846 8280A
1,2,3,4,6,7,8-HpCDD	101	(54 - 153)			SW846 8280A
	103	(54 - 153)	0.42	(0-50)	SW846 8280A
OCDD	98	(69 - 127)			SW846 8280A
	98	(69 - 127)	1.4	(0-33)	SW846 8280A
2,3,7,8-TCDF	97	(78 - 123)			SW846 8280A
	97	(78 - 123)	1.4	(0-16)	SW846 8280A
,2,3,7,8-PeCDF	97	(75 - 133)			SW846 8280A
	97	(75 - 133)	1.5	(0-44)	SW846 8280A
1,2,3,6,7,8-HxCDF	96	(70 - 128)			SW846 8280A
	96	(70 - 128)	1.4	(0-24)	SW846 8280A
1,2,3,4,6,7,8-HpCDF	97	(76 - 129)			SW846 8280A
	97	(76 - 129)	0.65	(0-18)	SW846 8280A
OCDF	99	(66 - 130)			SW846 8280A
	99	(66 - 130)	1.3	(0-35)	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	105	(25 - 150)
	110	(25 - 150)
13C-2,3,7,8-TCDF	104	(25 - 150)
	110	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	101	(25 - 150)
	105	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	102	(25 - 150)
	106	(25 - 150)
13C-OCDD	105	(25 - 150)
	111	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	107	(25 - 150)
	106	(25 - 150)

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

Trace Level Organic Compounds

Client Lot #...: D2C140285 **Work Order #...:** EWCEN1DV-MS **Matrix.....:** WATER
MS Lot-Sample #: D2C130228-001 EWCEN1DW-MSD

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

MATRIX SPIKE SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: D2C140285 Work Order #...: EWCEN1DV-MS Matrix.....: WATER
MS Lot-Sample #: D2C130228-001 EWCEN1DW-MSD
Date Sampled...: 03/12/02 13:15 Date Received..: 03/13/02
Prep Date.....: 03/19/02 Analysis Date..: 03/22/02
Prep Batch #...: 2078358 Analysis Time..: 20:57
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
2,3,7,8-TCDD	ND	25.2	24.7	ng/L	98		SW846 8280A
	ND	24.8	24.6	ng/L	99	0.60	SW846 8280A
1,2,3,7,8-PeCDD	ND	63.0	62.3	ng/L	99		SW846 8280A
	ND	62.1	62.2	ng/L	100	0.09	SW846 8280A
1,2,3,6,7,8-HxCDD	ND	63.0	58.2	ng/L	92		SW846 8280A
	ND	62.1	57.9	ng/L	93	0.58	SW846 8280A
1,2,3,4,6,7,8-HpCDD	ND	63.0	63.7	ng/L	101		SW846 8280A
	ND	62.1	64.0	ng/L	103	0.42	SW846 8280A
OCDD	ND	126	123	ng/L	98		SW846 8280A
	ND	124	121	ng/L	98	1.4	SW846 8280A
2,3,7,8-TCDF	ND	25.2	24.5	ng/L	97		SW846 8280A
	ND	24.8	24.2	ng/L	97	1.4	SW846 8280A
1,2,3,7,8-PeCDF	ND	63.0	61.1	ng/L	97		SW846 8280A
	ND	62.1	60.2	ng/L	97	1.5	SW846 8280A
1,2,3,6,7,8-HxCDF	ND	63.0	60.6	ng/L	96		SW846 8280A
	ND	62.1	59.7	ng/L	96	1.4	SW846 8280A
1,2,3,4,6,7,8-HpCDF	ND	63.0	60.9	ng/L	97		SW846 8280A
	ND	62.1	60.5	ng/L	97	0.65	SW846 8280A
OCDF	ND	126	125	ng/L	99		SW846 8280A
	ND	124	123	ng/L	99	1.3	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	105	(25 - 150)
	110	(25 - 150)
13C-2,3,7,8-TCDF	104	(25 - 150)
	110	(25 - 150)
13C-1,2,3,6,7,8-HxCDD	101	(25 - 150)
	105	(25 - 150)
13C-1,2,3,4,6,7,8-HpCDF	102	(25 - 150)
	106	(25 - 150)
13C-OCDD	105	(25 - 150)
	111	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	107	(25 - 150)
	106	(25 - 150)

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: D2C140285 **Work Order #...:** EWCEN1DV-MS **Matrix.....:** WATER
MS Lot-Sample #: D2C130228-001 EWCEN1DW-MSD

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 EVALUATION REPORT

HPLC

Client Lot #...: D2C140285 Work Order #...: EWL8C1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: D2C200000-128 EWL8C1AD-LCSD
Prep Date.....: 03/20/02 Analysis Date..: 03/26/02
Prep Batch #...: 2079128 Analysis Time..: 00:34
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzo(a)pyrene	**85**	**(57 - 112)**			**SW846 8310**
	84	**(57 - 112)**	**1.2**	**(0-20)**	**SW846 8310**
Fluorene	**87**	**(54 - 115)**			**SW846 8310**
	90	**(54 - 115)**	**2.9**	**(0-40)**	**SW846 8310**
Indeno(1,2,3-cd)pyrene	**85**	**(52 - 106)**			**SW846 8310**
	82	**(52 - 106)**	**2.6**	**(0-30)**	**SW846 8310**
Naphthalene	**83**	**(49 - 110)**			**SW846 8310**
	85	**(49 - 110)**	**2.0**	**(0-40)**	**SW846 8310**
Pyrene	**92**	**(62 - 117)**			**SW846 8310**
	93	**(62 - 117)**	**1.6**	**(0-40)**	**SW846 8310**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	86	(64 - 108)
	87	(64 - 108)

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 #...: D2C140285 Work Order #...: EWL8C1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: D2C200000-128 EWL8C1AD-LCSD
Prep Date.....: 03/20/02 Analysis Date..: 03/26/02
Prep Batch #...: 2079128 Analysis Time..: 00:34
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzo(a)pyrene	20.0	16.9	ug/L	85		SW846 8310
	20.0	16.7	ug/L	84	1.2	SW846 8310
Fluorene	20.0	17.5	ug/L	87		SW846 8310
	20.0	18.0	ug/L	90	2.9	SW846 8310
Indeno(1,2,3-cd)pyrene	20.0	16.9	ug/L	85		SW846 8310
	20.0	16.5	ug/L	82	2.6	SW846 8310
Naphthalene	20.0	16.6	ug/L	83		SW846 8310
	20.0	16.9	ug/L	85	2.0	SW846 8310
Pyrene	20.0	18.4	ug/L	92		SW846 8310
	20.0	18.6	ug/L	93	1.6	SW846 8310

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Terphenyl-d14	86	(64 - 108)
	87	(64 - 108)

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 #...: D2C140285 **Work Order #...:** EWL8C1AA **Matrix.....:** WATER
MB Lot-Sample #: D2C200000-128

Prep Date.....: 03/20/02 **Analysis Time..:** 00:05

Analysis Date..: 03/26/02 **Prep Batch #...:** 2079128
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	83	(64 - 108)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D2C140285 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Aluminum	103	(88 - 108)			SW846 6010B	03/21-03/22/02	2078272
	103	(88 - 108)	0.28	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Barium	104	(92 - 113)			SW846 6010B	03/21-03/22/02	2078272
	106	(92 - 113)	1.8	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Beryllium	95	(89 - 112)			SW846 6010B	03/21-03/22/02	2078272
	97	(89 - 112)	2.0	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Calcium	100	(90 - 110)			SW846 6010B	03/21-03/22/02	2078272
	100	(90 - 110)	0.66	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Cobalt	93	(88 - 108)			SW846 6010B	03/21-03/22/02	2078272
	95	(88 - 108)	2.1	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Copper	100	(90 - 110)			SW846 6010B	03/21-03/22/02	2078272
	102	(90 - 110)	1.6	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Iron	104	(90 - 110)			SW846 6010B	03/21-03/22/02	2078272
	103	(90 - 110)	1.1	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Magnesium	105	(92 - 112)			SW846 6010B	03/21-03/22/02	2078272
	105	(92 - 112)	0.77	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Manganese	95	(90 - 110)			SW846 6010B	03/21-03/22/02	2078272
	97	(90 - 110)	2.3	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Nickel	103	(90 - 111)			SW846 6010B	03/21-03/27/02	2078272
	108	(90 - 111)	5.1	(0-20)	SW846 6010B	03/21-03/27/02	2078272
		Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D2C140285 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Potassium	102	(88 - 109)			SW846 6010B	03/21-03/22/02	2078272
	101	(88 - 109)	0.91	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Sodium	108	(91 - 113)			SW846 6010B	03/21-03/22/02	2078272
	106	(91 - 113)	2.2	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Tin	97	(87 - 109)			SW846 6010B	03/21-03/27/02	2078272
	102	(87 - 109)	4.9	(0-20)	SW846 6010B	03/21-03/27/02	2078272
		Dilution Factor: 1					
Vanadium	91	(89 - 113)			SW846 6010B	03/21-03/22/02	2078272
	93	(89 - 113)	2.2	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Zinc	88	(84 - 111)			SW846 6010B	03/21-03/22/02	2078272
	90	(84 - 111)	2.8	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Molybdenum	91	(89 - 109)			SW846 6010B	03/21-03/22/02	2078272
	93	(89 - 109)	2.7	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Antimony	100	(86 - 119)			SW846 6020	03/25-03/27/02	2078476
	100	(86 - 119)	0.16	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Arsenic	97	(86 - 114)			SW846 6020	03/25-03/27/02	2078476
	95	(86 - 114)	2.4	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Cadmium	100	(85 - 115)			SW846 6020	03/25-03/27/02	2078476
	100	(85 - 115)	0.15	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Chromium	98	(85 - 115)			SW846 6020	03/25-03/27/02	2078476
	99	(85 - 115)	1.2	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D2C140285 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Lead	102	(85 - 115)			SW846 6020	03/25-03/27/02	2078476
	101	(85 - 115)	1.2	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Selenium	94	(85 - 115)			SW846 6020	03/25-03/27/02	2078476
	92	(85 - 115)	1.8	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Silver	101	(85 - 114)			SW846 6020	03/25-03/27/02	2078476
	99	(85 - 114)	1.6	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Thallium	100	(85 - 115)			SW846 6020	03/25-03/27/02	2078476
	101	(85 - 115)	0.78	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Mercury	94	(84 - 114)			SW846 7470A	04/01/02	2085309
	93	(84 - 114)	1.1	(0-10)	SW846 7470A	04/01/02	2085309
		Dilution Factor: 1					

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D2C140285 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Aluminum	103	(88 - 108)			SW846 6010B	03/21-03/22/02	2078272
	103	(88 - 108)	0.28	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Barium	104	(92 - 113)			SW846 6010B	03/21-03/22/02	2078272
	106	(92 - 113)	1.8	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Beryllium	95	(89 - 112)			SW846 6010B	03/21-03/22/02	2078272
	97	(89 - 112)	2.0	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Calcium	100	(90 - 110)			SW846 6010B	03/21-03/22/02	2078272
	100	(90 - 110)	0.66	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Cobalt	93	(88 - 108)			SW846 6010B	03/21-03/22/02	2078272
	95	(88 - 108)	2.1	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Copper	100	(90 - 110)			SW846 6010B	03/21-03/22/02	2078272
	102	(90 - 110)	1.6	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Iron	104	(90 - 110)			SW846 6010B	03/21-03/22/02	2078272
	103	(90 - 110)	1.1	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Magnesium	105	(92 - 112)			SW846 6010B	03/21-03/22/02	2078272
	105	(92 - 112)	0.77	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Manganese	95	(90 - 110)			SW846 6010B	03/21-03/22/02	2078272
	97	(90 - 110)	2.3	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Nickel	103	(90 - 111)			SW846 6010B	03/21-03/27/02	2078272
	108	(90 - 111)	5.1	(0-20)	SW846 6010B	03/21-03/27/02	2078272
		Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D2C140285 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Potassium	102	(88 - 109)			SW846 6010B	03/21-03/22/02	2078272
	101	(88 - 109)	0.91	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Sodium	108	(91 - 113)			SW846 6010B	03/21-03/22/02	2078272
	106	(91 - 113)	2.2	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Tin	97	(87 - 109)			SW846 6010B	03/21-03/27/02	2078272
	102	(87 - 109)	4.9	(0-20)	SW846 6010B	03/21-03/27/02	2078272
		Dilution Factor: 1					
Vanadium	91	(89 - 113)			SW846 6010B	03/21-03/22/02	2078272
	93	(89 - 113)	2.2	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Zinc	88	(84 - 111)			SW846 6010B	03/21-03/22/02	2078272
	90	(84 - 111)	2.8	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Molybdenum	91	(89 - 109)			SW846 6010B	03/21-03/22/02	2078272
	93	(89 - 109)	2.7	(0-20)	SW846 6010B	03/21-03/22/02	2078272
		Dilution Factor: 1					
Antimony	100	(86 - 119)			SW846 6020	03/25-03/27/02	2078476
	100	(86 - 119)	0.16	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Arsenic	97	(86 - 114)			SW846 6020	03/25-03/27/02	2078476
	95	(86 - 114)	2.4	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Cadmium	100	(85 - 115)			SW846 6020	03/25-03/27/02	2078476
	100	(85 - 115)	0.15	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Chromium	98	(85 - 115)			SW846 6020	03/25-03/27/02	2078476
	99	(85 - 115)	1.2	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D2C140285 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Lead	102	(85 - 115)			SW846 6020	03/25-03/27/02	2078476
	101	(85 - 115)	1.2	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Selenium	94	(85 - 115)			SW846 6020	03/25-03/27/02	2078476
	92	(85 - 115)	1.8	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Silver	101	(85 - 114)			SW846 6020	03/25-03/27/02	2078476
	99	(85 - 114)	1.6	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Thallium	100	(85 - 115)			SW846 6020	03/25-03/27/02	2078476
	101	(85 - 115)	0.78	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Mercury	94	(84 - 114)			SW846 7470A	04/01/02	2085309
	93	(84 - 114)	1.1	(0-10)	SW846 7470A	04/01/02	2085309
		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 #...: D2C140285 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Aluminum	2000	2060	ug/L	103		SW846 6010B	03/21-03/22/02	2078272
	2000	2050	ug/L	103	0.28	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Barium	2000	2080	ug/L	104		SW846 6010B	03/21-03/22/02	2078272
	2000	2120	ug/L	106	1.8	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Beryllium	50.0	47.4	ug/L	95		SW846 6010B	03/21-03/22/02	2078272
	50.0	48.4	ug/L	97	2.0	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Calcium	50000	50100	ug/L	100		SW846 6010B	03/21-03/22/02	2078272
	50000	49800	ug/L	100	0.66	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Cobalt	500	463	ug/L	93		SW846 6010B	03/21-03/22/02	2078272
	500	473	ug/L	95	2.1	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Copper	250	251	ug/L	100		SW846 6010B	03/21-03/22/02	2078272
	250	254	ug/L	102	1.6	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Iron	1000	1040	ug/L	104		SW846 6010B	03/21-03/22/02	2078272
	1000	1030	ug/L	103	1.1	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Magnesium	50000	52700	ug/L	105		SW846 6010B	03/21-03/22/02	2078272
	50000	52300	ug/L	105	0.77	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Manganese	500	476	ug/L	95		SW846 6010B	03/21-03/22/02	2078272
	500	487	ug/L	97	2.3	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Nickel	500	514	ug/L	103		SW846 6010B	03/21-03/27/02	2078272
	500	541	ug/L	108	5.1	SW846 6010B	03/21-03/27/02	2078272
			Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D2C140285 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Potassium	50000	51200	ug/L	102		SW846 6010B	03/21-03/22/02	2078272
	50000	50700	ug/L	101	0.91	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Sodium	50000	54000	ug/L	108		SW846 6010B	03/21-03/22/02	2078272
	50000	52800	ug/L	106	2.2	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Tin	2000	1940	ug/L	97		SW846 6010B	03/21-03/27/02	2078272
	2000	2040	ug/L	102	4.9	SW846 6010B	03/21-03/27/02	2078272
			Dilution Factor: 1					
Vanadium	500	456	ug/L	91		SW846 6010B	03/21-03/22/02	2078272
	500	466	ug/L	93	2.2	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Zinc	500	439	ug/L	88		SW846 6010B	03/21-03/22/02	2078272
	500	451	ug/L	90	2.8	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Molybdenum	1000	908	ug/L	91		SW846 6010B	03/21-03/22/02	2078272
	1000	933	ug/L	93	2.7	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Antimony	200	200	ug/L	100		SW846 6020	03/25-03/27/02	2078476
	200	200	ug/L	100	0.16	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Arsenic	200	194	ug/L	97		SW846 6020	03/25-03/27/02	2078476
	200	189	ug/L	95	2.4	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Cadmium	200	200	ug/L	100		SW846 6020	03/25-03/27/02	2078476
	200	200	ug/L	100	0.15	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Chromium	200	197	ug/L	98		SW846 6020	03/25-03/27/02	2078476
	200	199	ug/L	99	1.2	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D2C140285 Matrix.....: WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Lead	200	204	ug/L	102		SW846 6020	03/25-03/27/02	2078476
	200	201	ug/L	101	1.2	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Selenium	200	187	ug/L	94		SW846 6020	03/25-03/27/02	2078476
	200	184	ug/L	92	1.8	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Silver	200	202	ug/L	101		SW846 6020	03/25-03/27/02	2078476
	200	199	ug/L	99	1.6	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Thallium	200	201	ug/L	100		SW846 6020	03/25-03/27/02	2078476
	200	202	ug/L	101	0.78	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Mercury	5.00	4.71	ug/L	94		SW846 7470A	04/01/02	2085309
	5.00	4.66	ug/L	93	1.1	SW846 7470A	04/01/02	2085309
			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 #...: D2C140285 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Aluminum	2000	2060	ug/L	103		SW846 6010B	03/21-03/22/02	2078272
	2000	2050	ug/L	103	0.28	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Barium	2000	2080	ug/L	104		SW846 6010B	03/21-03/22/02	2078272
	2000	2120	ug/L	106	1.8	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Beryllium	50.0	47.4	ug/L	95		SW846 6010B	03/21-03/22/02	2078272
	50.0	48.4	ug/L	97	2.0	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Calcium	50000	50100	ug/L	100		SW846 6010B	03/21-03/22/02	2078272
	50000	49800	ug/L	100	0.66	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Cobalt	500	463	ug/L	93		SW846 6010B	03/21-03/22/02	2078272
	500	473	ug/L	95	2.1	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Copper	250	251	ug/L	100		SW846 6010B	03/21-03/22/02	2078272
	250	254	ug/L	102	1.6	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Iron	1000	1040	ug/L	104		SW846 6010B	03/21-03/22/02	2078272
	1000	1030	ug/L	103	1.1	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Magnesium	50000	52700	ug/L	105		SW846 6010B	03/21-03/22/02	2078272
	50000	52300	ug/L	105	0.77	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Manganese	500	476	ug/L	95		SW846 6010B	03/21-03/22/02	2078272
	500	487	ug/L	97	2.3	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Nickel	500	514	ug/L	103		SW846 6010B	03/21-03/27/02	2078272
	500	541	ug/L	108	5.1	SW846 6010B	03/21-03/27/02	2078272
			Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D2C140285 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Potassium	50000	51200	ug/L	102		SW846 6010B	03/21-03/22/02	2078272
	50000	50700	ug/L	101	0.91	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Sodium	50000	54000	ug/L	108		SW846 6010B	03/21-03/22/02	2078272
	50000	52800	ug/L	106	2.2	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Tin	2000	1940	ug/L	97		SW846 6010B	03/21-03/27/02	2078272
	2000	2040	ug/L	102	4.9	SW846 6010B	03/21-03/27/02	2078272
			Dilution Factor: 1					
Vanadium	500	456	ug/L	91		SW846 6010B	03/21-03/22/02	2078272
	500	466	ug/L	93	2.2	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Zinc	500	439	ug/L	88		SW846 6010B	03/21-03/22/02	2078272
	500	451	ug/L	90	2.8	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Molybdenum	1000	908	ug/L	91		SW846 6010B	03/21-03/22/02	2078272
	1000	933	ug/L	93	2.7	SW846 6010B	03/21-03/22/02	2078272
			Dilution Factor: 1					
Antimony	200	200	ug/L	100		SW846 6020	03/25-03/27/02	2078476
	200	200	ug/L	100	0.16	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Arsenic	200	194	ug/L	97		SW846 6020	03/25-03/27/02	2078476
	200	189	ug/L	95	2.4	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Cadmium	200	200	ug/L	100		SW846 6020	03/25-03/27/02	2078476
	200	200	ug/L	100	0.15	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Chromium	200	197	ug/L	98		SW846 6020	03/25-03/27/02	2078476
	200	199	ug/L	99	1.2	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D2C140285 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Lead	200	204	ug/L	102		SW846 6020	03/25-03/27/02	2078476
	200	201	ug/L	101	1.2	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Selenium	200	187	ug/L	94		SW846 6020	03/25-03/27/02	2078476
	200	184	ug/L	92	1.8	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Silver	200	202	ug/L	101		SW846 6020	03/25-03/27/02	2078476
	200	199	ug/L	99	1.6	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Thallium	200	201	ug/L	100		SW846 6020	03/25-03/27/02	2078476
	200	202	ug/L	101	0.78	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Mercury	5.00	4.71	ug/L	94		SW846 7470A	04/01/02	2085309
	5.00	4.66	ug/L	93	1.1	SW846 7470A	04/01/02	2085309
			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 #...: D2C140285 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: D2C190000-272 **Prep Batch #...:** 2078272						
Aluminum	ND	100	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AA
		Dilution Factor: 1				
		Analysis Time..: 16:14				
Barium	ND	10.0	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AC
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Beryllium	ND	2.0	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AD
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Calcium	ND	200	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AP
		Dilution Factor: 1				
		Analysis Time..: 16:14				
Cobalt	ND	10.0	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AL
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Copper	ND	20.0	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AE
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Iron	ND	100	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AF
		Dilution Factor: 1				
		Analysis Time..: 16:14				
Magnesium	ND	200	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AQ
		Dilution Factor: 1				
		Analysis Time..: 16:14				
Manganese	ND	10.0	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AG
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Nickel	ND	40.0	ug/L	SW846 6010B	03/21-03/27/02	EWKW61AH
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Potassium	ND	3000	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AR
		Dilution Factor: 1				
		Analysis Time..: 16:14				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D2C140285 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Sodium	ND	5000	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AT
		Dilution Factor: 1				
		Analysis Time..: 16:14				
Tin	ND	100	ug/L	SW846 6010B	03/21-03/27/02	EWKW61AM
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Vanadium	ND	10.0	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AJ
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Zinc	ND	20.0	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AK
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Molybdenum	ND	20.0	ug/L	SW846 6010B	03/21-03/22/02	EWKW61AN
		Dilution Factor: 1				
		Analysis Time..: 21:52				

MB Lot-Sample #: D2C190000-476 **Prep Batch #...:** 2078476

Antimony	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWLRM1AA
		Dilution Factor: 1				
		Analysis Time..: 16:12				
Arsenic	ND	5.0	ug/L	SW846 6020	03/25-03/27/02	EWLRM1AC
		Dilution Factor: 1				
		Analysis Time..: 16:12				
Cadmium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWLRM1AD
		Dilution Factor: 1				
		Analysis Time..: 16:12				
Chromium	**0.64 B**	**1.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWLRM1AJ**
		Dilution Factor: 1				
		Analysis Time..: 16:12				
Lead	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWLRM1AE
		Dilution Factor: 1				
		Analysis Time..: 16:12				
Selenium	ND	5.0	ug/L	SW846 6020	03/25-03/27/02	EWLRM1AF
		Dilution Factor: 1				
		Analysis Time..: 16:12				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D2C140285 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWLRM1AG
		Dilution Factor: 1				
		Analysis Time..: 16:12				
Thallium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWLRM1AH
		Dilution Factor: 1				
		Analysis Time..: 16:12				

NOTE(S):

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

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D2C140285 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: D2C260000-309 **Prep Batch #...:** 2085309						
Mercury	ND	0.20	ug/L	SW846 7470A	04/01/02	EW0G21AA
		Dilution Factor: 1				
		Analysis Time..: 21:40				

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D2C140285 **Matrix.....:** WATER
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D2C130228-001 **Prep Batch #...:** 2078272							
Aluminum	105	(88 - 108)			SW846 6010B	03/21-03/22/02	EWCEN1D1
	95	(88 - 108)	10	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1D2
		Dilution Factor: 1					
		Analysis Time..: 16:43					
Barium	104	(92 - 113)			SW846 6010B	03/21-03/22/02	EWCEN1D3
	99	(92 - 113)	4.6	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1D4
		Dilution Factor: 1					
		Analysis Time..: 23:10					
Beryllium	100	(89 - 112)			SW846 6010B	03/21-03/28/02	EWCEN1D5
	91	(89 - 112)	10	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1D6
		Dilution Factor: 1					
		Analysis Time..: 16:58					
Calcium	100	(90 - 110)			SW846 6010B	03/21-03/22/02	EWCEN1EQ
	85 N	(90 - 110)	9.7	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1ER
		Dilution Factor: 1					
		Analysis Time..: 16:43					
Cobalt	92	(88 - 108)			SW846 6010B	03/21-03/22/02	EWCEN1EJ
	88	(88 - 108)	4.2	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1EK
		Dilution Factor: 1					
		Analysis Time..: 23:10					
Copper	101	(90 - 110)			SW846 6010B	03/21-03/22/02	EWCEN1D7
	96	(90 - 110)	5.0	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1D8
		Dilution Factor: 1					
		Analysis Time..: 23:10					
Iron	105	(90 - 110)			SW846 6010B	03/21-03/22/02	EWCEN1D9
	94	(90 - 110)	11	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1EA
		Dilution Factor: 1					
		Analysis Time..: 16:43					
Magnesium	108	(92 - 112)			SW846 6010B	03/21-03/22/02	EWCEN1ET
	91 N	(92 - 112)	9.8	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1EU
		Dilution Factor: 1					
		Analysis Time..: 16:43					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D2C140285 **Matrix.....:** WATER
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	94	(90 - 110)			SW846 6010B	03/21-03/22/02	EWCEN1EC
	90	(90 - 110)	4.1	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1ED
		Dilution Factor: 1					
		Analysis Time..: 23:10					
Nickel	102	(90 - 111)			SW846 6010B	03/21-03/22/02	EWCEN1EE
	98	(90 - 111)	4.2	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1EF
		Dilution Factor: 1					
		Analysis Time..: 23:10					
Potassium	104	(88 - 109)			SW846 6010B	03/21-03/22/02	EWCEN1EV
	93	(88 - 109)	9.9	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1EW
		Dilution Factor: 1					
		Analysis Time..: 16:43					
Sodium	108	(91 - 113)			SW846 6010B	03/21-03/22/02	EWCEN1EX
	90 N	(91 - 113)	9.0	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1E0
		Dilution Factor: 1					
		Analysis Time..: 16:43					
Tin	102	(87 - 109)			SW846 6010B	03/21-03/28/02	EWCEN1EL
	99	(87 - 109)	2.6	(0-20)	SW846 6010B	03/21-03/27/02	EWCEN1EM
		Dilution Factor: 1					
		Analysis Time..: 16:58					
Vanadium	90	(89 - 113)			SW846 6010B	03/21-03/22/02	EWCEN1EG
	85 N	(89 - 113)	4.4	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1EH
		Dilution Factor: 1					
		Analysis Time..: 23:10					
Zinc	87	(84 - 111)			SW846 6010B	03/21-03/22/02	EWCEN1CJ
	84	(84 - 111)	3.0	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1CK
		Dilution Factor: 1					
		Analysis Time..: 23:10					
Molybdenum	91	(89 - 109)			SW846 6010B	03/21-03/22/02	EWCEN1EN
	87 N	(89 - 109)	4.4	(0-20)	SW846 6010B	03/21-03/22/02	EWCEN1EP
		Dilution Factor: 1					
		Analysis Time..: 23:10					

MS Lot-Sample #: D2C130228-001 **Prep Batch #...:** 2078476

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D2C140285 **Matrix.....:** WATER
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Antimony	100	(86 - 119)			SW846 6020	03/25-03/27/02	EWCEN1CL
	100	(86 - 119)	0.64	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1CM
		Dilution Factor: 1					
		Analysis Time..: 20:26					
Arsenic	98	(86 - 114)			SW846 6020	03/25-03/27/02	EWCEN1CN
	97	(86 - 114)	0.80	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1CP
		Dilution Factor: 1					
		Analysis Time..: 20:26					
Cadmium	100	(85 - 115)			SW846 6020	03/25-03/27/02	EWCEN1CQ
	100	(85 - 115)	0.56	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1CR
		Dilution Factor: 1					
		Analysis Time..: 20:26					
Chromium	99	(85 - 115)			SW846 6020	03/25-03/27/02	EWCEN1C3
	98	(85 - 115)	0.95	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1C4
		Dilution Factor: 1					
		Analysis Time..: 20:26					
Lead	103	(85 - 115)			SW846 6020	03/25-03/27/02	EWCEN1CT
	102	(85 - 115)	0.37	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1CU
		Dilution Factor: 1					
		Analysis Time..: 20:26					
Selenium	93	(85 - 115)			SW846 6020	03/25-03/27/02	EWCEN1CV
	94	(85 - 115)	1.4	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1CW
		Dilution Factor: 1					
		Analysis Time..: 20:26					
Silver	89	(85 - 114)			SW846 6020	03/25-03/27/02	EWCEN1CX
	96	(85 - 114)	7.6	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1C0
		Dilution Factor: 1					
		Analysis Time..: 20:26					
Thallium	101	(85 - 115)			SW846 6020	03/25-03/27/02	EWCEN1C1
	101	(85 - 115)	0.02	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1C2
		Dilution Factor: 1					
		Analysis Time..: 20:26					

MS Lot-Sample #: D2C130228-001 **Prep Batch #...:** 2085309

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D2C140285 **Matrix.....:** WATER
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Mercury	89	(84 - 114)			SW846 7470A	04/01/02	EWCEN1C5
	90	(84 - 114)	0.67	(0-10)	SW846 7470A	04/01/02	EWCEN1C6

Dilution Factor: 1
Analysis Time..: 21:56

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 #...: D2C140285 **Matrix.....:** WATER
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D2C130228-001 **Prep Batch #...:** 2078272									
Aluminum									
	ND	2000	2110	ug/L	105		SW846 6010B	03/21-03/22/02	EWCEN1D1
	ND	2000	1900	ug/L	95	10	SW846 6010B	03/21-03/22/02	EWCEN1D2
			Dilution Factor: 1						
			Analysis Time..: 16:43						
Barium									
	90.3	2000	2170	ug/L	104		SW846 6010B	03/21-03/22/02	EWCEN1D3
	90.3	2000	2070	ug/L	99	4.6	SW846 6010B	03/21-03/22/02	EWCEN1D4
			Dilution Factor: 1						
			Analysis Time..: 23:10						
Beryllium									
	ND	50.0	50.1	ug/L	100		SW846 6010B	03/21-03/28/02	EWCEN1D5
	ND	50.0	45.3	ug/L	91	10	SW846 6010B	03/21-03/22/02	EWCEN1D6
			Dilution Factor: 1						
			Analysis Time..: 16:58						
Calcium									
	32300	50000	82600	ug/L	100		SW846 6010B	03/21-03/22/02	EWCEN1EQ
	32300	50000	74900 N	ug/L	85	9.7	SW846 6010B	03/21-03/22/02	EWCEN1ER
			Dilution Factor: 1						
			Analysis Time..: 16:43						
Cobalt									
	ND	500	459	ug/L	92		SW846 6010B	03/21-03/22/02	EWCEN1EJ
	ND	500	440	ug/L	88	4.2	SW846 6010B	03/21-03/22/02	EWCEN1EK
			Dilution Factor: 1						
			Analysis Time..: 23:10						
Copper									
	ND	250	251	ug/L	101		SW846 6010B	03/21-03/22/02	EWCEN1D7
	ND	250	239	ug/L	96	5.0	SW846 6010B	03/21-03/22/02	EWCEN1D8
			Dilution Factor: 1						
			Analysis Time..: 23:10						
Iron									
	26.4	1000	1080	ug/L	105		SW846 6010B	03/21-03/22/02	EWCEN1D9
	26.4	1000	969	ug/L	94	11	SW846 6010B	03/21-03/22/02	EWCEN1EA
			Dilution Factor: 1						
			Analysis Time..: 16:43						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D2C140285 **Matrix.....:** WATER
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Magnesium									
	32800	50000	86600	ug/L	108		SW846 6010B	03/21-03/22/02	EWCEN1ET
	32800	50000	78500 N	ug/L	91	9.8	SW846 6010B	03/21-03/22/02	EWCEN1EU
			Dilution Factor: 1						
			Analysis Time..: 16:43						
Manganese									
	1.2	500	470	ug/L	94		SW846 6010B	03/21-03/22/02	EWCEN1EC
	1.2	500	451	ug/L	90	4.1	SW846 6010B	03/21-03/22/02	EWCEN1ED
			Dilution Factor: 1						
			Analysis Time..: 23:10						
Nickel									
	ND	500	512	ug/L	102		SW846 6010B	03/21-03/22/02	EWCEN1EE
	ND	500	490	ug/L	98	4.2	SW846 6010B	03/21-03/22/02	EWCEN1EF
			Dilution Factor: 1						
			Analysis Time..: 23:10						
Potassium									
	6110	50000	58200	ug/L	104		SW846 6010B	03/21-03/22/02	EWCEN1EV
	6110	50000	52700	ug/L	93	9.9	SW846 6010B	03/21-03/22/02	EWCEN1EW
			Dilution Factor: 1						
			Analysis Time..: 16:43						
Sodium									
	50800	50000	105000	ug/L	108		SW846 6010B	03/21-03/22/02	EWCEN1EX
	50800	50000	96000 N	ug/L	90	9.0	SW846 6010B	03/21-03/22/02	EWCEN1E0
			Dilution Factor: 1						
			Analysis Time..: 16:43						
Tin									
	ND	2000	2040	ug/L	102		SW846 6010B	03/21-03/28/02	EWCEN1EL
	ND	2000	1990	ug/L	99	2.6	SW846 6010B	03/21-03/27/02	EWCEN1EM
			Dilution Factor: 1						
			Analysis Time..: 16:58						
Vanadium									
	33.4	500	481	ug/L	90		SW846 6010B	03/21-03/22/02	EWCEN1EG
	33.4	500	461 N	ug/L	85	4.4	SW846 6010B	03/21-03/22/02	EWCEN1EH
			Dilution Factor: 1						
			Analysis Time..: 23:10						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D2C140285 **Matrix.....:** WATER
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc									
	ND	500	433	ug/L	87		SW846 6010B	03/21-03/22/02	EWCEN1CJ
	ND	500	420	ug/L	84	3.0	SW846 6010B	03/21-03/22/02	EWCEN1CK
			Dilution Factor: 1						
			Analysis Time..: 23:10						
Molybdenum									
	3.0	1000	908	ug/L	91		SW846 6010B	03/21-03/22/02	EWCEN1EN
	3.0	1000	869 N	ug/L	87	4.4	SW846 6010B	03/21-03/22/02	EWCEN1EP
			Dilution Factor: 1						
			Analysis Time..: 23:10						

MS Lot-Sample #: D2C130228-001 **Prep Batch #...:** 2078476

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Antimony									
	ND	200	201	ug/L	100		SW846 6020	03/25-03/27/02	EWCEN1CL
	ND	200	199	ug/L	100	0.64	SW846 6020	03/25-03/27/02	EWCEN1CM
			Dilution Factor: 1						
			Analysis Time..: 20:26						
Arsenic									
	4.6	200	201	ug/L	98		SW846 6020	03/25-03/27/02	EWCEN1CN
	4.6	200	199	ug/L	97	0.80	SW846 6020	03/25-03/27/02	EWCEN1CP
			Dilution Factor: 1						
			Analysis Time..: 20:26						
Cadmium									
	ND	200	201	ug/L	100		SW846 6020	03/25-03/27/02	EWCEN1CQ
	ND	200	200	ug/L	100	0.56	SW846 6020	03/25-03/27/02	EWCEN1CR
			Dilution Factor: 1						
			Analysis Time..: 20:26						
Chromium									
	1.1	200	199	ug/L	99		SW846 6020	03/25-03/27/02	EWCEN1C3
	1.1	200	197	ug/L	98	0.95	SW846 6020	03/25-03/27/02	EWCEN1C4
			Dilution Factor: 1						
			Analysis Time..: 20:26						
Lead									
	ND	200	206	ug/L	103		SW846 6020	03/25-03/27/02	EWCEN1CT
	ND	200	205	ug/L	102	0.37	SW846 6020	03/25-03/27/02	EWCEN1CU
			Dilution Factor: 1						
			Analysis Time..: 20:26						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D2C140285 **Matrix.....:** WATER
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Selenium									
	0.21	200	186	ug/L	93		SW846 6020	03/25-03/27/02	EWCEN1CV
	0.21	200	189	ug/L	94	1.4	SW846 6020	03/25-03/27/02	EWCEN1CW
			Dilution Factor: 1						
			Analysis Time..: 20:26						
Silver									
	ND	200	178	ug/L	89		SW846 6020	03/25-03/27/02	EWCEN1CX
	ND	200	192	ug/L	96	7.6	SW846 6020	03/25-03/27/02	EWCEN1C0
			Dilution Factor: 1						
			Analysis Time..: 20:26						
Thallium									
	ND	200	201	ug/L	101		SW846 6020	03/25-03/27/02	EWCEN1C1
	ND	200	201	ug/L	101	0.02	SW846 6020	03/25-03/27/02	EWCEN1C2
			Dilution Factor: 1						
			Analysis Time..: 20:26						

.S Lot-Sample #: D2C130228-001 **Prep Batch #...:** 2085309

Mercury									
	ND	5.00	4.46	ug/L	89		SW846 7470A	04/01/02	EWCEN1C5
	ND	5.00	4.49	ug/L	90	0.67	SW846 7470A	04/01/02	EWCEN1C6
			Dilution Factor: 1						
			Analysis Time..: 21:56						

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 #...: D2C140285 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total		WO#:EWQ2Q1AC-LCS/EWQ2Q1AD-LCSD				LCS Lot-Sample#: D2C210000-459	
	104	(85 - 115)			SW846 9012A	03/20/02	2080459
	106	(85 - 115)	2.0	(0-20)	SW846 9012A	03/20/02	2080459
		Dilution Factor: 1					
Perchlorate		WO#:EWJ191AC-LCS/EWJ191AD-LCSD				LCS Lot-Sample#: D2C180000-520	
	115	(80 - 120)			EPA 314.0	03/15/02	2077520
	114	(80 - 120)	0.82	(0-20)	EPA 314.0	03/15/02	2077520
		Dilution Factor: 1					
Total Organic Halogens		WO#:EWP0X1AC-LCS/EWP0X1AD-LCSD				LCS Lot-Sample#: D2C210000-258	
	97	(76 - 109)			SW846 9020B	03/18-03/19/02	2080258
	99	(76 - 109)	2.3	(0-30)	SW846 9020B	03/18/02	2080258
		Dilution Factor: 1					
Total Organic Carbon		WO#:EXF941AC-LCS/EXF941AD-LCSD				LCS Lot-Sample#: D2D050000-309	
	104	(90 - 110)			SW846 9060	04/04/02	2095309
	108	(90 - 110)	4.3	(0-10)	SW846 9060	04/04/02	2095309
		Dilution Factor: 1					
Total Sulfide		WO#:EWPM31AC-LCS/EWPM31AD-LCSD				LCS Lot-Sample#: D2C210000-204	
	84	(70 - 130)			SW846 9030B/9034	03/19/02	2080204
	83	(70 - 130)	0.45	(0-20)	SW846 9030B/9034	03/19/02	2080204
		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 #...: D2C140285 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total			WO#:EWQ2Q1AC-LCS/EWQ2Q1AD-LCSD			LCS Lot-Sample#: D2C210000-459		
	0.200	0.207	mg/L	104		SW846 9012A	03/20/02	2080459
	0.200	0.212	mg/L	106	2.0	SW846 9012A	03/20/02	2080459
			Dilution Factor: 1					
Perchlorate			WO#:EWJ191AC-LCS/EWJ191AD-LCSD			LCS Lot-Sample#: D2C180000-520		
	200	231	ug/L	115		EPA 314.0	03/15/02	2077520
	200	229	ug/L	114	0.82	EPA 314.0	03/15/02	2077520
			Dilution Factor: 1					
Total Organic Halogens			WO#:EWP0X1AC-LCS/EWP0X1AD-LCSD			LCS Lot-Sample#: D2C210000-258		
	100	97.0	ug/L	97		SW846 9020B	03/18-03/19/02	2080258
	100	99.3	ug/L	99	2.3	SW846 9020B	03/18/02	2080258
			Dilution Factor: 1					
Total Organic Carbon			WO#:EXF941AC-LCS/EXF941AD-LCSD			LCS Lot-Sample#: D2D050000-309		
	25.0	26.0	mg/L	104		SW846 9060	04/04/02	2095309
	25.0	27.1	mg/L	108	4.3	SW846 9060	04/04/02	2095309
			Dilution Factor: 1					
Total Sulfide			WO#:EWPM31AC-LCS/EWPM31AD-LCSD			LCS Lot-Sample#: D2C210000-204		
	21.1	17.6	mg/L	84		SW846 9030B/9034	03/19/02	2080204
	21.1	17.5	mg/L	83	0.45	SW846 9030B/9034	03/19/02	2080204
			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 #...: D2C140285 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total		Work Order #: EWQ2Q1AA		MB Lot-Sample #:	D2C210000-459	
	ND	0.010	mg/L	SW846 9012A	03/20/02	2080459
		Dilution Factor: 1				
		Analysis Time..: 14:00				
Perchlorate		Work Order #: EWJ191AA		MB Lot-Sample #:	D2C180000-520	
	ND	20.0	ug/L	EPA 314.0	03/15/02	2077520
		Dilution Factor: 1				
		Analysis Time..: 07:23				
Total Organic Halogens		Work Order #: EWP0X1AA		MB Lot-Sample #:	D2C210000-258	
	ND	30.0	ug/L	SW846 9020B	03/18/02	2080258
		Dilution Factor: 1				
		Analysis Time..: 12:00				
Total Organic Carbon		Work Order #: EXF941AA		MB Lot-Sample #:	D2D050000-309	
	0.35 B	**1.0**	**mg/L**	**SW846 9060**	**04/04/02**	**2095309**
		Dilution Factor: 1				
		Analysis Time..: 16:00				
Total Sulfide		Work Order #: EWPM31AA		MB Lot-Sample #:	D2C210000-204	
	ND	4.0	mg/L	SW846 9030B/9034	03/19/02	2080204
		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 #...: D2C140285 **Matrix.....:** WG
Date Sampled...: 03/13/02 10:30 **Date Received..:** 03/14/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total		WO#: EWEHG1CJ-MS/EWEHG1CK-MSD				MS Lot-Sample #: D2C140285-001	
	101	(85 - 115)			SW846 9012A	03/20/02	2080459
	105	(85 - 115)	3.4	(0-20)	SW846 9012A	03/20/02	2080459
		Dilution Factor: 1					
		Analysis Time..: 14:00					
Total Organic Carbon		WO#: EWEHG1CL-MS/EWEHG1CM-MSD				MS Lot-Sample #: D2C140285-001	
	101	(90 - 110)			SW846 9060	04/04/02	2095309
	101	(90 - 110)	0.03	(0-10)	SW846 9060	04/04/02	2095309
		Dilution Factor: 1					
		Analysis Time..: 17:00					

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: D2C140285 **Matrix.....:** WG
Date Sampled...: 03/13/02 10:30 **Date Received..:** 03/14/02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total			WO#: EWEHG1CJ-MS/EWEHG1CK-MSD				MS Lot-Sample #: D2C140285-001		
	0.0052	0.100	0.106	mg/L	101		SW846 9012A	03/20/02	2080459
	0.0052	0.100	0.110	mg/L	105	3.4	SW846 9012A	03/20/02	2080459
			Dilution Factor: 1						
			Analysis Time..: 14:00						
Total Organic Carbon			WO#: EWEHG1CL-MS/EWEHG1CM-MSD				MS Lot-Sample #: D2C140285-001		
	0.38	25.0	25.5	mg/L	101		SW846 9060	04/04/02	2095309
	0.38	25.0	25.5	mg/L	101	0.03	SW846 9060	04/04/02	2095309
			Dilution Factor: 1						
			Analysis Time..: 17:00						

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: D2C140285 **Matrix.....:** WATER
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate		WO#: EWCEN1DX-MS/EWCEN1D0-MSD				MS Lot-Sample #: D2C130228-001	
	97	(80 - 120)			EPA 314.0	03/15-03/16/02	2077520
	96	(80 - 120)	0.31	(0-20)	EPA 314.0	03/15-03/16/02	2077520
		Dilution Factor: 1					
		Analysis Time..: 00:03					
Total Organic Halogens		WO#: EWCEN1DN-MS/EWCEN1DP-MSD				MS Lot-Sample #: D2C130228-001	
	94	(79 - 115)			SW846 9020B	03/18-03/19/02	2080258
	96	(79 - 115)	2.0	(0-18)	SW846 9020B	03/18-03/19/02	2080258
		Dilution Factor: 1					
		Analysis Time..: 12:00					
Total Sulfide		WO#: EWCEN1DQ-MS/EWCEN1DR-MSD				MS Lot-Sample #: D2C130228-001	
	76	(70 - 130)			SW846 9030B/9034	03/19/02	2080204
	64 N	(70 - 130)	17	(0-20)	SW846 9030B/9034	03/19/02	2080204
		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 #...: D2C140285 **Matrix.....:** WATER
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate			WO#: EWCEN1DX-MS/EWCEN1D0-MSD				MS Lot-Sample #: D2C130228-001		
	ND	100	96.6	ug/L	97		EPA 314.0	03/15-03/16/02	2077520
	ND	100	96.3	ug/L	96	0.31	EPA 314.0	03/15-03/16/02	2077520
			Dilution Factor: 1						
			Analysis Time..: 00:03						
Total Organic Halogens			WO#: EWCEN1DN-MS/EWCEN1DP-MSD				MS Lot-Sample #: D2C130228-001		
	4.5	100	98.0	ug/L	94		SW846 9020B	03/18-03/19/02	2080258
	4.5	100	100	ug/L	96	2.0	SW846 9020B	03/18-03/19/02	2080258
			Dilution Factor: 1						
			Analysis Time..: 12:00						
Total Sulfide			WO#: EWCEN1DQ-MS/EWCEN1DR-MSD				MS Lot-Sample #: D2C130228-001		
	ND	21.1	16.6	mg/L	76		SW846 9030B/9	03/19/02	2080204
	ND	21.1	14.0 N	mg/L	64	17	SW846 9030B/9	03/19/02	2080204
			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.

5.1C
DG
3/14

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: F. Gebhardt — Seal Number: 243610
Team Leader: Project chief -- Fred Gebhardt	Delivered to Shipper by: F. Gebhardt — Airbill Number: 827368343931
	Sampling Status: ☐ Done ☒ Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
03/13/2002	1030	CAFB - B	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

Additional Comments: *The VOC's for this sample are in another cooler w/ seal no. 243620.

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	03/13/02	1600	SEVERN TRENT SERVICES 4955 Yarrow Street Arvada, CO 80002 ph: (303) 736-0184 Attention: Karen Kuoppala	Condition of Contents: Good
	[signature]	3/14/02	0845		Contents Temperature: 5.1
					Laboratory Project Number

IV-215

2.2°C
D.S.
3/14

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: F. Gebhardt — Seal Number: 243600
Team Leader: Project chief -- Fred Gebhardt	Delivered to Shipper by: F. Gebhardt — Airbill Number: 827368343931
	Sampling Status: ☐ Done ☒ Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
03/13/2002	1150	CAFB-4	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

Additional Comments: *The VOC's for this sample are in another cooler w/ seal no. 243620.

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 Fed Ex	03/13/02	1600	SEVERN TRENT SERVICES 4955 Yarrow Street Arvada, CO 80002 ph: (303) 736-0184 Attention: Karen Kuoppala	Condition of Contents: Good
	[signature]	3/14/02	0845		Contents Temperature: 2.2°C
					Laboratory Project Number

IV-216

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

0.5°C
D.G.
3/14

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: F. Gebhardt — Seal Number: 243590
Team Leader: Project chief -- Fred Gebhardt	Delivered to Shipper by: F. Gebhardt — Airbill Number: 827368343931
	Sampling Status: ☐ Done ☒ Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
03/13/2002	1315	CAFB -T	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

Additional Comments: The VOC's for this sample are in another cooler w/ seal no. 243620.

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 Fed Ex	03/13/02	1600	SEVERN TRENT SERVICES 4955 Yarrow Street Arvada, CO 80002 ph: (303) 736-0184 Attention: Karen Kuoppala	Condition of Contents: Good
	[signature]	3/14/02	0845		Contents Temperature: 0.5°C
					Laboratory Project Number

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

5.2°C
D.S
3/14

Project Name & Number	PACKING AND SHIPPING DETAILS	
Cannon Air Force Base, Ground Water Sampling 463536004	Packed and Sealed for Shipping by: F. Gebhardt	Seal Number: 243580
Sampling Location: Landfill-5, Cannon Air Force Base, NM	Delivered to Shipper by: F. Gebhardt	Airbill Number: 827368343931
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
03/13/2002	1430	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, Perchlorate EPA 314.0	Environmental Sample

Additional Comments: The VOC's for this sample are in another cooler w/seal no. 243620.

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 Fed Ex	03/13/02	1600	SEVERN TRENT SERVICES 4955 Yarrow Street Arvada, CO 80002 ph: (303) 736-0184 Attention: Karen Kuoppala	Condition of Contents: Good
	[signature]	3/14/02	0845		Contents Temperature: 5.2°C
					Laboratory Project Number

3-4°C
3/14

U.S. GEOLOGICAL SURVEY, WATER RES ICES 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: F. Gebhardt — Seal Number: 243620
Team Leader: Project chief -- Fred Gebhardt	Delivered to Shipper by: F. Gebhardt — Airbill Number: 827368343931
	Sampling Status: ☐ Done ☒ Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
03/13/2002	0900	CAFB - C	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
"	0800	CAFB-C-TB	Field QC	3	SW8260B (only)	Trip Blank

Additional Comments: This cooler also contains VOC's for samples CAFB-B, CAFB-S, CAFB-T, & CAFB-U.

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	03/13/02	1600	SEVERN TRENT SERVICES 4955 Yarrow Street Arvada, CO 80002 ph: (303) 736-0184 Attention: Karen Kuoppala	Condition of Contents: Good
	[signature]	3/14/02	0845		Contents Temperature: 3-4°C
					Laboratory Project Number

STL Denver

Sample Receiving Checklist

Lot #: D2C140285 Date/Time Received: 3/14/02 0845

Company Name & Sampling Site: US.GS - Cannon AFB

*Cooler #(s):	1	2	3	4	5			
Temperatures (°C):	5.1	2.2	0.5	5.2	3.4			

PM to Complete This Section: *Yes* *No*
Residual chlorine check required: ☐ ☐ 95 22 γ
Time Zone
• EDT/EST • CDT/CST • MDT/MST • PDT/PST • OTHER

Unpacking & Labeling Check Points:

N/A	Yes	No		Initials
☐	☒	☐	1. Cooler seals intact. (N/A if hand delivered)	DS
	☒	☐	2. Chain of custody present.	
	☐	☒	3. Bottles broken and/or are leaking, comment if yes.	
	☐	☒	4. Multiphase samples present? If yes, comment below.	
			PHOTOGRAPH BROKEN BOTTLES/MULTIPHASE SAMPLES	
	☒	☐	5. Proper container & preservatives used (ref. Attachment D of SOP# DEN-QA-0003)	
☐	☒	☐	6. pH of all samples checked and meet requirements, note exceptions.	
	☒	☐	7. Chain of custody includes "received by" and "relinquished" by signatures, dates, and times.	
	☐	☒	8. Receipt date(s) > 48 hours past the collection date(s)? If yes, notify PA/PM.	
	☒	☐	9. Chain of custody agrees with bottle count, comment if no.	
	☒	☐	10. Chain of custody agrees with labels, comment if no.	
☐	☒	☐	11. VOA samples filled completely, comment if no.	
☐	☒	☐	12. VOA vials preserved, check label. Preservative ☒HCl ☐4±2°C ☐Sodium Thiosulfate	
	☐	☒	13. Did samples require preservation with sodium thiosulfate?	
☒	☐	☐	14. If yes to #12, did the samples contain residual chlorine?	
☒	☐	☐	15. Sediment present in dissolved/filtered bottles.	
	☐	☒	16. Are analyses with short holding times requested?	
	☐	☒	17. Was a quick Turn Around (TAT) requested?	
☒	☐	☐	17. Is extra sample volume provided for MS, MSD or matrix duplicates?	
			DOUBLECHECK METALS,SAMPLE LABELS & SUBCONTRACT	
☐	☒	☐	18. Subcontract COC signed and sent with samples to bottle prep?	
	☒	☐	19. Were sample labels double-checked by a second person?	
☒	☐	☐	20. Were sample bottles and COC double checked for dissolved/filtered metals by a second person?	DS
☐	☒	☐	21. If applicable, were AFCEE Metals placed in the walkin refrigerator?	DS

Document any problems or discrepancies and the actions taken to resolve them on a Condition Upon Receipt Anomaly Report (CUR).

QC DATA ASSOCIATION SUMMARY

D2C150182

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
005	WG	MCAWW 160.1		2078516	2080219
	WG	MCAWW 353.2		2086228	
	WG	MCAWW 354.1		2074325	2074186
	WG	MCAWW 300.0A		2086174	2086073
	WG	SW846 6020		2078476	2078290
	WG	SW846 7470A		2085309	2085179
	WG	SW846 8082		2080152	
	WG	SW846 8081A		2080148	
	WG	SW846 8260B		2086353	2086190
	WG	SW846 6010B		2078369	2078209
	WG	SW846 9030B/9034		2080510	
	WG	EPA 314.0		2099259	2099126
006	WG	MCAWW 160.1		2078516	2080219
	WG	MCAWW 353.2		2086228	
	WG	MCAWW 354.1		2074325	2074186
	WG	MCAWW 300.0A		2086174	2086073
	WG	SW846 6020		2078476	2078290
	WG	SW846 7470A		2085309	2085179
	WG	SW846 8082		2080152	
	WG	SW846 8081A		2080148	
	WG	SW846 8260B		2086353	2086190
	WG	SW846 6010B		2078369	2078209
	WG	SW846 9030B/9034		2080510	
	WG	EPA 314.0		2099259	2099126

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D2C150182 **Work Order #...:** EW2JL1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C270000-353 EW2JL1AD-LCSD
Prep Date.....: 03/26/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2086353 **Analysis Time..:** 10:19
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	**90**	**(79 - 119)**			**SW846 8260B**
	90	**(79 - 119)**	**0.39**	**(0-20)**	**SW846 8260B**
Benzene	**99**	**(79 - 119)**			**SW846 8260B**
	100	**(79 - 119)**	**0.55**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**97**	**(76 - 116)**			**SW846 8260B**
	102	**(76 - 116)**	**5.0**	**(0-20)**	**SW846 8260B**
Toluene	**99**	**(75 - 122)**			**SW846 8260B**
	97	**(75 - 122)**	**1.7**	**(0-20)**	**SW846 8260B**
Trichloroethene	**100**	**(81 - 121)**			**SW846 8260B**
	102	**(81 - 121)**	**1.8**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(80 - 120)
	104	(80 - 120)
1,2-Dichloroethane-d4	107	(72 - 127)
	105	(72 - 127)
4-Bromofluorobenzene	97	(79 - 119)
	98	(79 - 119)
Toluene-d8	94	(79 - 119)
	94	(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 #...: D2C150182 **Work Order #...:** EW2JL1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C270000-353 EW2JL1AD-LCSD
Prep Date.....: 03/26/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2086353 **Analysis Time..:** 10:19
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethene	**10.0**	**9.01**	**ug/L**	**90**		**SW846 8260B**
	10.0	**8.98**	**ug/L**	**90**	**0.39**	**SW846 8260B**
Benzene	**10.0**	**9.94**	**ug/L**	**99**		**SW846 8260B**
	10.0	**9.99**	**ug/L**	**100**	**0.55**	**SW846 8260B**
Chlorobenzene	**10.0**	**9.69**	**ug/L**	**97**		**SW846 8260B**
	10.0	**10.2**	**ug/L**	**102**	**5.0**	**SW846 8260B**
Toluene	**10.0**	**9.90**	**ug/L**	**99**		**SW846 8260B**
	10.0	**9.73**	**ug/L**	**97**	**1.7**	**SW846 8260B**
Trichloroethene	**10.0**	**10.0**	**ug/L**	**100**		**SW846 8260B**
	10.0	**10.2**	**ug/L**	**102**	**1.8**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(80 - 120)
	104	(80 - 120)
1,2-Dichloroethane-d4	107	(72 - 127)
	105	(72 - 127)
4-Bromofluorobenzene	97	(79 - 119)
	98	(79 - 119)
Toluene-d8	94	(79 - 119)
	94	(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 #...: D2C150182 **Work Order #...:** EW2JL1AA **Matrix.....:** WATER
MB Lot-Sample #: D2C270000-353

Prep Date.....: 03/26/02 **Analysis Time..:** 11:09
Analysis Date..: 03/26/02 **Prep Batch #...:** 2086353
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	10	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
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
Dibromomethane	ND	1.0	ug/L	SW846 8260B
trans-1,4-Dichloro-2-butene	ND	1.0	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-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
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
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
1,1,1,2-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

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: D2C150182 **Work Order #...:** EW2JL1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Xylenes (total)	ND	1.0	ug/L	SW846 8260B
2-Butanone (MEK)	ND	5.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	1.0	ug/L	SW846 8260B
Acetonitrile	ND	20	ug/L	SW846 8260B
Acrolein	ND	20	ug/L	SW846 8260B
Chloroprene	ND	1.0	ug/L	SW846 8260B
Allyl chloride	ND	2.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	2.0	ug/L	SW846 8260B
1,4-Dioxane	ND	200	ug/L	SW846 8260B
Ethyl methacrylate	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
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	SW846 8260B
`,2-Dibromoethane (EDB)	ND	1.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(80 - 120)
1,2-Dichloroethane-d4	109	(72 - 127)
4-Bromofluorobenzene	99	(79 - 119)
Toluene-d8	92	(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 #: D2C270000-353 B **Work Order #:** EW2JL1AA **Matrix:** WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
unknown		1.7	M	4.794	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 #...: D2C150182 **Work Order #...:** EWF9F1CX-MS **Matrix.....:** WATER
MS Lot-Sample #: D2C150221-001 EWF9F1C0-MSD
Date Sampled...: 03/14/02 07:50 **Date Received..:** 03/15/02
Prep Date.....: 03/26/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2086353 **Analysis Time..:** 15:14
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	**91**	**(79 - 119)**			**SW846 8260B**
	92	**(79 - 119)**	**1.1**	**(0-20)**	**SW846 8260B**
Benzene	**100**	**(79 - 119)**			**SW846 8260B**
	102	**(79 - 119)**	**1.9**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**101**	**(76 - 116)**			**SW846 8260B**
	104	**(76 - 116)**	**2.6**	**(0-20)**	**SW846 8260B**
Toluene	**98**	**(75 - 122)**			**SW846 8260B**
	103	**(75 - 122)**	**4.8**	**(0-20)**	**SW846 8260B**
Trichloroethene	**105**	**(81 - 121)**			**SW846 8260B**
	105	**(81 - 121)**	**0.54**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(80 - 120)
	102	(80 - 120)
1,2-Dichloroethane-d4	107	(72 - 127)
	109	(72 - 127)
4-Bromofluorobenzene	100	(79 - 119)
	98	(79 - 119)
Toluene-d8	95	(79 - 119)
	94	(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 #...: D2C150182 **Work Order #...:** EWF9F1CX-MS **Matrix.....:** WATER
MS Lot-Sample #: D2C150221-001 EWF9F1C0-MSD
Date Sampled...: 03/14/02 07:50 **Date Received..:** 03/15/02
Prep Date.....: 03/26/02 **Analysis Date..:** 03/26/02
Prep Batch #...: 2086353 **Analysis Time..:** 15:14
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1-Dichloroethene	ND	10.0	9.06	ug/L	91		SW846 8260B
	ND	10.0	9.16	ug/L	92	1.1	SW846 8260B
Benzene	ND	10.0	10.0	ug/L	100		SW846 8260B
	ND	10.0	10.2	ug/L	102	1.9	SW846 8260B
Chlorobenzene	ND	10.0	10.1	ug/L	101		SW846 8260B
	ND	10.0	10.4	ug/L	104	2.6	SW846 8260B
Toluene	ND	10.0	9.78	ug/L	98		SW846 8260B
	ND	10.0	10.3	ug/L	103	4.8	SW846 8260B
Trichloroethene	ND	10.0	10.5	ug/L	105		SW846 8260B
	ND	10.0	10.5	ug/L	105	0.54	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(80 - 120)
	102	(80 - 120)
1,2-Dichloroethane-d4	107	(72 - 127)
	109	(72 - 127)
4-Bromofluorobenzene	100	(79 - 119)
	98	(79 - 119)
Toluene-d8	95	(79 - 119)
	94	(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 #...: D2C150182 **Work Order #...:** EWPFP1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C210000-148 EWPFP1AD-LCSD
Prep Date.....: 03/21/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2080148 **Analysis Time..:** 20:01
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
4,4'-DDT	**93**	**(68 - 147)**			**SW846 8081A**
	98	**(68 - 147)**	**5.5**	**(0-30)**	**SW846 8081A**
Aldrin	**82**	**(55 - 137)**			**SW846 8081A**
	91	**(55 - 137)**	**9.7**	**(0-30)**	**SW846 8081A**
Dieldrin	**90**	**(68 - 146)**			**SW846 8081A**
	97	**(68 - 146)**	**8.0**	**(0-30)**	**SW846 8081A**
Endrin	**87**	**(66 - 143)**			**SW846 8081A**
	86	**(66 - 143)**	**0.84**	**(0-30)**	**SW846 8081A**
gamma-BHC (Lindane)	**87**	**(68 - 142)**			**SW846 8081A**
	94	**(68 - 142)**	**8.3**	**(0-30)**	**SW846 8081A**
Heptachlor	**86**	**(59 - 143)**			**SW846 8081A**
	93	**(59 - 143)**	**8.2**	**(0-30)**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	104	(15 - 162)
	107	(15 - 162)
Tetrachloro-m-xylene	92	(49 - 133)
	96	(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 #...: D2C150182 **Work Order #...:** EWPFP1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C210000-148 EWPFP1AD-LCSD
Prep Date.....: 03/21/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2080148 **Analysis Time..:** 20:01
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
4,4'-DDT	**0.500**	**0.464**	**ug/L**	**93**		**SW846 8081A**
	0.500	**0.491**	**ug/L**	**98**	**5.5**	**SW846 8081A**
Aldrin	**0.500**	**0.412**	**ug/L**	**82**		**SW846 8081A**
	0.500	**0.454**	**ug/L**	**91**	**9.7**	**SW846 8081A**
Dieldrin	**0.500**	**0.449**	**ug/L**	**90**		**SW846 8081A**
	0.500	**0.486**	**ug/L**	**97**	**8.0**	**SW846 8081A**
Endrin	**0.500**	**0.433**	**ug/L**	**87**		**SW846 8081A**
	0.500	**0.429**	**ug/L**	**86**	**0.84**	**SW846 8081A**
gamma-BHC (Lindane)	**0.500**	**0.435**	**ug/L**	**87**		**SW846 8081A**
	0.500	**0.473**	**ug/L**	**94**	**8.3**	**SW846 8081A**
Heptachlor	**0.500**	**0.429**	**ug/L**	**86**		**SW846 8081A**
	0.500	**0.466**	**ug/L**	**93**	**8.2**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	104	(15 - 162)
	107	(15 - 162)
Tetrachloro-m-xylene	92	(49 - 133)
	96	(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 #...: D2C150182 **Work Order #...:** EWPFP1AA **Matrix.....:** WATER
MB Lot-Sample #: D2C210000-148

Prep Date.....: 03/21/02 **Analysis Time..:** 22:53
Analysis Date..: 03/22/02 **Prep Batch #...:** 2080148
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
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
eptachlor	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
alpha-Chlordane	ND	0.050	ug/L	SW846 8081A
gamma-Chlordane	ND	0.050	ug/L	SW846 8081A
Diallate	ND	1.0	ug/L	SW846 8081A
Endrin ketone	ND	0.050	ug/L	SW846 8081A
Isodrin	ND	0.10	ug/L	SW846 8081A
Kepone	ND	1.0	ug/L	SW846 8081A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	95	(15 - 162)
Tetrachloro-m-xylene	86	(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 #...: D2C150182 **Work Order #...:** EWPG11AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C210000-152 EWPG11AD-LCSD
Prep Date.....: 03/21/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2080152 **Analysis Time..:** 13:00
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aroclor 1016	**83**	**(65 - 131)**			**SW846 8082**
	86	**(65 - 131)**	**3.6**	**(0-30)**	**SW846 8082**
Aroclor 1260	**78**	**(55 - 139)**			**SW846 8082**
	80	**(55 - 139)**	**3.3**	**(0-30)**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	74	(41 - 107)
	78	(41 - 107)
Decachlorobiphenyl	99	(46 - 131)
	103	(46 - 131)

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 #...: D2C150182 **Work Order #...:** EWPG11AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2C210000-152 EWPG11AD-LCSD
Prep Date.....: 03/21/02 **Analysis Date..:** 03/22/02
Prep Batch #...: 2080152 **Analysis Time..:** 13:00
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Aroclor 1016	**2.00**	**1.66**	**ug/L**	**83**		**SW846 8082**
	2.00	**1.72**	**ug/L**	**86**	**3.6**	**SW846 8082**
Aroclor 1260	**2.00**	**1.56**	**ug/L**	**78**		**SW846 8082**
	2.00	**1.61**	**ug/L**	**80**	**3.3**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	74	(41 - 107)
	78	(41 - 107)
Decachlorobiphenyl	99	(46 - 131)
	103	(46 - 131)

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 #...: D2C150182 **Work Order #...:** EWPG11AA **Matrix.....:** WATER
MB Lot-Sample #: D2C210000-152

Prep Date.....: 03/21/02 **Analysis Time..:** 12:34
Analysis Date..: 03/22/02 **Prep Batch #...:** 2080152
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
Tetrachloro-m-xylene	71	(41 - 107)
Decachlorobiphenyl	101	(46 - 131)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D2C150182 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Aluminum	101	(88 - 108)			SW846 6010B	03/22-03/25/02	2078369
	101	(88 - 108)	0.14	(0-20)	SW846 6010B	03/22-03/25/02	2078369
		Dilution Factor: 1					
Barium	104	(92 - 113)			SW846 6010B	03/22-03/26/02	2078369
	104	(92 - 113)	0.12	(0-20)	SW846 6010B	03/22-03/26/02	2078369
		Dilution Factor: 1					
Beryllium	99	(89 - 112)			SW846 6010B	03/22-03/26/02	2078369
	98	(89 - 112)	0.48	(0-20)	SW846 6010B	03/22-03/26/02	2078369
		Dilution Factor: 1					
Calcium	104	(90 - 110)			SW846 6010B	03/22-03/25/02	2078369
	104	(90 - 110)	0.04	(0-20)	SW846 6010B	03/22-03/25/02	2078369
		Dilution Factor: 1					
Cobalt	96	(88 - 108)			SW846 6010B	03/22-03/26/02	2078369
	95	(88 - 108)	0.50	(0-20)	SW846 6010B	03/22-03/26/02	2078369
		Dilution Factor: 1					
Copper	100	(90 - 110)			SW846 6010B	03/22-03/26/02	2078369
	99	(90 - 110)	0.24	(0-20)	SW846 6010B	03/22-03/26/02	2078369
		Dilution Factor: 1					
Iron	105	(90 - 110)			SW846 6010B	03/22-03/25/02	2078369
	105	(90 - 110)	0.21	(0-20)	SW846 6010B	03/22-03/25/02	2078369
		Dilution Factor: 1					
Magnesium	104	(92 - 112)			SW846 6010B	03/22-03/25/02	2078369
	104	(92 - 112)	0.43	(0-20)	SW846 6010B	03/22-03/25/02	2078369
		Dilution Factor: 1					
Manganese	100	(90 - 110)			SW846 6010B	03/22-03/26/02	2078369
	100	(90 - 110)	0.48	(0-20)	SW846 6010B	03/22-03/26/02	2078369
		Dilution Factor: 1					
Nickel	101	(90 - 111)			SW846 6010B	03/22-03/26/02	2078369
	101	(90 - 111)	0.19	(0-20)	SW846 6010B	03/22-03/26/02	2078369
		Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D2C150182 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Potassium	98	(88 - 109)			SW846 6010B	03/22-03/25/02	2078369
	98	(88 - 109)	0.22	(0-20)	SW846 6010B	03/22-03/25/02	2078369
		Dilution Factor: 1					
Sodium	106	(91 - 113)			SW846 6010B	03/22-03/25/02	2078369
	104	(91 - 113)	2.1	(0-20)	SW846 6010B	03/22-03/25/02	2078369
		Dilution Factor: 1					
Tin	96	(87 - 109)			SW846 6010B	03/22-03/26/02	2078369
	96	(87 - 109)	0.08	(0-20)	SW846 6010B	03/22-03/26/02	2078369
		Dilution Factor: 1					
Vanadium	99	(89 - 113)			SW846 6010B	03/22-03/26/02	2078369
	99	(89 - 113)	0.33	(0-20)	SW846 6010B	03/22-03/26/02	2078369
		Dilution Factor: 1					
Zinc	94	(84 - 111)			SW846 6010B	03/22-03/26/02	2078369
	94	(84 - 111)	0.17	(0-20)	SW846 6010B	03/22-03/26/02	2078369
		Dilution Factor: 1					
Molybdenum	95	(89 - 109)			SW846 6010B	03/22-03/26/02	2078369
	95	(89 - 109)	0.19	(0-20)	SW846 6010B	03/22-03/26/02	2078369
		Dilution Factor: 1					
Antimony	100	(86 - 119)			SW846 6020	03/25-03/27/02	2078476
	100	(86 - 119)	0.16	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Arsenic	97	(86 - 114)			SW846 6020	03/25-03/27/02	2078476
	95	(86 - 114)	2.4	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Cadmium	100	(85 - 115)			SW846 6020	03/25-03/27/02	2078476
	100	(85 - 115)	0.15	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Chromium	98	(85 - 115)			SW846 6020	03/25-03/27/02	2078476
	99	(85 - 115)	1.2	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D2C150182 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Lead	102	(85 - 115)			SW846 6020	03/25-03/27/02	2078476
	101	(85 - 115)	1.2	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Selenium	94	(85 - 115)			SW846 6020	03/25-03/27/02	2078476
	92	(85 - 115)	1.8	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Silver	101	(85 - 114)			SW846 6020	03/25-03/27/02	2078476
	99	(85 - 114)	1.6	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Thallium	100	(85 - 115)			SW846 6020	03/25-03/27/02	2078476
	101	(85 - 115)	0.78	(0-20)	SW846 6020	03/25-03/27/02	2078476
		Dilution Factor: 1					
Mercury	94	(84 - 114)			SW846 7470A	04/01/02	2085309
	93	(84 - 114)	1.1	(0-10)	SW846 7470A	04/01/02	2085309
		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 #...: D2C150182 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Aluminum	2000	2020	ug/L	101		SW846 6010B	03/22-03/25/02	2078369
	2000	2020	ug/L	101	0.14	SW846 6010B	03/22-03/25/02	2078369
			Dilution Factor: 1					
Barium	2000	2080	ug/L	104		SW846 6010B	03/22-03/26/02	2078369
	2000	2080	ug/L	104	0.12	SW846 6010B	03/22-03/26/02	2078369
			Dilution Factor: 1					
Beryllium	50.0	49.5	ug/L	99		SW846 6010B	03/22-03/26/02	2078369
	50.0	49.2	ug/L	98	0.48	SW846 6010B	03/22-03/26/02	2078369
			Dilution Factor: 1					
Calcium	50000	52200	ug/L	104		SW846 6010B	03/22-03/25/02	2078369
	50000	52200	ug/L	104	0.04	SW846 6010B	03/22-03/25/02	2078369
			Dilution Factor: 1					
Cobalt	500	478	ug/L	96		SW846 6010B	03/22-03/26/02	2078369
	500	476	ug/L	95	0.50	SW846 6010B	03/22-03/26/02	2078369
			Dilution Factor: 1					
Copper	250	249	ug/L	100		SW846 6010B	03/22-03/26/02	2078369
	250	249	ug/L	99	0.24	SW846 6010B	03/22-03/26/02	2078369
			Dilution Factor: 1					
Iron	1000	1050	ug/L	105		SW846 6010B	03/22-03/25/02	2078369
	1000	1050	ug/L	105	0.21	SW846 6010B	03/22-03/25/02	2078369
			Dilution Factor: 1					
Magnesium	50000	52100	ug/L	104		SW846 6010B	03/22-03/25/02	2078369
	50000	51900	ug/L	104	0.43	SW846 6010B	03/22-03/25/02	2078369
			Dilution Factor: 1					
Manganese	500	502	ug/L	100		SW846 6010B	03/22-03/26/02	2078369
	500	500	ug/L	100	0.48	SW846 6010B	03/22-03/26/02	2078369
			Dilution Factor: 1					
Nickel	500	505	ug/L	101		SW846 6010B	03/22-03/26/02	2078369
	500	504	ug/L	101	0.19	SW846 6010B	03/22-03/26/02	2078369
			Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D2C150182 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Potassium	50000	49000	ug/L	98		SW846 6010B	03/22-03/25/02	2078369
	50000	48900	ug/L	98	0.22	SW846 6010B	03/22-03/25/02	2078369
			Dilution Factor: 1					
Sodium	50000	53100	ug/L	106		SW846 6010B	03/22-03/25/02	2078369
	50000	52000	ug/L	104	2.1	SW846 6010B	03/22-03/25/02	2078369
			Dilution Factor: 1					
Tin	2000	1920	ug/L	96		SW846 6010B	03/22-03/26/02	2078369
	2000	1920	ug/L	96	0.08	SW846 6010B	03/22-03/26/02	2078369
			Dilution Factor: 1					
Vanadium	500	495	ug/L	99		SW846 6010B	03/22-03/26/02	2078369
	500	493	ug/L	99	0.33	SW846 6010B	03/22-03/26/02	2078369
			Dilution Factor: 1					
Zinc	500	469	ug/L	94		SW846 6010B	03/22-03/26/02	2078369
	500	468	ug/L	94	0.17	SW846 6010B	03/22-03/26/02	2078369
			Dilution Factor: 1					
Molybdenum	1000	948	ug/L	95		SW846 6010B	03/22-03/26/02	2078369
	1000	946	ug/L	95	0.19	SW846 6010B	03/22-03/26/02	2078369
			Dilution Factor: 1					
Antimony	200	200	ug/L	100		SW846 6020	03/25-03/27/02	2078476
	200	200	ug/L	100	0.16	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Arsenic	200	194	ug/L	97		SW846 6020	03/25-03/27/02	2078476
	200	189	ug/L	95	2.4	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Cadmium	200	200	ug/L	100		SW846 6020	03/25-03/27/02	2078476
	200	200	ug/L	100	0.15	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Chromium	200	197	ug/L	98		SW846 6020	03/25-03/27/02	2078476
	200	199	ug/L	99	1.2	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D2C150182 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Lead	200	204	ug/L	102		SW846 6020	03/25-03/27/02	2078476
	200	201	ug/L	101	1.2	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Selenium	200	187	ug/L	94		SW846 6020	03/25-03/27/02	2078476
	200	184	ug/L	92	1.8	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Silver	200	202	ug/L	101		SW846 6020	03/25-03/27/02	2078476
	200	199	ug/L	99	1.6	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Thallium	200	201	ug/L	100		SW846 6020	03/25-03/27/02	2078476
	200	202	ug/L	101	0.78	SW846 6020	03/25-03/27/02	2078476
			Dilution Factor: 1					
Mercury	5.00	4.71	ug/L	94		SW846 7470A	04/01/02	2085309
	5.00	4.66	ug/L	93	1.1	SW846 7470A	04/01/02	208530
			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 #...: D2C150182 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: D2C190000-369 **Prep Batch #...:** 2078369						
Aluminum	ND	100	ug/L	SW846 6010B	03/22-03/25/02	EWLCA1AA
		Dilution Factor: 1				
		Analysis Time..: 16:18				
Barium	ND	10.0	ug/L	SW846 6010B	03/22-03/26/02	EWLCA1AC
		Dilution Factor: 1				
		Analysis Time..: 22:55				
Beryllium	**0.22 B**	**2.0**	**ug/L**	**SW846 6010B**	**03/22-03/26/02**	**EWLCA1AD**
		Dilution Factor: 1				
		Analysis Time..: 22:55				
Calcium	ND	200	ug/L	SW846 6010B	03/22-03/25/02	EWLCA1AE
		Dilution Factor: 1				
		Analysis Time..: 16:18				
Cobalt	ND	10.0	ug/L	SW846 6010B	03/22-03/26/02	EWLCA1AQ
		Dilution Factor: 1				
		Analysis Time..: 22:55				
Copper	ND	20.0	ug/L	SW846 6010B	03/22-03/26/02	EWLCA1AG
		Dilution Factor: 1				
		Analysis Time..: 22:55				
Iron	ND	100	ug/L	SW846 6010B	03/22-03/25/02	EWLCA1AH
		Dilution Factor: 1				
		Analysis Time..: 16:18				
Magnesium	ND	200	ug/L	SW846 6010B	03/22-03/25/02	EWLCA1AK
		Dilution Factor: 1				
		Analysis Time..: 16:18				
Manganese	ND	10.0	ug/L	SW846 6010B	03/22-03/26/02	EWLCA1AL
		Dilution Factor: 1				
		Analysis Time..: 22:55				
Nickel	ND	40.0	ug/L	SW846 6010B	03/22-03/26/02	EWLCA1AN
		Dilution Factor: 1				
		Analysis Time..: 22:55				
Potassium	ND	3000	ug/L	SW846 6010B	03/22-03/25/02	EWLCA1AJ
		Dilution Factor: 1				
		Analysis Time..: 16:18				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D2C150182 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Sodium	ND	5000	ug/L	SW846 6010B	03/22-03/25/02	EWLCA1AM
		Dilution Factor: 1				
		Analysis Time..: 16:18				
Tin	ND	100	ug/L	SW846 6010B	03/22-03/26/02	EWLCA1AR
		Dilution Factor: 1				
		Analysis Time..: 22:55				
Vanadium	ND	10.0	ug/L	SW846 6010B	03/22-03/26/02	EWLCA1DT
		Dilution Factor: 1				
		Analysis Time..: 22:55				
Zinc	ND	20.0	ug/L	SW846 6010B	03/22-03/26/02	EWLCA1DU
		Dilution Factor: 1				
		Analysis Time..: 22:55				
Molybdenum	ND	20.0	ug/L	SW846 6010B	03/22-03/26/02	EWLCA1A3
		Dilution Factor: 1				
		Analysis Time..: 22:55				

MB Lot-Sample #: D2C190000-476 **Prep Batch #...:** 2078476

Antimony	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWLRM1AA
		Dilution Factor: 1				
		Analysis Time..: 16:12				
Arsenic	ND	5.0	ug/L	SW846 6020	03/25-03/27/02	EWLRM1AC
		Dilution Factor: 1				
		Analysis Time..: 16:12				
Cadmium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWLRM1AD
		Dilution Factor: 1				
		Analysis Time..: 16:12				
Chromium	**0.64 B**	**1.0**	**ug/L**	**SW846 6020**	**03/25-03/27/02**	**EWLRM1AJ**
		Dilution Factor: 1				
		Analysis Time..: 16:12				
Lead	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWLRM1AE
		Dilution Factor: 1				
		Analysis Time..: 16:12				
Selenium	ND	5.0	ug/L	SW846 6020	03/25-03/27/02	EWLRM1AF
		Dilution Factor: 1				
		Analysis Time..: 16:12				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D2C150182 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWLRM1AG
		Dilution Factor: 1				
		Analysis Time..: 16:12				
Thallium	ND	1.0	ug/L	SW846 6020	03/25-03/27/02	EWLRM1AH
		Dilution Factor: 1				
		Analysis Time..: 16:12				

NOTE(S):

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

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D2C150182 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: D2C260000-309 **Prep Batch #...:** 2085309						
Mercury	ND	0.20	ug/L	SW846 7470A	04/01/02	EW0G21AA
		Dilution Factor: 1				
		Analysis Time..: 21:40				

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D2C150182 **Matrix.....:** WATER
Date Sampled...: 03/15/02 09:40 **Date Received..:** 03/15/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D2C150272-001 **Prep Batch #...:** 2078369							
Aluminum	136 N	(88 - 108)			SW846 6010B	03/22-03/25/02	EWGRM1CV
	138 N	(88 - 108)	1.3	(0-20)	SW846 6010B	03/22-03/25/02	EWGRM1CW
		Dilution Factor: 1					
		Analysis Time..: 17:12					
Barium	108	(92 - 113)			SW846 6010B	03/22-03/27/02	EWGRM1CX
	108	(92 - 113)	0.26	(0-20)	SW846 6010B	03/22-03/27/02	EWGRM1C0
		Dilution Factor: 1					
		Analysis Time..: 08:03					
Beryllium	101	(89 - 112)			SW846 6010B	03/22-03/27/02	EWGRM1C1
	101	(89 - 112)	0.21	(0-20)	SW846 6010B	03/22-03/27/02	EWGRM1C2
		Dilution Factor: 1					
		Analysis Time..: 08:03					
Calcium	108	(90 - 110)			SW846 6010B	03/22-03/25/02	EWGRM1C3
	104	(90 - 110)	1.5	(0-20)	SW846 6010B	03/22-03/25/02	EWGRM1C4
		Dilution Factor: 1					
		Analysis Time..: 17:12					
Cobalt	98	(88 - 108)			SW846 6010B	03/22-03/27/02	EWGRM1DQ
	98	(88 - 108)	0.09	(0-20)	SW846 6010B	03/22-03/27/02	EWGRM1DR
		Dilution Factor: 1					
		Analysis Time..: 08:03					
Copper	104	(90 - 110)			SW846 6010B	03/22-03/27/02	EWGRM1C7
	104	(90 - 110)	0.25	(0-20)	SW846 6010B	03/22-03/27/02	EWGRM1C8
		Dilution Factor: 1					
		Analysis Time..: 08:03					
Iron	127 N	(90 - 110)			SW846 6010B	03/22-03/25/02	EWGRM1C9
	128 N	(90 - 110)	0.95	(0-20)	SW846 6010B	03/22-03/25/02	EWGRM1DA
		Dilution Factor: 1					
		Analysis Time..: 17:12					
Magnesium	106	(92 - 112)			SW846 6010B	03/22-03/25/02	EWGRM1DE
	106	(92 - 112)	0.36	(0-20)	SW846 6010B	03/22-03/25/02	EWGRM1DF
		Dilution Factor: 1					
		Analysis Time..: 17:12					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D2C150182 **Matrix.....:** WATER
Date Sampled...: 03/15/02 09:40 **Date Received..:** 03/15/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	104	(90 - 110)			SW846 6010B	03/22-03/27/02	EWGRM1DG
	104	(90 - 110)	0.05	(0-20)	SW846 6010B	03/22-03/27/02	EWGRM1DH
		Dilution Factor: 1					
		Analysis Time..: 08:03					
Nickel	103	(90 - 111)			SW846 6010B	03/22-03/27/02	EWGRM1DL
	103	(90 - 111)	0.69	(0-20)	SW846 6010B	03/22-03/27/02	EWGRM1DM
		Dilution Factor: 1					
		Analysis Time..: 08:03					
Potassium	100	(88 - 109)			SW846 6010B	03/22-03/25/02	EWGRM1DC
	99	(88 - 109)	0.81	(0-20)	SW846 6010B	03/22-03/25/02	EWGRM1DD
		Dilution Factor: 1					
		Analysis Time..: 17:12					
Sodium	108	(91 - 113)			SW846 6010B	03/22-03/25/02	EWGRM1DJ
	106	(91 - 113)	0.93	(0-20)	SW846 6010B	03/22-03/25/02	EWGRM1DK
		Dilution Factor: 1					
		Analysis Time..: 17:12					
Tin	100	(87 - 109)			SW846 6010B	03/22-03/27/02	EWGRM1DT
	100	(87 - 109)	0.11	(0-20)	SW846 6010B	03/22-03/27/02	EWGRM1DU
		Dilution Factor: 1					
		Analysis Time..: 08:03					
Vanadium	104	(89 - 113)			SW846 6010B	03/22-03/27/02	EWGRM1EK
	104	(89 - 113)	0.04	(0-20)	SW846 6010B	03/22-03/27/02	EWGRM1EL
		Dilution Factor: 1					
		Analysis Time..: 08:03					
Zinc	96	(84 - 111)			SW846 6010B	03/22-03/27/02	EWGRM1EN
	96	(84 - 111)	0.51	(0-20)	SW846 6010B	03/22-03/27/02	EWGRM1EP
		Dilution Factor: 1					
		Analysis Time..: 08:03					
Molybdenum	99	(89 - 109)			SW846 6010B	03/22-03/27/02	EWGRM1EE
	99	(89 - 109)	0.18	(0-20)	SW846 6010B	03/22-03/27/02	EWGRM1EF
		Dilution Factor: 1					
		Analysis Time..: 08:03					

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 #...: D2C150182 **Matrix.....:** WATER
Date Sampled...: 03/15/02 09:40 **Date Received..:** 03/15/02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D2C150272-001 **Prep Batch #...:** 2078369									
Aluminum									
	172	2000	2890 N	ug/L	136		SW846 6010B	03/22-03/25/02	EWGRM1CV
	172	2000	2930 N	ug/L	138	1.3	SW846 6010B	03/22-03/25/02	EWGRM1CW
			Dilution Factor: 1						
			Analysis Time..: 17:12						
Barium									
	149	2000	2310	ug/L	108		SW846 6010B	03/22-03/27/02	EWGRM1CX
	149	2000	2310	ug/L	108	0.26	SW846 6010B	03/22-03/27/02	EWGRM1C0
			Dilution Factor: 1						
			Analysis Time..: 08:03						
Beryllium									
	ND	50.0	50.6	ug/L	101		SW846 6010B	03/22-03/27/02	EWGRM1C1
	ND	50.0	50.5	ug/L	101	0.21	SW846 6010B	03/22-03/27/02	EWGRM1C2
			Dilution Factor: 1						
			Analysis Time..: 08:03						
Calcium									
	84900	50000	139000	ug/L	108		SW846 6010B	03/22-03/25/02	EWGRM1C3
	84900	50000	137000	ug/L	104	1.5	SW846 6010B	03/22-03/25/02	EWGRM1C4
			Dilution Factor: 1						
			Analysis Time..: 17:12						
Cobalt									
	ND	500	491	ug/L	98		SW846 6010B	03/22-03/27/02	EWGRM1DQ
	ND	500	491	ug/L	98	0.09	SW846 6010B	03/22-03/27/02	EWGRM1DR
			Dilution Factor: 1						
			Analysis Time..: 08:03						
Copper									
	17.7	250	277	ug/L	104		SW846 6010B	03/22-03/27/02	EWGRM1C7
	17.7	250	278	ug/L	104	0.25	SW846 6010B	03/22-03/27/02	EWGRM1C8
			Dilution Factor: 1						
			Analysis Time..: 08:03						
Iron									
	277	1000	1540 N	ug/L	127		SW846 6010B	03/22-03/25/02	EWGRM1C9
	277	1000	1560 N	ug/L	128	0.95	SW846 6010B	03/22-03/25/02	EWGRM1DA
			Dilution Factor: 1						
			Analysis Time..: 17:12						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D2C150182 **Matrix.....:** WATER
Date Sampled...: 03/15/02 09:40 **Date Received..:** 03/15/02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Magnesium									
	14900	50000	67900	ug/L	106		SW846 6010B	03/22-03/25/02	EWGRM1DE
	14900	50000	67700	ug/L	106	0.36	SW846 6010B	03/22-03/25/02	EWGRM1DF
			Dilution Factor: 1						
			Analysis Time..: 17:12						
Manganese									
	17.6	500	536	ug/L	104		SW846 6010B	03/22-03/27/02	EWGRM1DG
	17.6	500	536	ug/L	104	0.05	SW846 6010B	03/22-03/27/02	EWGRM1DH
			Dilution Factor: 1						
			Analysis Time..: 08:03						
Nickel									
	ND	500	513	ug/L	103		SW846 6010B	03/22-03/27/02	EWGRM1DL
	ND	500	517	ug/L	103	0.69	SW846 6010B	03/22-03/27/02	EWGRM1DM
			Dilution Factor: 1						
			Analysis Time..: 08:03						
Potassium									
	800	50000	50700	ug/L	100		SW846 6010B	03/22-03/25/02	EWGRM1[illegible]
	800	50000	50300	ug/L	99	0.81	SW846 6010B	03/22-03/25/02	EWGRM1DD
			Dilution Factor: 1						
			Analysis Time..: 17:12						
Sodium									
	24400	50000	78300	ug/L	108		SW846 6010B	03/22-03/25/02	EWGRM1DJ
	24400	50000	77600	ug/L	106	0.93	SW846 6010B	03/22-03/25/02	EWGRM1DK
			Dilution Factor: 1						
			Analysis Time..: 17:12						
Tin									
	ND	2000	2000	ug/L	100		SW846 6010B	03/22-03/27/02	EWGRM1DT
	ND	2000	2000	ug/L	100	0.11	SW846 6010B	03/22-03/27/02	EWGRM1DU
			Dilution Factor: 1						
			Analysis Time..: 08:03						
Vanadium									
	5.0	500	524	ug/L	104		SW846 6010B	03/22-03/27/02	EWGRM1EK
	5.0	500	523	ug/L	104	0.04	SW846 6010B	03/22-03/27/02	EWGRM1EL
			Dilution Factor: 1						
			Analysis Time..: 08:03						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D2C150182 **Matrix.....:** WATER
Date Sampled...: 03/15/02 09:40 **Date Received..:** 03/15/02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc									
	18.2	500	499	ug/L	96		SW846 6010B	03/22-03/27/02	EWGRM1EN
	18.2	500	496	ug/L	96	0.51	SW846 6010B	03/22-03/27/02	EWGRM1EP
			Dilution Factor: 1						
			Analysis Time..: 08:03						
Molybdenum									
	ND	1000	989	ug/L	99		SW846 6010B	03/22-03/27/02	EWGRM1EE
	ND	1000	991	ug/L	99	0.18	SW846 6010B	03/22-03/27/02	EWGRM1EF
			Dilution Factor: 1						
			Analysis Time..: 08:03						

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 #...: D2C150182 **Matrix.....:** WATER
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D2C130228-001 **Prep Batch #...:** 2078476							
Antimony	100	(86 - 119)			SW846 6020	03/25-03/27/02	EWCEN1CL
	100	(86 - 119)	0.64	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1CM
		Dilution Factor: 1					
		Analysis Time..: 20:26					
Arsenic	98	(86 - 114)			SW846 6020	03/25-03/27/02	EWCEN1CN
	97	(86 - 114)	0.80	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1CP
		Dilution Factor: 1					
		Analysis Time..: 20:26					
Cadmium	100	(85 - 115)			SW846 6020	03/25-03/27/02	EWCEN1CQ
	100	(85 - 115)	0.56	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1CR
		Dilution Factor: 1					
		Analysis Time..: 20:26					
Chromium	99	(85 - 115)			SW846 6020	03/25-03/27/02	EWCEN1C3
	98	(85 - 115)	0.95	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1C4
		Dilution Factor: 1					
		Analysis Time..: 20:26					
Lead	103	(85 - 115)			SW846 6020	03/25-03/27/02	EWCEN1CT
	102	(85 - 115)	0.37	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1CU
		Dilution Factor: 1					
		Analysis Time..: 20:26					
Selenium	93	(85 - 115)			SW846 6020	03/25-03/27/02	EWCEN1CV
	94	(85 - 115)	1.4	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1CW
		Dilution Factor: 1					
		Analysis Time..: 20:26					
Silver	89	(85 - 114)			SW846 6020	03/25-03/27/02	EWCEN1CX
	96	(85 - 114)	7.6	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1C0
		Dilution Factor: 1					
		Analysis Time..: 20:26					
Thallium	101	(85 - 115)			SW846 6020	03/25-03/27/02	EWCEN1C1
	101	(85 - 115)	0.02	(0-20)	SW846 6020	03/25-03/27/02	EWCEN1C2
		Dilution Factor: 1					
		Analysis Time..: 20:26					

MS Lot-Sample #: D2C130228-001 **Prep Batch #...:** 2085309

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D2C150182 **Matrix.....:** WATER
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Mercury	89	(84 - 114)			SW846 7470A	04/01/02	EWCEN1C5
	90	(84 - 114)	0.67	(0-10)	SW846 7470A	04/01/02	EWCEN1C6

Dilution Factor: 1
Analysis Time..: 21:56

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D2C150182 **Matrix.....:** WATER
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D2C130228-001 **Prep Batch #...:** 2078476									
Antimony									
	ND	200	201	ug/L	100		SW846 6020	03/25-03/27/02	EWCEN1CL
	ND	200	199	ug/L	100	0.64	SW846 6020	03/25-03/27/02	EWCEN1CM
			Dilution Factor: 1						
			Analysis Time..: 20:26						
Arsenic									
	4.6	200	201	ug/L	98		SW846 6020	03/25-03/27/02	EWCEN1CN
	4.6	200	199	ug/L	97	0.80	SW846 6020	03/25-03/27/02	EWCEN1CP
			Dilution Factor: 1						
			Analysis Time..: 20:26						
Cadmium									
	ND	200	201	ug/L	100		SW846 6020	03/25-03/27/02	EWCEN1CQ
	ND	200	200	ug/L	100	0.56	SW846 6020	03/25-03/27/02	EWCEN1CR
			Dilution Factor: 1						
			Analysis Time..: 20:26						
Chromium									
	1.1	200	199	ug/L	99		SW846 6020	03/25-03/27/02	EWCEN1C3
	1.1	200	197	ug/L	98	0.95	SW846 6020	03/25-03/27/02	EWCEN1C4
			Dilution Factor: 1						
			Analysis Time..: 20:26						
Lead									
	ND	200	206	ug/L	103		SW846 6020	03/25-03/27/02	EWCEN1CT
	ND	200	205	ug/L	102	0.37	SW846 6020	03/25-03/27/02	EWCEN1CU
			Dilution Factor: 1						
			Analysis Time..: 20:26						
Selenium									
	0.21	200	186	ug/L	93		SW846 6020	03/25-03/27/02	EWCEN1CV
	0.21	200	189	ug/L	94	1.4	SW846 6020	03/25-03/27/02	EWCEN1CW
			Dilution Factor: 1						
			Analysis Time..: 20:26						
Silver									
	ND	200	178	ug/L	89		SW846 6020	03/25-03/27/02	EWCEN1CX
	ND	200	192	ug/L	96	7.6	SW846 6020	03/25-03/27/02	EWCEN1C0
			Dilution Factor: 1						
			Analysis Time..: 20:26						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D2C150182 **Matrix.....:** WATER
Date Sampled...: 03/12/02 13:15 **Date Received..:** 03/13/02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Thallium									
	ND	200	201	ug/L	101		SW846 6020	03/25-03/27/02	EWCEN1C1
	ND	200	201	ug/L	101	0.02	SW846 6020	03/25-03/27/02	EWCEN1C2

Dilution Factor: 1
Analysis Time..: 20:26

MS Lot-Sample #: D2C130228-001 **Prep Batch #...:** 2085309

Mercury									
	ND	5.00	4.46	ug/L	89		SW846 7470A	04/01/02	EWCEN1C5
	ND	5.00	4.49	ug/L	90	0.67	SW846 7470A	04/01/02	EWCEN1C6

Dilution Factor: 1
Analysis Time..: 21:56

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: D2C150182 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate		WO#:EW1WH1AC-LCS/EW1WH1AD-LCSD				LCS Lot-Sample#: D2C270000-228	
	98	(90 - 110)			MCAWW 353.2	03/15/02	2086228
	100	(90 - 110)	2.0	(0-10)	MCAWW 353.2	03/15/02	2086228
		Dilution Factor: 1					
Nitrite		WO#:EWGDW1AC-LCS/EWGDW1AD-LCSD				LCS Lot-Sample#: D2C150000-325	
	98	(90 - 110)			MCAWW 354.1	03/15/02	2074325
	100	(90 - 110)	2.0	(0-10)	MCAWW 354.1	03/15/02	2074325
		Dilution Factor: 1					
Perchlorate		WO#:EXK8N1AC-LCS/EXK8N1AD-LCSD				LCS Lot-Sample#: D2D090000-259	
	104	(80 - 120)			EPA 314.0	04/08/02	2099259
	100	(80 - 120)	3.7	(0-20)	EPA 314.0	04/08/02	2099259
		Dilution Factor: 1					
Sulfate		WO#:EW1PA1AC-LCS/EW1PA1AD-LCSD				LCS Lot-Sample#: D2C270000-174	
	99	(90 - 110)			MCAWW 300.0A	03/26/02	2086174
	99	(90 - 110)	0.04	(0-10)	MCAWW 300.0A	03/26/02	2086174
		Dilution Factor: 1					
Total Dissolved Solids		WO#:EWQV41AC-LCS/EWQV41AD-LCSD				LCS Lot-Sample#: D2C190000-516	
	99	(86 - 106)			MCAWW 160.1	03/19/02	2078516
	98	(86 - 106)	1.6	(0-20)	MCAWW 160.1	03/19/02	2078516
		Dilution Factor: 1					
Total Sulfide		WO#:EW2WA1AC-LCS/EW2WA1AD-LCSD				LCS Lot-Sample#: D2C210000-510	
	73	(70 - 130)			SW846 9030B/9034	03/21/02	2080510
	79	(70 - 130)	7.9	(0-20)	SW846 9030B/9034	03/21/02	2080510
		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 #...: D2C150182 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate		WO#:EW1WH1AC-LCS/EW1WH1AD-LCSD				LCS Lot-Sample#: D2C270000-228		
	0.0500	0.0490	mg/L	98		MCAWW 353.2	03/15/02	2086228
	0.0500	0.0500	mg/L	100	2.0	MCAWW 353.2	03/15/02	2086228
		Dilution Factor: 1						
Nitrite		WO#:EWGDW1AC-LCS/EWGDW1AD-LCSD				LCS Lot-Sample#: D2C150000-325		
	0.0500	0.0490	mg/L	98		MCAWW 354.1	03/15/02	2074325
	0.0500	0.0500	mg/L	100	2.0	MCAWW 354.1	03/15/02	2074325
		Dilution Factor: 1						
Perchlorate		WO#:EXK8N1AC-LCS/EXK8N1AD-LCSD				LCS Lot-Sample#: D2D090000-259		
	200	208	ug/L	104		EPA 314.0	04/08/02	2099259
	200	200	ug/L	100	3.7	EPA 314.0	04/08/02	2099259
		Dilution Factor: 1						
Sulfate		WO#:EW1PA1AC-LCS/EW1PA1AD-LCSD				LCS Lot-Sample#: D2C270000-174		
	25.0	24.7	mg/L	99		MCAWW 300.0A	03/26/02	2086174
	25.0	24.7	mg/L	99	0.04	MCAWW 300.0A	03/26/02	2086174
		Dilution Factor: 1						
Total Dissolved Solids		WO#:EWQV41AC-LCS/EWQV41AD-LCSD				LCS Lot-Sample#: D2C190000-516		
	500	496	mg/L	99		MCAWW 160.1	03/19/02	2078516
	500	488	mg/L	98	1.6	MCAWW 160.1	03/19/02	2078516
		Dilution Factor: 1						
Total Sulfide		WO#:EW2WA1AC-LCS/EW2WA1AD-LCSD				LCS Lot-Sample#: D2C210000-510		
	21.1	15.3	mg/L	73		SW846 9030B/9034	03/21/02	2080510
	21.1	16.6	mg/L	79	7.9	SW846 9030B/9034	03/21/02	2080510
		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 #...: D2C150182 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate		Work Order #: EW1WH1AA		MB Lot-Sample #:	D2C270000-228	
	ND	0.10	mg/L	MCAWW 353.2	03/15/02	2086228
		Dilution Factor: 1				
		Analysis Time..: 11:00				
Nitrite		Work Order #: EWGDW1AA		MB Lot-Sample #:	D2C150000-325	
	0.0023 B	**0.010**	**mg/L**	**MCAWW 354.1**	**03/15/02**	**2074325**
		Dilution Factor: 1				
		Analysis Time..: 13:15				
Perchlorate		Work Order #: EXK8N1AA		MB Lot-Sample #:	D2D090000-259	
	ND	20.0	ug/L	EPA 314.0	04/08/02	2099259
		Dilution Factor: 1				
		Analysis Time..: 17:39				
Sulfate		Work Order #: EW1PA1AA		MB Lot-Sample #:	D2C270000-174	
	ND	5.0	mg/L	MCAWW 300.0A	03/26/02	2086174
		Dilution Factor: 1				
		Analysis Time..: 11:26				
Total Sulfide		Work Order #: EW2WA1AA		MB Lot-Sample #:	D2C210000-510	
	ND	4.0	mg/L	SW846 9030B/9034	03/21/02	2080510
		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.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: D2C150182 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids		Work Order #: EWQV41AA		MB Lot-Sample #:	D2C190000-516	
	ND	10.0	mg/L	MCAWW 160.1	03/19/02	2078516
		Dilution Factor: 1				
		Analysis Time..: 16:00				

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: D2C150182 **Matrix.....:** WATER
Date Sampled...: 03/14/02 09:40 **Date Received..:** 03/14/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrite		WO#:	EWDVH1AC-MS/EWDVH1AD-MSD			MS Lot-Sample #:	D2C140199-005
	86 N	(90 - 110)			MCAWW 354.1	03/15/02	2074326
	81 N	(90 - 110)	1.4	(0-10)	MCAWW 354.1	03/15/02	2074326

Dilution Factor: 1
Analysis Time..: 10:15

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 #...: D2C150182 **Matrix.....:** WATER
Date Sampled...: 03/14/02 09:40 **Date Received..:** 03/14/02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrite			WO#: EWDVH1AC-MS/EWDVH1AD-MSD				MS Lot-Sample #: D2C140199-005		
	1.5	0.500	1.96 N	mg/L	86		MCAWW 354.1	03/15/02	2074326
	1.5	0.500	1.93 N	mg/L	81	1.4	MCAWW 354.1	03/15/02	2074326
			Dilution Factor: 1						
			Analysis Time..: 10:15						

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

General Chemistry

Client Lot #...: D2C150182 **Matrix.....:** WG
Date Sampled...: 03/14/02 10:40 **Date Received..:** 03/15/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate		WO#: EWFVX1CH-MS/EWFVX1CJ-MSD				MS Lot-Sample #: D2C150182-001	
	101	(80 - 120)			EPA 314.0	04/08/02	2099259
	102	(80 - 120)	0.88	(0-20)	EPA 314.0	04/08/02	2099259
		Dilution Factor: 1					
		Analysis Time..: 18:10					
Sulfate		WO#: EWFVX1CF-MS/EWFVX1CG-MSD				MS Lot-Sample #: D2C150182-001	
	111 N,I	(90 - 110)			MCAWW 300.0A	03/26/02	2086174
	111 N,I	(90 - 110)	0.09	(0-10)	MCAWW 300.0A	03/26/02	2086174
		Dilution Factor: 1					
		Analysis Time..: 16:25					

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

I Estimated result. Result concentration exceeds the calibration range.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: D2C150182 **Matrix.....:** WG
Date Sampled...: 03/14/02 10:40 **Date Received..:** 03/15/02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate			WO#: EWFVX1CH-MS/EWFVX1CJ-MSD				MS Lot-Sample #: D2C150182-001		
	ND	100	101	ug/L	101		EPA 314.0	04/08/02	2099259
	ND	100	102	ug/L	102	0.88	EPA 314.0	04/08/02	2099259
			Dilution Factor: 1						
			Analysis Time..: 18:10						
Sulfate			WO#: EWFVX1CF-MS/EWFVX1CG-MSD				MS Lot-Sample #: D2C150182-001		
	170	125	309 N,I	mg/L	111		MCAWW 300.0A	03/26/02	2086174
	170	125	309 N,I	mg/L	111	0.09	MCAWW 300.0A	03/26/02	2086174
			Dilution Factor: 1						
			Analysis Time..: 16:25						

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

I Estimated result. Result concentration exceeds the calibration range.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: D2C150182 **Work Order #...:** EWFK1-SMP EWFK1-DUP **Matrix.....:** WATER

Date Sampled...: 03/14/02 07:40 **Date Received..:** 03/15/02

% 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 #:	D2C150147-001	
	1360	1360	mg/L	0.37	(0-20)	MCAWW 160.1	03/19/02	2078516

Dilution Factor: 1 Analysis Time..: 16:00

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

5.7°C
D.S.
3/15/02

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: Fred Gebhardt — Seal Number: 243640
Team Leader: Project chief - Fredrick E. Gebhardt	Delivered to Shipper by: Fred Gebhardt — Airbill Number: 827368343894
	Sampling Status: ☒ Done ☐ Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
03/14/2002	1040	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
"	1200	CAFB-H	"	"	"	"
"	1300	CAFB-E	"	"	"	"
"	0810	CAFB-F-TB	Field QC Blank	3	SW8260B (only)	Trip Blank

IV-263

Additional Comments: * This cooler also contains VOC samples for ground-water samples CAFB-F & CAFB-F1

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
Ralph Wilson III	to FedEx	03/14/02	1600	Severn Trent Services 4955 Yarrow Street Arvada, CO 80002 ph: (303) 786-0184 Attention: Karen Kuoppala	Condition of Contents
	Rachelle A Dir	3/15/02	0845		Contents Temperature
					Laboratory Project Number

1.7°C
DG
3/15

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: Fred Gebhardt — Seal Number: 243630
Team Leader: Project chief - Fredrick E. Gebhardt	Delivered to Shipper by: Fred Gebhardt — Airbill Number: 827368343894
	Sampling Status: ☒ Done ☐ Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
03/14/2002	0910	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-E160.1, SULFIDE-SW9030. PERCHLORATE- EPA 314.0	ENVIRONMENTAL SAMPLE
"	0920	CAFB-F1	"	"	"	"

IV-264

Additional Comments: * The VOC's for these samples are in another cooler w/ seal no. 243640

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 Fed Ex	03/14/02	1600	Severn Trent Services 4955 Yarrow Street Arvada, CO 80002 ph: (303) 786-0184 Attention: Karen Kuoppala	Condition of Contents
	[signature]	3/15/02	0845		Contents Temperature
					Laboratory Project Number

STL Denver

Sample Receiving Checklist

Lot #: D2B1 Date/Time Received: 3/15/02 0845

Company Name & Sampling Site:

*Cooler #(s): 1 2

Temperatures (°C): 5.7°C 1.7°C

PM to Complete This Section: *Yes* *No*

Residual chlorine check required: ☐ ☐

Time Zone:

• EDT/EST • CDT/CST • MDT/MST • PDT/PST • OTHER 25228

Unpacking & Labeling Check Points:

N/A	Yes	No		Initials
☐	☒	☐	1. Cooler seals intact. (N/A if hand delivered)	RAD
	☒	☐	2. Chain of custody present.	
	☐	☒	3. Bottles broken and/or are leaking, comment if yes.	
	☐	☒	4. Multiphase samples present? If yes, comment below.	
			PHOTOGRAPH BROKEN BOTTLES/MULTIPHASE SAMPLES	
	☒	☐	5. Proper container & preservatives used (ref. Attachment D of SOP# DEN-QA-0003)	
☐	☒	☐	6. pH of all samples checked and meet requirements, note exceptions.	
	☒	☐	7. Chain of custody includes "received by" and "relinquished" by signatures, dates, and times.	
	☐	☒	8. Receipt date(s) > 48 hours past the collection date(s)? If yes, notify PA/PM.	
	☒	☐	9. Chain of custody agrees with bottle count, comment if no.	
	☐	☒	10. Chain of custody agrees with labels, comment if no. See CUR	
☐	☒	☐	11. VOA samples filled completely, comment if no.	
☐	☒	☐	12. VOA vials preserved, check label. Preservative ☒HCl ☒4±2°C ☐Sodium Thiosulfate	
	☐	☒	13. Did samples require preservation with sodium thiosulfate?	
☒	☐	☐	14. If yes to #12, did the samples contain residual chlorine?	
☒	☐	☒	15. Sediment present in dissolved/filtered bottles.	RAD
	☒	☐	16. Are analyses with short holding times requested?	
	☐	☒	17. Was a quick Turn Around (TAT) requested?	
☒	☐	☐	17. Is extra sample volume provided for MS, MSD or matrix duplicates?	
			DOUBLECHECK METALS,SAMPLE LABELS & SUBCONTRACT	
☒	☐	☐	18. Subcontract COC signed and sent with samples to bottle prep?	
	☒	☐	19. Were sample labels double-checked by a second person?	DN
☐	☒	☐	20. Were sample bottles and COC double checked for dissolved/filtered metals by a second person?	
☐	☒	☐	21. If applicable, were AFCEE Metals placed in the walkin refrigerator?	RAD

Document any problems or discrepancies and the actions taken to resolve them on a Condition Upon Receipt Anomaly Report (CUR).

APPENDIX V

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
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

12 March 2002 (Tuesday)

Field crew: Fred Gebhardt - project chief, purging & sampling
Ralph Wilcox - note taking & sample processing

0850 Arrive @ well Q (landfill 5 background well) WL 288.92' blw top of pump hanger plate. Well A WL 288.89' blw gray PVC pump hanger plate. Tagged base of well A w/ steel tape 341½' blw TOC 8" surface casing/well protector.

1000 Calibrated field meters: pH (Orion 250A, serial no. 012942) @ 7.0 & 10.0 in auto cal. mode initial 6.89 & 10.05, adjusted 7.06 & 10.18, slope 101.4;
conductivity (Orion 126, serial no. 51449068) @ 253 µS/cm, standard lot no. 01292 expires 07-2002, initial (@ factory cell constant 0.609) 261 µS/cm, adjusted cell constant to 0.595 253 µS/cm, Std temp 11.6°C;
D.O. (YSI 95, serial no. 99A0237) altitude 4500 ft & salinity 0 ppt.

Q

time	vol.	temp.	pH	cond.	D.O.
1013	~3 gal	~~[illegible]~~ 16.8°C	8.69	745 µS/cm	752 mg/L
1021	10	18.1	8.03	775	6.54
—	15	18.1	8.03	773	6.93
1033	20	18.1	8.03	770	7.39
1040	25	18.1	8.02	768	7.30
1046	30	18.1	8.01	766	7.36
1052	35	18.1	7.99	761	7.29
1059	40	18.1	7.99	763	7.62

1110 Collected environmental ground-water sample Q. Q-TB placed in cooler w/ sample Q, 1030 time for Q-TB.

1154 WL in well D 294.33 ft blw PVC pump hanger plate. Solinst serial no. 29455 used for all WL measurements this sample round (500 ft tape).

D

time	vol.	temp.	pH	cond.	D.O.
1207	~1 gal	17.1°C	8.58	550 µS/cm	5.73 mg/L
1216	5	18.1	7.86	576	4.47
1223	10	18.2	7.84	576	4.65
1235	15	18.1	7.84	578	4.41
1241	20	18.2	7.84	577	4.74
1248	25	18.2	7.84	580	4.60

D continued

time	vol.	temp.	pH.	cond.	D.O.
30	1254	18.2°C	7.84	581 µs/cm	4.72 mg/L
35	1300	18.2	7.84	582	4.74
40	1305	18.2	7.83	582	4.71

1315 Collected environmental ground-water sample from well D w/ MS & MSD samples.

1320 Collected duplicate ground-water sample from well D. Sample D-1.

13 March 2002 (Wednesday)

Field crew: same as on 3-12-02

0745 Calibrated field meters in same manner as on 3-12-02: pH — initial 6.86 & 9.89, adjusted 7.05 & 10.17, slope 100.2, buffer temp. 11.5°C; conductivity — initial 254 µS/cm, no adjustment necessary, std temp. 14.3°C. D.O. no adjustment from yesterdays settings.

0756 Measured WL in well CAFB-C 298.53 ft blw gray PVC pump hanger plate.

C

time	vol.	temp.	pH	cond.	D.O.
0802	~2 gal	17.3°C	8.02	579 µS/cm	5.43 mg/L
0810	5	18.1	8.06	557	2.79
0818	10	18.2	8.10	558	2.72
0826	15	18.3	8.11	559	2.70
0833	20	18.2	8.12	559	2.71
0841	25	18.3	8.12	561	2.71
0848	30	18.3	8.13	563	2.68

0900 Collected environmental ground-water sample CAFB-C. Trip blank sample CAFB-C-TB given a time of 0800.

0930 Fred is attempting to download WL data from CR10 logger @ well B.

0939 Measured WL 296.55 ft blw gray PVC pump hanger.

B

time	vol.	temp.	pH	cond.	D.O.
0941	~1 gal	17.8°C	7.30	766 µS/cm	4.31 mg/L
0946	5	18.3	7.98	760	5.41
0952	10	18.3	8.01	760	5.56
0958	15	18.3	8.03	760	5.66
1004	20	18.4	8.06	759	5.84
1009	25	18.4	8.08	762	5.97
1020	30	18.4	8.09	761	6.12
1025	35	18.4	8.09	762	6.14

1030 Collected environmental ground-water sample CAFB-B.

1051 Measured WL in CAFB-U 295.61 ft blw gray PVC pump hanger.

U

time	vol.	temp.	pH	cond.	D.O.
1102	~2gal	17.5°C	8.36	773 µS/cm	4.86 mg/L
1106	5	18.3	8.53	758	6.16
1112	10	18.4	8.31	769	6.37
1118	15	18.4	8.24	768	6.39
1124	20	18.3	8.18	773	6.55
1130	25	18.4	8.18	773	6.52
1136	30	18.4	8.20	771	6.62
1142	35	18.3	8.19	773	6.65

1150 Collected environmental ground-water sample CAFB-U.

1218 Measured WL in well CAFB-T 295.71 ft blw gray PVC pump hanger plate. Fred left site for ~20 min to get filters shipped to Environmental Services Office.

T

time	vol.	temp.	pH	cond.	D.O.
1227	~1gal	19.3°C	7.31	825 µS/cm	5.08 mg/L
1235	5	18.6	8.04	789	4.51
1241	10	18.5	8.06	825	4.86
1247	15	18.4	8.09	836	4.90
1253	20	18.4	8.09	838	4.84
1259	25	18.4	8.09	842	4.71
1306	30	18.4	8.10	845	4.67

1315 Collected environmental ground-water sample CAFB-T

1330 Measured WL in well CAFB-S 296.43 ft blw gray PVC pump hanger plate.

5

time	vol	temp	pH	cond	D.O.
1337	~1 gal	18.0°C	7.80	780 µS/cm	3.55 mg/L
1343	5	18.4	8.06	765	3.94
1349	10	18.4	8.08	766	5.97
1355	15	18.4	8.11	771	5.49
1401	20	18.4	8.12	775	5.43
1407	25	18.4	8.12	775	5.33
1413	30	18.4	8.12	775	5.28
1418	35	18.4	8.12	775	5.22

1430 Collected environmental ground-water sample CAFB-S.

14 March 2002 (Thursday)

Field crew: same as on 3-12-02

0750 Calibrated field meters in same manner as on 3-12-02: pH – initial 7.17 & 10.28, adjusted 7.04 & 10.13, slope 100.4, buffer temp. 14.3°C; conductivity – initial 253 µS/cm, not adjusted ~~µS/cm~~, std. temp. °C; D.O. – no adjustments made to 3-13-02 settings.

0745 Measured WL in well CAFB-F 292.80 ft blw PVC pump hanger plate

F

time	vol.	temp.	pH	cond	D.O.	
0800	1 gal	16.6°C	7.82	824 µS/cm	~~4.53~~ mg/L	water very turbid, >100 NTU initially
0805	5	17.4	7.89	830	4.57	water clear
0810	10	17.5	7.88	829	4.78	
0815	15	17.6	7.89	829	5.08	
0821	20	17.7	7.90	831	5.19	
0825	25	17.7	7.90	829	5.13	
0832	30	17.6	7.92	829	5.12	
0841	40	17.8	7.92	828	5.09	
0851	50	17.8	7.91	827	4.99	
0900	60	17.9	7.93	826	5.34	

0910 Collected environmental ground-water sample CAFB-F. Very windy conditions. Wind blowing dry-sludge dust from lagoons.

0920 Collected duplicate ground-water sample CAFB-F1. Trip-blank sample CAFB-F-TB @ 0810

0940 Measured WL in CAFB-G 294.68 ft blw pump hanger. Well was open on arrival.

G

time	vol.	~~tempr~~	temp.	pH	cond.	D.O.
0948	1 gal		16.6°C	7.49	997 µS/cm	4.75 mg/L
0954	5		17.4	7.50	953	5.05
1000	10		17.4	7.50	956	4.52
1005	15		17.5	7.50	954	4.81
1010	20		17.5	7.50	954	5.35
1016	25		17.6	7.52	952	4.60
1022	30		17.7	7.62	940	4.62
1029	35		17.8	7.75	944	4.56

1040 Collected environmental ground-water sample CAFB-G. Very strong west wind w/ lots of suspended dry sludge.

1057 Measured WL in CAFB-H 294.37 ft below pump hanger plate.

H

time	vol.	temp.	pH	cond.	D.O.
1103	1 gal	17.0°C	8.66	727 µS/cm	3.91 mg/L
1109	5	17.6	7.89	733	3.76
1114	10	17.7	7.89	732	3.65
1120	15	17.6	7.89	733	3.57
1125	20	17.7	7.89	733	3.45
1131	25	17.8	7.89	735	3.43
1136	30	17.8	7.90	739	3.38
1142	35	17.9	7.93	743	3.40

1200 Collected environmental ground-water sample CAFB-H. Wind has subsided considerably.

1215 Measured WL in well CAFB-E 295.24 ft blw PVC pump hanger plate. Well was open on arrival today.

E

time	vol.	temp.	pH	cond.	D.O.
1217	1 gal	17.0°C	8.20	840 µS/cm	3.85 mg/L
1222	5	18.2	7.87	877	~~6.33~~
1227	10	18.3	7.87	878	~~9.80~~

1228 Temporarily stopped pumping to check D.O. meters response to 100% saturated air. Reading fell to ~5.5 in <½ min.

1236	15	18.2	7.89	896	—	← opened vent screw on DO port on flow-through chamber & DO dropped.
1241	20	18.3	7.91	912	4.79	

E continued

time	vol.	temp.	pH	cond.	D.O.
1252	30	18.4	7.92	900	4.79

1300 Collected environmental ground-water sample CAFB-E

LIBRARY COPY

Cannon Air Force Base, New Mexico

RCRA Ground-Water Monitoring at Landfill 5

Analytical Results of Samples Collected August 13, 15-16, 2002

Prepared for

United States Air Force Air Combat Command
Cannon Air Force Base

February 2003

Cannon Air Force Base, New Mexico

RCRA Ground-Water Monitoring at Landfill 5

Analytical Results of Samples Collected August 13, 15-16, 2002

Prepared for

United States Air Force Air Combat Command
Cannon Air Force Base

February 2003

CONTENTS

Executive summary 1

Figure 1. Location of Cannon Air Force Base, New Mexico 2

Figure 2. Cannon Air Force Base and location of Landfill 5 3

Figure 3. Location of monitoring wells around Landfill 5 4

Table 1. Summary of concentrations of analytes in ground water from monitoring wells B, C, D, Q, S, T, and U for samples collected August 13, 15-16, 2002 at Landfill 5, Cannon Air Force Base, NM 5

Monitoring well identification reports 6

Monitoring well semi-annual sampling reports 14

APPENDIX I

Analytical Results from Severn Trent Services Laboratory
for Ground-Water Samples Collected August 13, 15-16, 2002

Severn Trent Services Report #s D2H140282, D2H160308, D2H190144 ..... I-1

Executive Summary I-5

Volatile organics I-13

General chemistry I-43

APPENDIX II

Laboratory Quality Assurance / Quality Control Results

Laboratory data validation checklist for D2H140282, D2H160308, and D2H190144 ..... II-1

Severn Trent Services D2H140282, D2H160308, and D2H190144 quality control summary II-18

U.S. Geological Survey, Water Resources Division, New Mexico District analytical request / chain of custody..... II-47

Severn Trent sample receiving checklists..... II-50

DODEC laboratory data review worksheet for D2H140282, D2H160308 and D2H190144 ..... II-53

APPENDIX III

Field Data

Field Methods..... III-1

Sample container and preservation requirements..... III-2

Field notes..... III-3

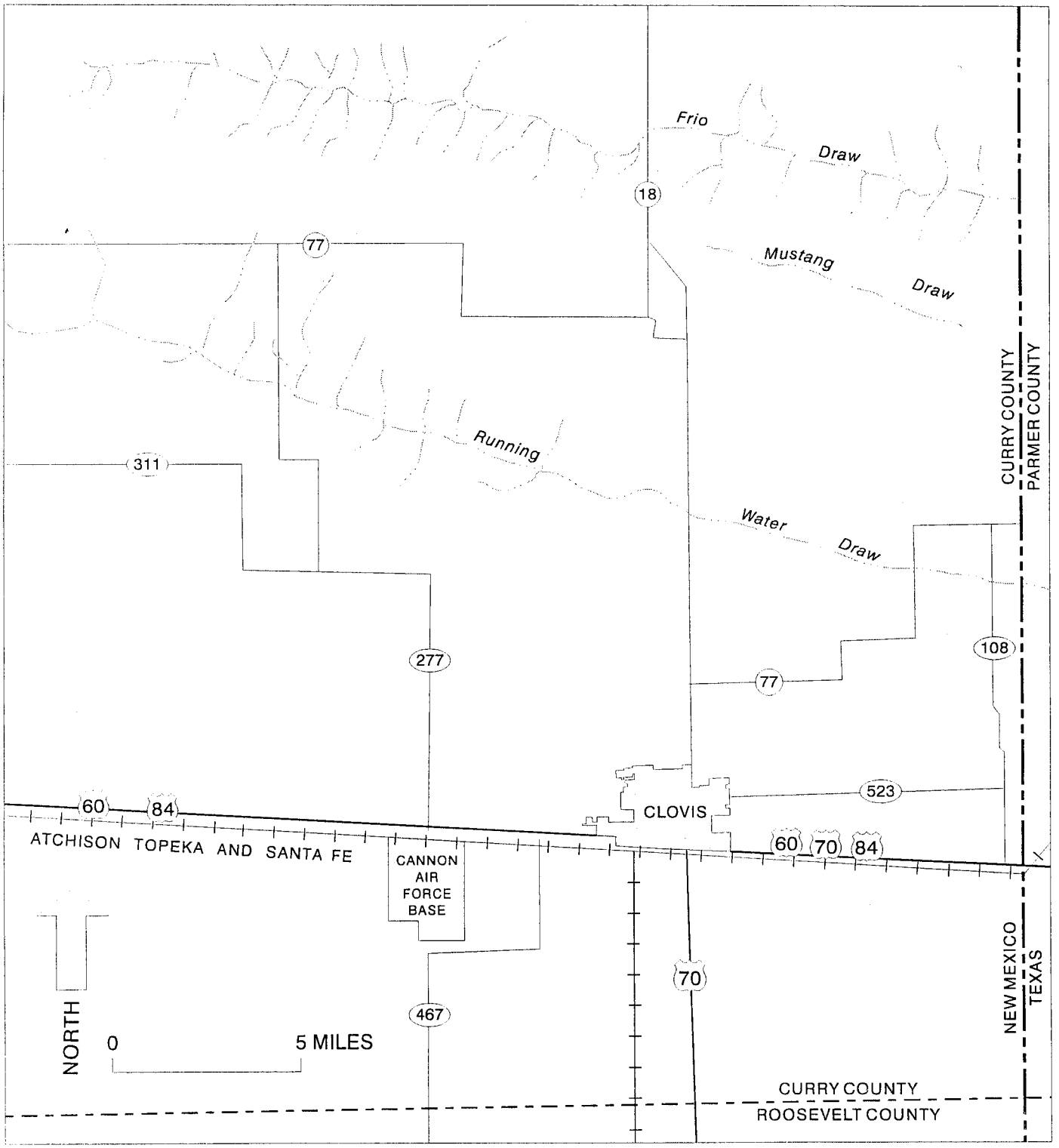
EXECUTIVE SUMMARY

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 7 miles west of Clovis, as shown in figure 1. The ground-water sampling is at Landfill 5 on the southeast corner of the base, as shown in figure 2. Detection sampling is conducted semiannually at Landfill 5 (fig. 3) 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 seven wells around Landfill 5, CAFB, on August 13-16, 2002. The monitoring wells sampled at Landfill 5 are downgradient wells B, C, D, S, T, U, and upgradient well Q, as shown in figure 3. These wells were sampled for the following Appendix IX parameters: VOC's by method SW8260B; total organic carbon (TOC) by SW9060, total organic halogens (TOX) by SW9020B, and perchlorate by method EPA 314.0.

Concentrations of analytes detected in ground water from wells at Landfill 5 are presented in table 1. Detail concentrations of the analytes in the ground water from the wells at Landfill 5 are presented in the Executive Summary of the appendix, pages I-5 through I-7. Only those concentrations detected above the reporting limit are discussed in this summary. Trichloroethene was detected in the water sample from well C at a concentration of 1.6 μg/L. The USEPA MCL drinking-water standard for trichloroethene is 5 μg/L. Methylene chloride was detected in the sample from well B, concentration of 1.1 μg/L. Use discretion while reviewing the Methylene chloride data results. Methylene chloride is associated as a lab contaminate.

As part of the quality assurance and quality control (QA/QC) procedures for Landfill 5 sites, two trip blanks and one field duplicate sample were collected. Duplicate sample CAFB-BB from well B had no target parameters detected above reporting limits, which corresponded with the water sample from CAFB-B. Methylene chloride was detected in both CAFB-B and duplicate sample CAFB-BB. However, the CAFB-BB sample was below reporting limits, and as previously mentioned Methtlene chloride is considered a lab contaminate.



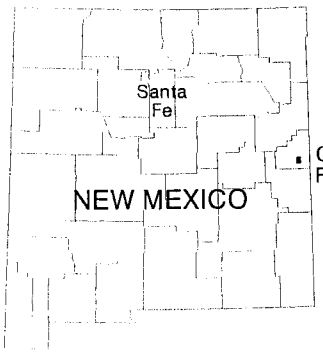


Figure 1. Location of Cannon Air Force Base, New Mexico.

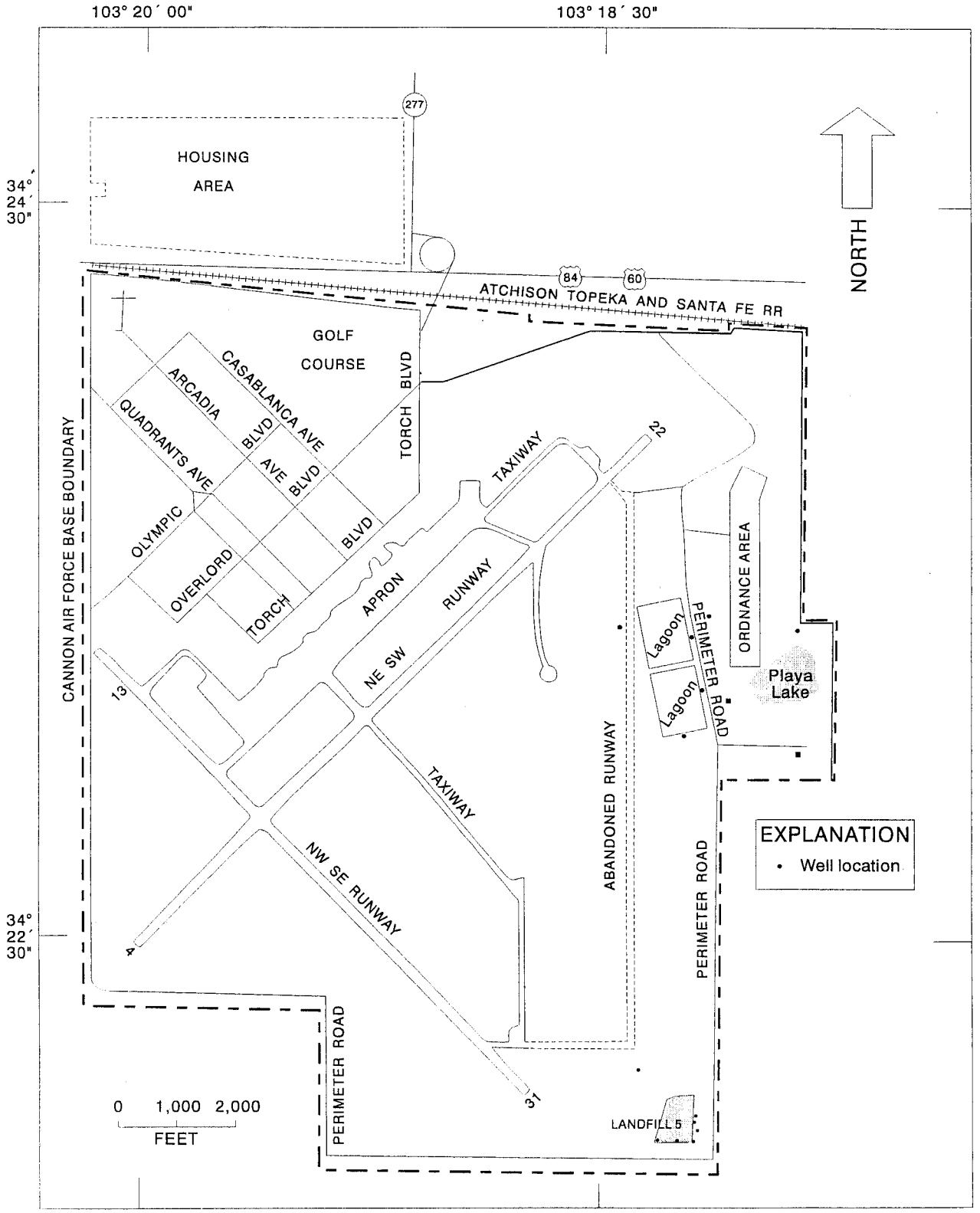


Figure 2. Cannon Air Force Base and location of sewage lagoons and Landfill 5.

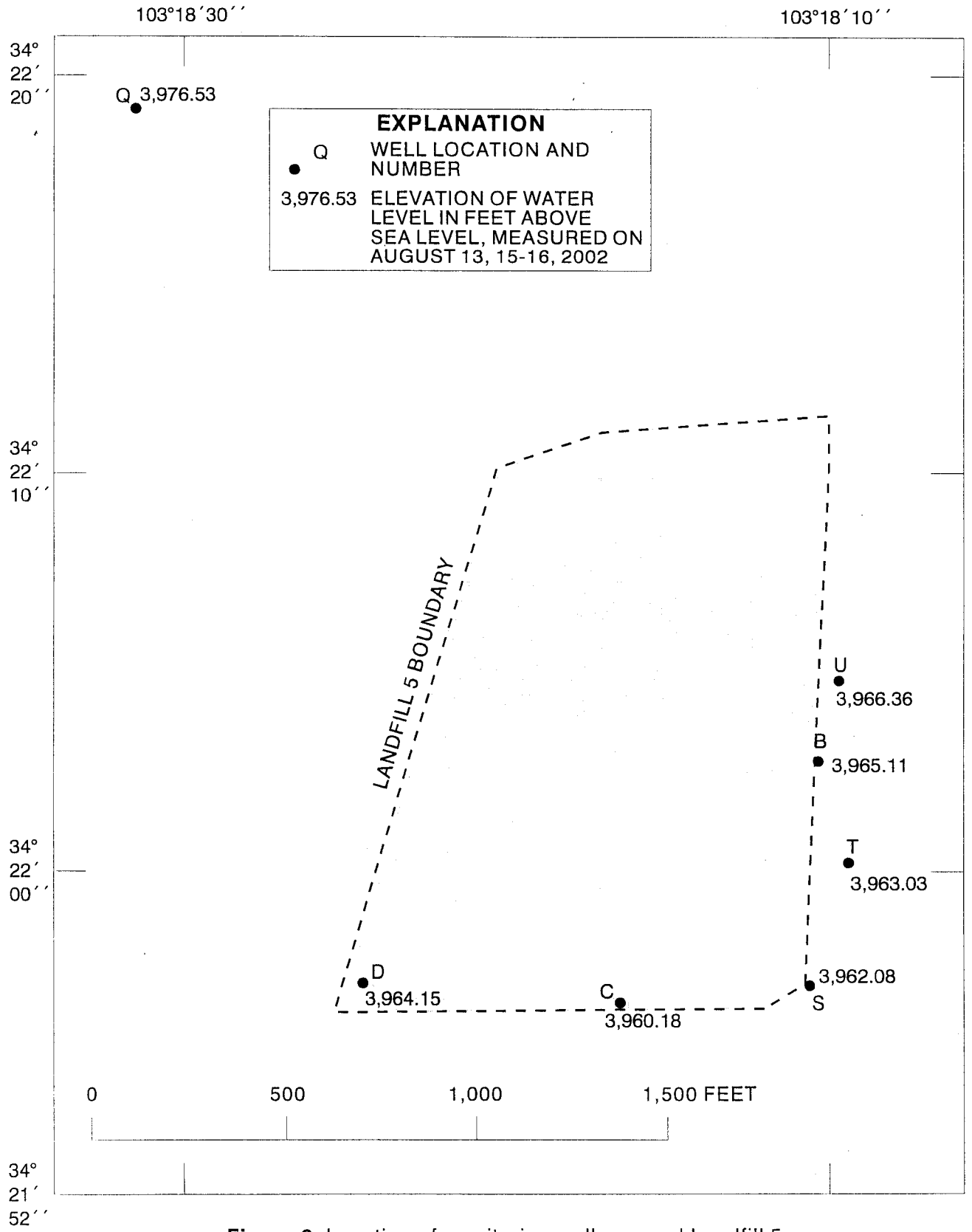


Figure 3. Location of monitoring wells around Landfill 5.

Table 1.--Summary of concentrations of analytes in ground water from monitoring wells CAFB-B, C, D, Q, S, T, and U for samples collected August 13-16, 2002, 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 8-16-2002		B/CAFB-BB 8-16-2002 Duplicate		C/CAFB-C 8-13-2002		D/CAFB-D 8-13-2002	
Analytes and Methods	Results	RL	Results	RL	Results	RL	Results	RL
Appendix-IX Volatiles SW8260B (µg/L)								
Trichloroethene	ND	1.0	ND	1.0	1.6	1.0	0.57 J	1.0
Chloromethane	ND	2.0	ND	2.0	ND	2.0	ND	2.0
Methylene Chloride	1.1	1.0	0.87 J	1.0	ND	1.0	ND	1.0
Appendix-IX								
TOC, SW846 9060 (mg/L)	0.40 B	1.0	0.40 B	1.0	0.75	1.0	ND	1.0
TOX, SW846 9020B (µg/L)	ND	30.0	ND	30.0	ND	30.0	ND	30.0
Perchlorate, EPA 314.0 (µg/L)	5.0 B	20.0	5.5 B	20.0	ND	20.0	ND	20.0

Well/sample ID: Date sampled:	Q/CAFB-Q 8-13-2002		S/CAFB-S 8-15-2002		T/CAFB-T 8-15-2002		U/CAFB-U 8-15-2002	
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
Chloromethane	ND	2.0	ND	2.0	0.66 J	2.0	ND	2.0
Methylene Chloride	ND	1.0	ND	1.0	ND	1.0	ND	1.0
Appendix-IX								
TOC, SW846 9060 (mg/L)	0.40 B	1.0	0.42 B,J	1.0	0.60 B,J	1.0	0.29 B,J	1.0
TOX, SW846 9020B (µg/L)	ND	30.0	ND	30.0	ND	30.0	ND	30.0
Perchlorate, EPA 314.0 (µg/L)	ND	20.0	4.6 B	20.0	6.5 B	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 02-15-03 SIGNATURE Fedrick 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 02-15-03 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 02-15-03 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 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 02-15-03 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 02-15-03 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 02-15-03 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 02-15-03 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 36.0 gallons

DATE SAMPLED 08-16-2002 LABORATORY SAMPLE I.D.# D2H190144

TIME SAMPLED 0830 DATE RECEIVED BY LAB 08-17-2002

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3965.11	08-16-2002
Flow Rate	00059	gal/min	0.87	08-16-2002
Pump Period	72004	min.	46	08-16-2002
Volume Evacuated	73675	gal	40.0	08-16-2002
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.	7.43	N/A	08-16-2002	field electrometer
Specific Conductivity	00095	umhos/cm	766	N/A	08-16-2002	field electrometer
T.O.X.	70354	ug/L	ND	30.0	09-11-2002	SW9020B
T.O.C.	00680	mg/L	0.40 B	1.0	09-10-2002	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 31.5 gallons

DATE SAMPLED 08-13-2002 LABORATORY SAMPLE I.D.# D2H140282

TIME SAMPLED 1100 DATE RECEIVED BY LAB 08-14-2002

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3960.18	08-13-2002
Flow Rate	00059	gal/min	0.83	08-13-2002
Pump Period	72004	min.	42	08-13-2002
Volume Evacuated	73675	gal	35.0	08-13-2002
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.	7.50	N/A	08-13-2002	field electrometer
Specific Conductivity	00095	umhos/cm	601	N/A	08-13-2002	field electrometer
T.O.X.	70354	ug/L	ND	30.0	09-04-2002	SW9020B
T.O.C.	00680	mg/L	0.75 B	1.0	09-06-2002	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 32.0 gallons

DATE SAMPLED 08-13-2002 LABORATORY SAMPLE I.D.# D2H140282

TIME SAMPLED 1000 DATE RECEIVED BY LAB 08-14-2002

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3964.15	08-13-2002
Flow Rate	00059	gal/min	0.80	08-13-2002
Pump Period	72004	min.	44	08-13-2002
Volume Evacuated	73675	gal	35.0	08-13-2002
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.	7.34	N/A	08-13-2002	field electrometer
Specific Conductivity	00095	umhos/cm	585	N/A	08-13-2002	field electrometer
T.O.X.	70354	ug/L	ND	30.0	09-04-2002	SW9020B
T.O.C.	00680	mg/L	ND	1.0	09-06-2002	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-Q

WELL DEPTH 296.69 feet WELL CASING VOLUME 3.70 gallons

DATE SAMPLED 08-13-2002 LABORATORY SAMPLE I.D.# D2H140282

TIME SAMPLED 1200 DATE RECEIVED BY LAB 08-14-2002

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3976.53	08-13-2002
Flow Rate	00059	gal/min	0.95	08-13-2002
Pump Period	72004	min.	37	08-13-2002
Volume Evacuated	73675	gal	35	08-13-2002
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.	7.52	N/A	08-13-2002	field electrometer
Specific Conductivity	00095	umhos/cm	787	N/A	08-13-2002	field electrometer
T.O.X.	70354	ug/L	ND	30.0	09-04-2002	SW9020B
T.O.C.	00680	mg/L	0.40 B	1.0	09-06-2002	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 35.4 gallons

DATE SAMPLED 08-15-2002 LABORATORY SAMPLE I.D.# D2H160308

TIME SAMPLED 0955 DATE RECEIVED BY LAB 08-16-2002

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3962.08	08-15-2002
Flow Rate	00059	gal/min	0.83	08-15-2002
Pump Period	72004	min.	48	08-15-2002
Volume Evacuated	73675	gal	40.0	08-15-2002
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	08-15-2002	field electrometer
Specific Conductivity	00095	umhos/cm	805	N/A	08-15-2002	field electrometer
T.O.X.	70354	ug/L	ND	30.0	09-09-2002	SW9020B
T.O.C.	00680	mg/L	0.42 B	1.0	09-10-2002	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 37.8 gallons

DATE SAMPLED 08-15-2002 LABORATORY SAMPLE I.D.# D2H160308

TIME SAMPLED 1110 DATE RECEIVED BY LAB 08-16-2002

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3963.03	08-15-2002
Flow Rate	00059	gal/min	0.91	08-15-2002
Pump Period	72004	min.	44	08-15-2002
Volume Evacuated	73675	gal	40	08-15-2002
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.	7.47	N/A	08-15-2002	field electrometer
Specific Conductivity	00095	umhos/cm	828	N/A	08-15-2002	field electrometer
T.O.X.	70354	ug/L	ND	30.0	09-09-2002	SW9020B
T.O.C.	00680	mg/L	0.60 B	1.0	09-10-2002	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 38.3 gallons

DATE SAMPLED 08-15-2002 LABORATORY SAMPLE I.D.# D2C160308

TIME SAMPLED 1210 DATE RECEIVED BY LAB 08-16-2002

PARAMETERS	STORET CODE	UNITS	VALUE	DATE
Elevation of G. Water	71993	ft.	3966.36	08-15-2002
Flow Rate	00059	gal/min	0.91	08-15-2002
Pump Period	72004	min.	44	08-15-2002
Volume Evacuated	73675	gal	40	08-15-2002
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.	7.58	N/A	08-15-2002	field electrometer
Specific Conductivity	00095	umhos/cm	759	N/A	08-15-2002	field electrometer
T.O.X.	70354	ug/L	ND	30.0	09-09-2002	SW9020B
T.O.C.	00680	mg/L	0.29 B	1.0	09-10-2002	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 13, 15-16, 2002

SEVERN
TRENT
SERVICES

Severn Trent
Laboratories, Inc.

ANALYTICAL REPORT

Cannon AFB
SDG: CANNON-1
Lot #s: D2H140282, D2H160308, and D2H190144

Richard Daddow

U.S. Geological Survey

STL DENVER

Karen Kuoppala
Project Manager

September 23, 2002

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.)*	88

- **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
CANNON-1

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 presented in this report meet all requirements of NELAC, and any exceptions are noted. This report shall not be reproduced, except in full, without written permission from the laboratory.

Sample Receiving

Three samples and one trip blank were received under chain of custody on August 14, 2002 and logged under lot D2H140282. Three samples and one trip blank were received under chain of custody on August 16, 2002 and logged under lot D2H160308. Two samples were received under chain of custody on August 19, 2002 and logged under lot D2H190144. These three lots are reported here under SDG CANNON-1.

The samples were received at the lab in good condition at temperatures of 2.8°C on August 14th, 4.0°C on August 16th, and 6.9°C on August 19th. The client was notified of the elevated sample temperatures for samples received on August 19th.

GC/MS Volatiles, SW846 8260B

The MS/MSD performed on sample D2H140282-001 was in control.

The MS/MSD performed on sample D2H140282-001 was in control.

The MS/MSD associated with batch 2234540 was performed on a sample from another client and/or lot.

General Chemistry, SW846 9060, 9020B, EPA 314.0

The method 314.0 MS/MSD performed on sample D2H190144-001 was in control for perchlorate.

The method 9020 MS/MSD performed on sample D2H190144-001 was in control for TOX.

The method 9060 MS/MSD performed on sample D2H190144-001 was in control for TOC.

Quality Control Definitions of Terms

Term	Definition
Batch	A set of up to 20 field samples plus associated laboratory QC samples that are similar in composition (matrix) and that are processed within the same time period with the same reagent and standard lots.
Laboratory Control Sample and Laboratory Control Sample Duplicate (LCS/LCSD)	A volume of regent water for aqueous samples or a contaminant-free solid matrix (Ottawa sand) for soil and sediment samples which is spiked with known amounts of representative target analytes and required surrogates. A LCS is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects. An LCSD is a second Laboratory Control Sample.
Matrix Spike and Matrix Spike Duplicate (MS/MSD)	A field sample fortified with known quantities of target analytes that are also added to the LCS. Matrix spike duplicate is a second matrix spike sample. MSs/MSDs are carried throughout he entire analytical process and are used to determine sample matrix effect on accuracy of the measurement system. The accuracy and precision estimated using MS/MSD is only representative of the precision of the sample that was spiked.
Method Blank	A sample composed of all the reagents (in the same quantities) in reagent water carried through the entire analytical process. The method blank is used to monitor the level of contamination introduced during sample preparation steps.
Surrogate	Organic constituents not expected to be detected in environmental media and are added to every sample and QC at a known concentration. Surrogates are used to determine the efficiency of the sample preparation and the analytical process.
Sample Duplicate	A second aliquot of an environmental sample, taken form the same sample container when possible, that is processed independently with the first sample aliquot. The results are used to assess the effect of the sample matrix on the precision of the analytical process. The precision estimated using this sample is not necessarily representative to the precision for other samples in the batch.
Method Detection Limit "MDL"	The method detection limit is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from replicate analyses of low level standards in a typical representative matrix.
Reporting Limit "RL"	The STL reporting limit is normally the lowest level at which measurements become quantitatively meaningful, ie., the quantitation limit, which is approximately three times the MDL. Some projects require RLs that are less than the quantitation limit to achieve particular maximum contaminant levels (MCLs) or relevant and appropriate requirements (ARARs), but RLs cannot be less than the statistically determined MDL.

Quality Control Definitions of Qualifiers

Qualifier	Definition
*	Surrogate or Relative Percent Difference (RPD) is outside control limits.
a	Spiked analyte recovery is outside control limits.
B	Organics: Method blank contamination. The associated method blank contains the target analyte at a reportable level. Inorganics: Estimated result. Result is less than the RL
COL	More than 40% difference between the primary and confirmation detector results. The lower of the two results is reported.
DIL	The concentration is estimated or not reported due to dilution.
E	Estimated result. Result concentrations exceeds the calibration range.
G	Inorganics: Elevated reporting limit. The reporting limit is elevated due to matrix interference.
J	Organics: Estimated result. Result is less than RL Inorganics: Method blank contamination. The associated method blank contains the target analyte at a reportable level.
L	Serial dilution of a digestate in the analytical batch indicates that physical and chemical interferences are present
N	Spiked analyte recovery is outside stated control limits.
NC	The recovery and/or RPD were not calculated.
ND	Non-detect
p	Relative percent difference (RPD) is outside stated control limits.
Q	Elevated reporting limit. The reporting limit is elevated due to high analyte levels.
V	General Chemistry: Elevated reporting limit due to limited sample volume.
Wa	Post digestion spike recovery fell between 40-85% due to matrix interference.
Wb	Post digestion spike recovery fell between 115-150% due to matrix interference.
I	Percent recovery is estimated since the results exceeded the calibration range.
T1	A tentatively identified compound that did not generate a spectral match of 80% or greater. Typically called "unknown"
T2	A tentatively identified compound with a spectral match of 80% or better
T3	A tentatively identified compound that was calibrated for by the lab, but not on the client target analyte list.
IC	Diluted due to high inorganic chloride.

EXECUTIVE SUMMARY - Detection Highlights

CANNON-1 : D2H140282

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
CAFB-D 08/13/02 10:00 001				
Trichloroethene	0.57 J	1.0	ug/L	SW846 8260B
Total Organic Carbon	0.47 B	1.0	mg/L	SW846 9060
CAFB-C 08/13/02 11:00 002				
Trichloroethene	1.6	1.0	ug/L	SW846 8260B
Total Organic Carbon	0.75 B	1.0	mg/L	SW846 9060
CAFB-Q 08/13/02 12:00 003				
Total Organic Carbon	0.40 B	1.0	mg/L	SW846 9060

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

CANNON-1 : D2H160308

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
CAFB-5 08/15/02 09:55 001				
Total Organic Carbon	0.42 B,J	1.0	mg/L	SW846 9060
Perchlorate	4.6 B	20	ug/L	EPA 314.0
CAFB-T 08/15/02 11:10 002				
Chloromethane	0.60 J	2.0	ug/L	SW846 8260B
Total Organic Carbon	0.60 B,J	1.0	mg/L	SW846 9060
Perchlorate	6.5 B	20	ug/L	EPA 314.0
CAFB-U 08/15/02 12:10 003				
Total Organic Carbon	0.29 B,J	1.0	mg/L	SW846 9060

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

CANNON-1 : D2H190144

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
CAFB-B 08/16/02 08:30 001				
Methylene chloride	1.1	1.0	ug/L	SW846 8260B
Total Organic Carbon	0.40 B	1.0	mg/L	SW846 9060
Perchlorate	5.0 B	20	ug/L	EPA 314.0
CAFB-BB 08/16/02 09:00 002				
Methylene chloride	0.87 J	1.0	ug/L	SW846 8260B
Total Organic Carbon	0.40 B	1.0	mg/L	SW846 9060
Perchlorate	5.5 B	20	ug/L	EPA 314.0

METHODS SUMMARY

CANNON-1

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Perchlorate	EPA 314.0	EPA 314.0
Total Organic Carbon	SW846 9060	SW846 9060
Total Organic Halogens	SW846 9020B	SW846 9020B
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

CANNON-1

ANALYTICAL METHOD	ANALYST	ANALYST ID
EPA 314.0	Dave Elkin	000901
SW846 8260B	Dan Appelhans	001008
SW846 8260B	Jason Reinhardt	013454
SW846 8260B	Rwanda Todea	005716
SW846 9020B	Duane Allee	001470
SW846 9060	Dave Elkin	000901

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

CANNON-1 : D2H140282

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
E6HFQ	001	CAFB-D	08/13/02	10:00
E6HF4	002	CAFB-C	08/13/02	11:00
E6HF5	003	CAFB-Q	08/13/02	12:00
E6HF6	004	CAFB-Q-TB	08/13/02	12:15

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.

(Continued on next page)

SAMPLE SUMMARY

CANNON-1 : D2H160308

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
E6NMD	001	CAFB-5	08/15/02	09:55
E6NMN	002	CAFB-T	08/15/02	11:10
E6NMQ	003	CAFB-U	08/15/02	12:10
E6NMR	004	CAFB-U-TB	08/15/02	15:00

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.

(Continued on next page)

SAMPLE SUMMARY

CANNON-1 : D2H190144

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
E6QQC	001	CAFB-B	08/16/02	08:30
E6QQH	002	CAFB-BB	08/16/02	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-D

GC/MS Volatiles

Lot-Sample #...: D2H140282-001 **Work Order #...:** E6HFQ1AA **Matrix.....:** WG
Date Sampled...: 08/13/02 10:00 **Date Received..:** 08/14/02
Prep Date.....: 08/20/02 **Analysis Date..:** 08/20/02
Prep Batch #...: 2233453 **Analysis Time..:** 13:00
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-D

GC/MS Volatiles

Lot-Sample #...: D2H140282-001 **Work Order #...:** E6HFQ1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	10	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	**0.57 J**	**1.0**	**ug/L**	**0.24**
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(80 - 120)
1,2-Dichloroethane-d4	87	(72 - 127)
4-Bromofluorobenzene	95	(79 - 119)
Toluene-d8	108	(79 - 119)

NOTE(S):

J Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

CAFB-D

GC/MS Volatiles

Lot-Sample #: D2H140282-001 **Work Order #:** E6HFQ1AA **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
3-Methylheptyl acetate	72218-58-7	1.72 T2 M	15.987	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 #...: D2H140282-002 **Work Order #...:** E6HF41AA **Matrix.....:** WG
Date Sampled...: 08/13/02 11:00 **Date Received..:** 08/14/02
Prep Date.....: 08/20/02 **Analysis Date..:** 08/20/02
Prep Batch #...: 2233453 **Analysis Time..:** 14:09
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-C

GC/MS Volatiles

Lot-Sample #...: D2H140282-002 **Work Order #...:** E6HF41AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	10	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	**1.6**	**1.0**	**ug/L**	**0.24**
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(80 - 120)
1,2-Dichloroethane-d4	91	(72 - 127)
4-Bromofluorobenzene	96	(79 - 119)
Toluene-d8	108	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-C

GC/MS Volatiles

Lot-Sample #: D2H140282-002 **Work Order #:** E6HF41AA **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		1.0	M	12.883	ug/L
Acetic acid, 2-ethylhexyl este	103-09-3	2.52 T2	M	15.988	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 #...: D2H140282-003 **Work Order #...:** E6HF51AA **Matrix.....:** WG
Date Sampled...: 08/13/02 12:00 **Date Received..:** 08/14/02
Prep Date.....: 08/20/02 **Analysis Date..:** 08/20/02
Prep Batch #...: 2233453 **Analysis Time..:** 14:32
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

GC/MS Volatiles

Lot-Sample #...: D2H140282-003 **Work Order #...:** E6HF51AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	10	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	ND	1.0	ug/L	0.24
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(80 - 120)
1,2-Dichloroethane-d4	94	(72 - 127)
4-Bromofluorobenzene	97	(79 - 119)
Toluene-d8	105	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-Q

GC/MS Volatiles

Lot-Sample #: D2H140282-003 **Work Order #:** E6HF51AA **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
3-Methylheptyl acetate	72218-58-7	3.82 T2 M	15.989	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-TB

GC/MS Volatiles

Lot-Sample #...: D2H140282-004 **Work Order #...:** E6HF61AA **Matrix.....:** WQ
Date Sampled...: 08/13/02 12:15 **Date Received..:** 08/14/02
Prep Date.....: 08/20/02 **Analysis Date..:** 08/20/02
Prep Batch #...: 2233453 **Analysis Time..:** 14:55
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q-TB

GC/MS Volatiles

Lot-Sample #...: D2H140282-004 **Work Order #...:** E6HF61AA **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	10	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	ND	1.0	ug/L	0.24
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(80 - 120)
1,2-Dichloroethane-d4	91	(72 - 127)
4-Bromofluorobenzene	98	(79 - 119)
Toluene-d8	109	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-Q-TB

GC/MS Volatiles

Lot-Sample #: D2H140282-004 **Work Order #:** E6HF61AA **Matrix:** WQ

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Cyclotetrasiloxane, octamethyl	556-67-2	1.22 T2	M	12.881	ug/L
Acetic acid, 2-ethylhexyl este	103-09-3	3.22 T2	M	15.986	ug/L
Unknown		1.0	M	17.612	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-5

GC/MS Volatiles

Lot-Sample #...: D2H160308-001 **Work Order #...:** E6NMD1AA **Matrix.....:** WG
Date Sampled...: 08/15/02 09:55 **Date Received..:** 08/16/02
Prep Date.....: 08/21/02 **Analysis Date..:** 08/22/02
Prep Batch #...: 2234540 **Analysis Time..:** 00:01
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-5

GC/MS Volatiles

Lot-Sample #...: D2H160308-001 **Work Order #...:** E6NMD1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	10	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	ND	1.0	ug/L	0.24
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(80 - 120)
1,2-Dichloroethane-d4	102	(72 - 127)
4-Bromofluorobenzene	100	(79 - 119)
Toluene-d8	98	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-5

GC/MS Volatiles

Lot-Sample #: D2H160308-001 **Work Order #:** E6NMD1AA **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-T

GC/MS Volatiles

Lot-Sample #...: D2H160308-002 **Work Order #...:** E6NMN1AA **Matrix.....:** WG
Date Sampled...: 08/15/02 11:10 **Date Received..:** 08/16/02
Prep Date.....: 08/21/02 **Analysis Date..:** 08/22/02
Prep Batch #...: 2234540 **Analysis Time..:** 00:26
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	**0.60 J**	**2.0**	**ug/L**	**0.26**
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

GC/MS Volatiles

Lot-Sample #...: D2H160308-002 **Work Order #...:** E6NMN1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	10	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	ND	1.0	ug/L	0.24
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	107	(80 - 120)
1,2-Dichloroethane-d4	107	(72 - 127)
4-Bromofluorobenzene	103	(79 - 119)
Toluene-d8	98	(79 - 119)

NOTE(S):

J Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

CAFB-T

GC/MS Volatiles

Lot-Sample #: D2H160308-002 **Work Order #:** E6NMN1AA **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-U

GC/MS Volatiles

Lot-Sample #...: D2H160308-003 **Work Order #...:** E6NMQ1AA **Matrix.....:** WG
Date Sampled...: 08/15/02 12:10 **Date Received..:** 08/16/02
Prep Date.....: 08/21/02 **Analysis Date..:** 08/22/02
Prep Batch #...: 2234540 **Analysis Time..:** 00:51
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

GC/MS Volatiles

Lot-Sample #...: D2H160308-003 **Work Order #...:** E6NMQ1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	10	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	ND	1.0	ug/L	0.24
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(80 - 120)
1,2-Dichloroethane-d4	104	(72 - 127)
4-Bromofluorobenzene	98	(79 - 119)
Toluene-d8	100	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-U

GC/MS Volatiles

Lot-Sample #: D2H160308-003 **Work Order #:** E6NMQ1AA **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-U-TB

GC/MS Volatiles

Lot-Sample #...: D2H160308-004 **Work Order #...:** E6NMR1AA **Matrix.....:** WQ
Date Sampled...: 08/15/02 15:00 **Date Received..:** 08/16/02
Prep Date.....: 08/21/02 **Analysis Date..:** 08/22/02
Prep Batch #...: 2234540 **Analysis Time..:** 01:16
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U-TB

GC/MS Volatiles

Lot-Sample #...: D2H160308-004 **Work Order #...:** E6NMR1AA **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	ND	1.0	ug/L	0.86
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	10	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	ND	1.0	ug/L	0.24
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	105	(80 - 120)
1,2-Dichloroethane-d4	103	(72 - 127)
4-Bromofluorobenzene	100	(79 - 119)
Toluene-d8	97	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-U-TB

GC/MS Volatiles

Lot-Sample #: D2H160308-004 **Work Order #:** E6NMR1AA **Matrix:** WQ

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 #...: D2H190144-001 **Work Order #...:** E6QQC1AA **Matrix.....:** WG
Date Sampled...: 08/16/02 08:30 **Date Received..:** 08/19/02
Prep Date.....: 08/22/02 **Analysis Date..:** 08/22/02
Prep Batch #...: 2238302 **Analysis Time..:** 16:05
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

GC/MS Volatiles

Lot-Sample #...: D2H190144-001 **Work Order #...:** E6QQC1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	**1.1**	**1.0**	**ug/L**	**0.86**
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	10	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	ND	1.0	ug/L	0.24
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(80 - 120)
1,2-Dichloroethane-d4	75	(72 - 127)
4-Bromofluorobenzene	86	(79 - 119)
Toluene-d8	106	(79 - 119)

US GEOLOGICAL SURVEY

CAFB-B

GC/MS Volatiles

Lot-Sample #: D2H190144-001 **Work Order #:** E6QQC1AA **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		1.4	M	4.4576	ug/L
Unknown		1.0	M	5.2347	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-BB

GC/MS Volatiles

Lot-Sample #...: D2H190144-002 **Work Order #...:** E6QQH1AA **Matrix.....:** WG
Date Sampled...: 08/16/02 09:00 **Date Received..:** 08/19/02
Prep Date.....: 08/22/02 **Analysis Date..:** 08/22/02
Prep Batch #...: 2238302 **Analysis Time..:** 17:20
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	2.9
Acetonitrile	ND	20	ug/L	15
Acrolein	ND	20	ug/L	4.7
Acrylonitrile	ND	20	ug/L	4.9
Benzene	ND	1.0	ug/L	0.27
Bromodichloromethane	ND	1.0	ug/L	0.35
Bromoform	ND	1.0	ug/L	0.46
Bromomethane	ND	2.0	ug/L	0.28
Carbon disulfide	ND	1.0	ug/L	0.67
Carbon tetrachloride	ND	1.0	ug/L	0.35
Chlorobenzene	ND	1.0	ug/L	0.24
Chloroprene	ND	1.0	ug/L	0.35
Dibromochloromethane	ND	1.0	ug/L	0.37
Chloroethane	ND	2.0	ug/L	0.26
Chloroform	ND	1.0	ug/L	0.29
Chloromethane	ND	2.0	ug/L	0.26
Allyl chloride	ND	2.0	ug/L	0.64
Dibromomethane	ND	1.0	ug/L	0.40
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	0.70
Dichlorodifluoromethane	ND	2.0	ug/L	0.44
1,1-Dichloroethane	ND	1.0	ug/L	0.29
1,2-Dichloroethane	ND	1.0	ug/L	0.43
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.33
trans-1,2-Dichloroethene	ND	0.50	ug/L	0.25
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.54
1,2-Dichloropropane	ND	1.0	ug/L	0.38
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.31
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.36
1,4-Dioxane	ND	200	ug/L	36
Ethylbenzene	ND	1.0	ug/L	0.51
Ethyl methacrylate	ND	1.0	ug/L	0.79
Trichlorofluoromethane	ND	2.0	ug/L	0.43
2-Hexanone	ND	5.0	ug/L	1.8
Iodomethane	ND	1.0	ug/L	0.42
Isobutyl alcohol	ND	50	ug/L	26

(Continued on next page)

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-BB

GC/MS Volatiles

Lot-Sample #...: D2H190144-002 **Work Order #...:** E6QQH1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methacrylonitrile	ND	10	ug/L	4.7
Methylene chloride	**0.87 J**	**1.0**	**ug/L**	**0.86**
Methyl methacrylate	ND	1.0	ug/L	0.81
4-Methyl-2-pentanone	ND	5.0	ug/L	1.8
Propionitrile	ND	10	ug/L	8.2
Styrene	ND	1.0	ug/L	0.28
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.28
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.50
Tetrachloroethene	ND	1.0	ug/L	0.27
Toluene	ND	1.0	ug/L	0.26
1,1,1-Trichloroethane	ND	1.0	ug/L	0.32
1,1,2-Trichloroethane	ND	1.0	ug/L	0.41
Trichloroethene	ND	1.0	ug/L	0.24
1,2,3-Trichloropropane	ND	1.0	ug/L	0.76
Vinyl acetate	ND	2.0	ug/L	0.91
Vinyl chloride	ND	2.0	ug/L	0.26
Xylenes (total)	ND	1.0	ug/L	0.73
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L	0.49
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.46
2-Butanone (MEK)	ND	5.0	ug/L	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(80 - 120)
1,2-Dichloroethane-d4	93	(72 - 127)
4-Bromofluorobenzene	90	(79 - 119)
Toluene-d8	98	(79 - 119)

NOTE(S):

J Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

CAFB-BB

GC/MS Volatiles

Lot-Sample #: D2H190144-002 **Work Order #:** E6QQH1AA **Matrix:** WG

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown		1.7 J	M	5.2015	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

General Chemistry

Lot-Sample #...: D2H140282-001 **Work Order #...:** E6HFQ **Matrix.....:** WG
Date Sampled...: 08/13/02 10:00 **Date Received..:** 08/14/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate	ND	20	ug/L	EPA 314.0	09/05/02	2249489
		Dilution Factor: 1		Analysis Time..: 18:21	MDL.....: 1.5	
Total Organic Carbon	**0.47 B**	**1.0**	**mg/L**	**SW846 9060**	**09/06/02**	**2252272**
		Dilution Factor: 1		Analysis Time..: 22:00	MDL.....: 0.29	
Total Organic Halogens	ND	30	ug/L	SW846 9020B	09/03-09/04/02	2247363
		Dilution Factor: 1		Analysis Time..: 12:00	MDL.....: 4.5	

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 #...: D2H140282-002 **Work Order #...:** E6HF4 **Matrix.....:** WG
Date Sampled...: 08/13/02 11:00 **Date Received..:** 08/14/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate	ND	20	ug/L	EPA 314.0	09/05/02	2249489
		Dilution Factor: 1		Analysis Time..: 18:36	MDL.....: 1.5	
Total Organic Carbon	**0.75 B**	**1.0**	**mg/L**	**SW846 9060**	**09/06/02**	**2252272**
		Dilution Factor: 1		Analysis Time..: 22:00	MDL.....: 0.29	
Total Organic Halogens	ND	30	ug/L	SW846 9020B	09/03-09/04/02	2247363
		Dilution Factor: 1		Analysis Time..: 12:00	MDL.....: 4.5	

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-Q

General Chemistry

Lot-Sample #...: D2H140282-003 **Work Order #...:** E6HF5 **Matrix.....:** WG
Date Sampled...: 08/13/02 12:00 **Date Received..:** 08/14/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate	ND	20	ug/L	EPA 314.0	09/05/02	2249489
		Dilution Factor: 1		Analysis Time..: 18:51	MDL.....: 1.5	
Total Organic Carbon	**0.40 B**	**1.0**	**mg/L**	**SW846 9060**	**09/06/02**	**2252272**
		Dilution Factor: 1		Analysis Time..: 22:00	MDL.....: 0.29	
Total Organic Halogens	ND	30	ug/L	SW846 9020B	09/03-09/04/02	2247363
		Dilution Factor: 1		Analysis Time..: 12:00	MDL.....: 4.5	

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-5

General Chemistry

Lot-Sample #...: D2H160308-001 **Work Order #...:** E6NMD **Matrix.....:** WG
Date Sampled...: 08/15/02 09:55 **Date Received..:** 08/16/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate	**4.6 B**	**20**	**ug/L**	**EPA 314.0**	**09/05/02**	**2249489**
	Dilution Factor: 1			Analysis Time..: 19:21	MDL.....: 1.5	
Total Organic Carbon	**0.42 B,J**	**1.0**	**mg/L**	**SW846 9060**	**09/09-09/10/02**	**2253255**
	Dilution Factor: 1			Analysis Time..: 03:00	MDL.....: 0.29	
Total Organic Halogens	ND	30	ug/L	SW846 9020B	09/09/02	2254467
	Dilution Factor: 1			Analysis Time..: 12:00	MDL.....: 4.5	

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-T

General Chemistry

Lot-Sample #...: D2H160308-002 **Work Order #...:** E6NMN **Matrix.....:** WG
Date Sampled...: 08/15/02 11:10 **Date Received..:** 08/16/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate	6.5 B	20	ug/L	EPA 314.0	09/05/02	2249489
		Dilution Factor: 1		Analysis Time..: 19:36	MDL.....: 1.5	
Total Organic Carbon	0.60 B,J	1.0	mg/L	SW846 9060	09/09-09/10/02	2253255
		Dilution Factor: 1		Analysis Time..: 03:00	MDL.....: 0.29	
Total Organic Halogens	ND	30	ug/L	SW846 9020B	09/09/02	2254467
		Dilution Factor: 1		Analysis Time..: 12:00	MDL.....: 4.5	

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-U

General Chemistry

Lot-Sample #...: D2H160308-003 **Work Order #...:** E6NMQ **Matrix.....:** WG
Date Sampled...: 08/15/02 12:10 **Date Received..:** 08/16/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate	ND	20	ug/L	EPA 314.0	09/05/02	2249489
		Dilution Factor: 1		Analysis Time..: 19:51	MDL.....: 1.5	
Total Organic Carbon	**0.29 B,J**	**1.0**	**mg/L**	**SW846 9060**	**09/09-09/10/02**	**2253255**
		Dilution Factor: 1		Analysis Time..: 03:00	MDL.....: 0.29	
Total Organic Halogens	ND	30	ug/L	SW846 9020B	09/09/02	2254467
		Dilution Factor: 1		Analysis Time..: 12:00	MDL.....: 4.5	

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-B

General Chemistry

Lot-Sample #...: D2H190144-001 **Work Order #...:** E6QQC **Matrix.....:** WG
Date Sampled...: 08/16/02 08:30 **Date Received..:** 08/19/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate	**5.0 B**	**20**	**ug/L**	**EPA 314.0**	**09/05/02**	**2249489**
		Dilution Factor: 1		Analysis Time..: 21:51	MDL.....: 1.5	
Total Organic Carbon	**0.40 B**	**1.0**	**mg/L**	**SW846 9060**	**09/10/02**	**2254316**
		Dilution Factor: 1		Analysis Time..: 22:00	MDL.....: 0.29	
Total Organic Halogens	ND	30	ug/L	SW846 9020B	09/09-09/11/02	2254467
		Dilution Factor: 1		Analysis Time..: 12:00	MDL.....: 4.5	

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

US GEOLOGICAL SURVEY

Client Sample ID: CAFB-BB

General Chemistry

Lot-Sample #...: D2H190144-002 **Work Order #...:** E6QQH **Matrix.....:** WG
Date Sampled...: 08/16/02 09:00 **Date Received..:** 08/19/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate	**5.5 B**	**20**	**ug/L**	**EPA 314.0**	**09/05/02**	**2249489**
		Dilution Factor: 1		Analysis Time..: 22:37	MDL.....: 1.5	
Total Organic Carbon	**0.40 B**	**1.0**	**mg/L**	**SW846 9060**	**09/10/02**	**2254316**
		Dilution Factor: 1		Analysis Time..: 23:00	MDL.....: 0.29	
Total Organic Halogens	ND	30	ug/L	SW846 9020B	09/09-09/12/02	2254467
		Dilution Factor: 1		Analysis Time..: 12:00	MDL.....: 4.5	

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

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 18FEB03

DATA INVENTORY

1.1 Sample project number: Severn Trent Services Report # D2HG140282, D2H160308, & D2H190144

1.2 Operable unit and site: Landfill 5 unit, Cell 3

Sample collection date: 13, 15-16AUG01

1.3 Sample locations (location IDs): Wells CAFB-B, CAFB-C, CAFB-D, CAFB-O, 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	1 set
field duplicate	1	trip blank	2
equipment blank	0	ambient blank	0

Data validation level: **(circle one)** note--see appendix A for description of different levels

LEVEL 1 **LEVEL 2**

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 Perchlorate--Method EPA 314.0

SECTION 2.0: DATA REPORTS AND COMPLETENESS

Name of reviewer(s) and review date: Fredrick E. Gebhardt 18FEB03

LABORATORY DATA REPORTS

2.1 Analytical Results Report--report date: 23SEP03

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 ____

	VOC SW8260B	TOC SW9060	TOX SW9020
requested:	12	10	10
analyzed:	12	10	10

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 temperature upon receipt by lab? 2.8, 4.0, & 6.9 °C

2.8 Additional comments: The lab analytical report list a well CAFB-5, it is actually well CAFB-S. No equipment blanks were collected, all wells have dedicated pumps.

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

Name of reviewer(s) and review date: Fredrick E. Gebhardt 18FEB03

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: 13-16AUG03 analysis date limit: 27-30SEP03

Samples were analyzed by 22AUG03, 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 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]

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-Q-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]

CAFB-B, 2-unknown compounds
CAFB-BB, 1-unknown compound
CAFB-C, 1-unknown, acetic acid, 2 ethylhexyl
CAFB-D, methylheptyl acetate
CAFB-Q, methylheptyl acetate
CAFB-Q-TB, 1-unknown, cyclotetrasiloxane, aceticacid, 2ethylhexyl

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]

DCS results did not 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 results met frequency and QC acceptance criteria for VOC samples.

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 & BB had qualifier J for Methylene chloride. Sample CAFB-D had qualifier J for trichloroethene. Sample CAFB-T had qualifiers J for both chloromethane

3.18 Additional comments:

SECTION 4.0: TOTAL ORGANIC CARBON (TOC)-- METHOD SW9060

Name of reviewer(s) and review date: Fredrick E. Gebhardt 18FEB03

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: 13-16AUG03 analysis date limit: 10-13SEP03

Samples were analyzed by 10SEP03 and met required holding times.

PROJECT REPORTING LIMIT (PRL)

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

(Severn Trent 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]

N/A - See Comment 2.8.

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 detected a target analyte.

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 met frequency and QC acceptance criteria for TOC.

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-B, BB, C, D, O, S, T, and U all had qualifier B, result less than reporting limits. CAFB-S, T, & U had qualifier J, method blank contamination.

SECTION 6.0: PERCHLORATE
METHOD EPA 314.0

Name of reviewer(s) and review date: Fredrick E. Gebhardt 18FEB03

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: 13-16AUG03 analysis date limit: 10-13SEP03

Samples were analyzed by 12SEP03 and met required holding times.

PROJECT REPORTING LIMIT

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

(Severn Trent RL: 30 µg/L)

PRL was not provided in SAP. Reporting limits were not raised for any of the samples for Perchlorate 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]

N/A - See Comment 2.8.

SECTION 5.0: TOTAL ORGANIC HALOGENS (TOX) METHOD SW9020B

Name of reviewer(s) and review date: Frederick E. Gebhardt 18FEB03

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: 13-16AUG03 analysis date limit: 10-13SEP03

Samples were analyzed by 12SEP03 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]

N/A - See Comment 2.8.

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 results did not meet frequency and QC acceptance criteria.

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: ____

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 results met frequency and QC acceptance criteria.

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 CAFB-B, BB, S, & T had qualifier B, estimated results, result is less than report limits.

Appendix -- 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
Mg	magnesium
mg/L	milligrams per liter
Mn	manganese
Mo	molybdenum
MS/MSD	matrix spike/matrix spike duplicate
MW	monitoring well
Na	sodium

Checklist Abbreviations, Acronyms, and Notes -- *continued*

Abbreviations:

Ni	nickel
NO_2	nitrate
NO_3	nitrite
PAC	Chromic Acid Pit duplicate sample identification
PAH	polynuclear aromatic hydrocarbons
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
µg/L	microgram per liter

Checklist Abbreviations, Acronyms, and Notes -- *continued*

Abbreviations:

<	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.

QC DATA ASSOCIATION SUMMARY

CANNON-1 : D2H140282

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WG	SW846 9060		2252272	2252232
	WG	SW846 9020B		2247363	2247154
	WG	SW846 8260B		2233453	2233242
	WG	EPA 314.0		2249489	2249235
002	WG	SW846 9060		2252272	2252232
	WG	SW846 9020B		2247363	2247154
	WG	SW846 8260B		2233453	2233242
	WG	EPA 314.0		2249489	2249235
003	WG	SW846 9060		2252272	2252232
	WG	SW846 9020B		2247363	2247154
	WG	SW846 8260B		2233453	2233242
	WG	EPA 314.0		2249489	2249235
004	WQ	SW846 8260B		2233453	2233242
001	WG	SW846 9060		2253255	2253109
	WG	SW846 9020B		2254467	2254223
	WG	SW846 8260B		2234540	2234259
	WG	EPA 314.0		2249489	2249235
002	WG	SW846 9060		2253255	2253109
	WG	SW846 9020B		2254467	2254223
	WG	SW846 8260B		2234540	2234259
	WG	EPA 314.0		2249489	2249235
003	WG	SW846 9060		2253255	2253109
	WG	SW846 9020B		2254467	2254223
	WG	SW846 8260B		2234540	2234259
	WG	EPA 314.0		2249489	2249235
004	WQ	SW846 8260B		2234540	2234259
001	WG	SW846 9060		2254316	2254161
	WG	SW846 9020B		2254467	2254223
	WG	SW846 8260B		2238302	2238146
	WG	EPA 314.0		2249489	2249235
002	WG	SW846 9060		2254316	2254161
	WG	SW846 9020B		2254467	2254223
	WG	SW846 8260B		2238302	2238146
	WG	EPA 314.0		2249489	2249235

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: CANNON-1 **Work Order #...:** E60G21AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2H210000-453 E60G21AD-LCSD
Prep Date.....: 08/20/02 **Analysis Date..:** 08/20/02
Prep Batch #...: 2233453 **Analysis Time..:** 11:27
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	**80**	**(79 - 119)**			**SW846 8260B**
	79	**(79 - 119)**	**0.74**	**(0-20)**	**SW846 8260B**
Benzene	**106**	**(79 - 119)**			**SW846 8260B**
	106	**(79 - 119)**	**0.090**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**109**	**(76 - 116)**			**SW846 8260B**
	106	**(76 - 116)**	**2.1**	**(0-20)**	**SW846 8260B**
Toluene	**111**	**(75 - 122)**			**SW846 8260B**
	107	**(75 - 122)**	**4.4**	**(0-20)**	**SW846 8260B**
Trichloroethene	**99**	**(81 - 121)**			**SW846 8260B**
	103	**(81 - 121)**	**4.0**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(80 - 120)
	90	(80 - 120)
1,2-Dichloroethane-d4	87	(72 - 127)
	87	(72 - 127)
4-Bromofluorobenzene	96	(79 - 119)
	96	(79 - 119)
Toluene-d8	108	(79 - 119)
	108	(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 #...: CANNON-1 **Work Order #...:** E60G21AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2H210000-453 E60G21AD-LCSD
Prep Date.....: 08/20/02 **Analysis Date..:** 08/20/02
Prep Batch #...: 2233453 **Analysis Time..:** 11:27
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethene	**10.0**	**7.97**	**ug/L**	**80**		**SW846 8260B**
	10.0	**7.91**	**ug/L**	**79**	**0.74**	**SW846 8260B**
Benzene	**10.0**	**10.6**	**ug/L**	**106**		**SW846 8260B**
	10.0	**10.6**	**ug/L**	**106**	**0.090**	**SW846 8260B**
Chlorobenzene	**10.0**	**10.9**	**ug/L**	**109**		**SW846 8260B**
	10.0	**10.6**	**ug/L**	**106**	**2.1**	**SW846 8260B**
Toluene	**10.0**	**11.1**	**ug/L**	**111**		**SW846 8260B**
	10.0	**10.7**	**ug/L**	**107**	**4.4**	**SW846 8260B**
Trichloroethene	**10.0**	**9.94**	**ug/L**	**99**		**SW846 8260B**
	10.0	**10.3**	**ug/L**	**103**	**4.0**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(80 - 120)
	90	(80 - 120)
1,2-Dichloroethane-d4	87	(72 - 127)
	87	(72 - 127)
4-Bromofluorobenzene	96	(79 - 119)
	96	(79 - 119)
Toluene-d8	108	(79 - 119)
	108	(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 #...: CANNON-1 **Work Order #...:** E60G21AA **Matrix.....:** WATER
MB Lot-Sample #: D2H210000-453

Prep Date.....: 08/20/02 **Analysis Time..:** 12:13

Analysis Date..: 08/20/02 **Prep Batch #...:** 2233453
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	10	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
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
Ethyl methacrylate	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

(Continued on next page)

E.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: CANNON-1 **Work Order #...:** E60G21AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Propionitrile	ND	10	ug/L	SW846 8260B
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

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(80 - 120)
1,2-Dichloroethane-d4	89	(72 - 127)
4-Bromofluorobenzene	95	(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 #: D2H210000-453 B **Work Order #:** E60G21AA **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 #...: CANNON-1 **Work Order #...:** E6HFQ1AF-MS **Matrix.....:** WG
MS Lot-Sample #: D2H140282-001 E6HFQ1AG-MSD
Date Sampled...: 08/13/02 10:00 **Date Received..:** 08/14/02
Prep Date.....: 08/20/02 **Analysis Date..:** 08/20/02
Prep Batch #...: 2233453 **Analysis Time..:** 13:23
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	**85**	**(79 - 119)**			**SW846 8260B**
	83	**(79 - 119)**	**2.0**	**(0-20)**	**SW846 8260B**
Benzene	**108**	**(79 - 119)**			**SW846 8260B**
	111	**(79 - 119)**	**3.1**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**108**	**(76 - 116)**			**SW846 8260B**
	112	**(76 - 116)**	**3.5**	**(0-20)**	**SW846 8260B**
Toluene	**108**	**(75 - 122)**			**SW846 8260B**
	115	**(75 - 122)**	**5.9**	**(0-20)**	**SW846 8260B**
Trichloroethene	**107**	**(81 - 121)**			**SW846 8260B**
	109	**(81 - 121)**	**2.0**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(80 - 120)
	92	(80 - 120)
1,2-Dichloroethane-d4	91	(72 - 127)
	91	(72 - 127)
4-Bromofluorobenzene	96	(79 - 119)
	102	(79 - 119)
Toluene-d8	107	(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

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: CANNON-1 **Work Order #...:** E6HFQ1AF-MS **Matrix.....:** WG
MS Lot-Sample #: D2H140282-001 E6HFQ1AG-MSD
Date Sampled...: 08/13/02 10:00 **Date Received..:** 08/14/02
Prep Date.....: 08/20/02 **Analysis Date..:** 08/20/02
Prep Batch #...: 2233453 **Analysis Time..:** 13:23
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1-Dichloroethene	**ND**	**10.0**	**8.52**	**ug/L**	**85**		**SW846 8260B**
	ND	**10.0**	**8.34**	**ug/L**	**83**	**2.0**	**SW846 8260B**
Benzene	**ND**	**10.0**	**10.8**	**ug/L**	**108**		**SW846 8260B**
	ND	**10.0**	**11.1**	**ug/L**	**111**	**3.1**	**SW846 8260B**
Chlorobenzene	**ND**	**10.0**	**10.8**	**ug/L**	**108**		**SW846 8260B**
	ND	**10.0**	**11.2**	**ug/L**	**112**	**3.5**	**SW846 8260B**
Toluene	**ND**	**10.0**	**10.8**	**ug/L**	**108**		**SW846 8260B**
	ND	**10.0**	**11.5**	**ug/L**	**115**	**5.9**	**SW846 8260B**
Trichloroethene	**0.57**	**10.0**	**11.2**	**ug/L**	**107**		**SW846 8260B**
	0.57	**10.0**	**11.5**	**ug/L**	**109**	**2.0**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(80 - 120)
	92	(80 - 120)
1,2-Dichloroethane-d4	91	(72 - 127)
	91	(72 - 127)
4-Bromofluorobenzene	96	(79 - 119)
	102	(79 - 119)
Toluene-d8	107	(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 EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: CANNON-1 **Work Order #...:** E63CW1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2H220000-540 E63CW1AD-LCSD
Prep Date.....: 08/21/02 **Analysis Date..:** 08/21/02
Prep Batch #...: 2234540 **Analysis Time..:** 19:53
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	**99**	**(79 - 119)**			**SW846 8260B**
	103	**(79 - 119)**	**3.9**	**(0-20)**	**SW846 8260B**
Benzene	**101**	**(79 - 119)**			**SW846 8260B**
	103	**(79 - 119)**	**2.1**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**102**	**(76 - 116)**			**SW846 8260B**
	101	**(76 - 116)**	**0.30**	**(0-20)**	**SW846 8260B**
Toluene	**102**	**(75 - 122)**			**SW846 8260B**
	107	**(75 - 122)**	**4.8**	**(0-20)**	**SW846 8260B**
Trichloroethene	**102**	**(81 - 121)**			**SW846 8260B**
	103	**(81 - 121)**	**0.69**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	110	(80 - 120)
	111	(80 - 120)
1,2-Dichloroethane-d4	107	(72 - 127)
	106	(72 - 127)
4-Bromofluorobenzene	110	(79 - 119)
	110	(79 - 119)
Toluene-d8	104	(79 - 119)
	106	(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 #...: CANNON-1 **Work Order #...:** E63CW1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2H220000-540 E63CW1AD-LCSD
Prep Date.....: 08/21/02 **Analysis Date..:** 08/21/02
Prep Batch #...: 2234540 **Analysis Time..:** 19:53
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethene	**10.0**	**9.89**	**ug/L**	**99**		**SW846 8260B**
	10.0	**10.3**	**ug/L**	**103**	**3.9**	**SW846 8260B**
Benzene	**10.0**	**10.1**	**ug/L**	**101**		**SW846 8260B**
	10.0	**10.3**	**ug/L**	**103**	**2.1**	**SW846 8260B**
Chlorobenzene	**10.0**	**10.2**	**ug/L**	**102**		**SW846 8260B**
	10.0	**10.1**	**ug/L**	**101**	**0.30**	**SW846 8260B**
Toluene	**10.0**	**10.2**	**ug/L**	**102**		**SW846 8260B**
	10.0	**10.7**	**ug/L**	**107**	**4.8**	**SW846 8260B**
Trichloroethene	**10.0**	**10.2**	**ug/L**	**102**		**SW846 8260B**
	10.0	**10.3**	**ug/L**	**103**	**0.69**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	110	(80 - 120)
	111	(80 - 120)
1,2-Dichloroethane-d4	107	(72 - 127)
	106	(72 - 127)
4-Bromofluorobenzene	110	(79 - 119)
	110	(79 - 119)
Toluene-d8	104	(79 - 119)
	106	(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 #...: CANNON-1 **Work Order #...:** E63CW1AA **Matrix.....:** WATER
MB Lot-Sample #: D2H220000-540

Prep Date.....: 08/21/02 **Analysis Time..:** 20:43

Analysis Date..: 08/21/02 **Prep Batch #...:** 2234540
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
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 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
Dibromomethane	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-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
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
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 chloride	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
Acetonitrile	ND	20	ug/L	SW846 8260B
Acrolein	ND	20	ug/L	SW846 8260B
Chloroprene	ND	1.0	ug/L	SW846 8260B
Allyl chloride	ND	2.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	1.0	ug/L	SW846 8260B

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: CANNON-1 **Work Order #...:** E63CW1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,4-Dioxane	ND	200	ug/L	SW846 8260B
Ethyl methacrylate	ND	1.0	ug/L	SW846 8260B
Isobutyl alcohol	ND	50	ug/L	SW846 8260B
Acetone	ND	10	ug/L	SW846 8260B
Acrylonitrile	ND	20	ug/L	SW846 8260B
Carbon disulfide	ND	1.0	ug/L	SW846 8260B
trans-1,4-Dichloro-2-butene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Iodomethane	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Vinyl acetate	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	1.0	ug/L	SW846 8260B
2-Butanone (MEK)	ND	5.0	ug/L	SW846 8260B
Methacrylonitrile	ND	10	ug/L	SW846 8260B
Methyl methacrylate	ND	1.0	ug/L	SW846 8260B
Propionitrile	ND	10	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(80 - 120)
1,2-Dichloroethane-d4	98	(72 - 127)
4-Bromofluorobenzene	100	(79 - 119)
Toluene-d8	100	(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 #: D2H220000-540 B **Work Order #:** E63CW1AA **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 #...: CANNON-1 **Work Order #...:** E6KAN1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: D2H150229-003 E6KAN1AD-MSD
Date Sampled...: 08/15/02 08:40 **Date Received..:** 08/15/02
Prep Date.....: 08/21/02 **Analysis Date..:** 08/21/02
Prep Batch #...: 2234540 **Analysis Time..:** 21:57
Dilution Factor: 40

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	**75 a**	**(79 - 119)**			**SW846 8260B**
	72 a	**(79 - 119)**	**1.0**	**(0-20)**	**SW846 8260B**
Benzene	**97**	**(79 - 119)**			**SW846 8260B**
	99	**(79 - 119)**	**1.6**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**98**	**(76 - 116)**			**SW846 8260B**
	101	**(76 - 116)**	**3.1**	**(0-20)**	**SW846 8260B**
Toluene	**98**	**(75 - 122)**			**SW846 8260B**
	102	**(75 - 122)**	**3.6**	**(0-20)**	**SW846 8260B**
Trichloroethene	**101**	**(81 - 121)**			**SW846 8260B**
	101	**(81 - 121)**	**0.57**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	112	(80 - 120)
	109	(80 - 120)
1,2-Dichloroethane-d4	106	(72 - 127)
	101	(72 - 127)
4-Bromofluorobenzene	106	(79 - 119)
	105	(79 - 119)
Toluene-d8	103	(79 - 119)
	104	(79 - 119)

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.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: CANNON-1 **Work Order #...:** E6KAN1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: D2H150229-003 E6KAN1AD-MSD
Date Sampled...: 08/15/02 08:40 **Date Received..:** 08/15/02
Prep Date.....: 08/21/02 **Analysis Date..:** 08/21/02
Prep Batch #...: 2234540 **Analysis Time..:** 21:57
Dilution Factor: 40

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1-Dichloroethene	**630**	**400**	**932**	**ug/L**	**75 a**		**SW846 8260B**
	630	**400**	**923**	**ug/L**	**72 a**	**1.0**	**SW846 8260B**
Benzene	**ND**	**400**	**388**	**ug/L**	**97**		**SW846 8260B**
	ND	**400**	**394**	**ug/L**	**99**	**1.6**	**SW846 8260B**
Chlorobenzene	**ND**	**400**	**390**	**ug/L**	**98**		**SW846 8260B**
	ND	**400**	**402**	**ug/L**	**101**	**3.1**	**SW846 8260B**
Toluene	**ND**	**400**	**393**	**ug/L**	**98**		**SW846 8260B**
	ND	**400**	**408**	**ug/L**	**102**	**3.6**	**SW846 8260B**
Trichloroethene	**90**	**400**	**495**	**ug/L**	**101**		**SW846 8260B**
	90	**400**	**493**	**ug/L**	**101**	**0.57**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	112	(80 - 120)
	109	(80 - 120)
1,2-Dichloroethane-d4	106	(72 - 127)
	101	(72 - 127)
4-Bromofluorobenzene	106	(79 - 119)
	105	(79 - 119)
Toluene-d8	103	(79 - 119)
	104	(79 - 119)

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 EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: CANNON-1 **Work Order #...:** E67AA1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2H260000-302 E67AA1AD-LCSD
Prep Date.....: 08/22/02 **Analysis Date..:** 08/22/02
Prep Batch #...: 2238302 **Analysis Time..:** 10:52
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	**82**	**(79 - 119)**			**SW846 8260B**
	82	**(79 - 119)**	**0.33**	**(0-20)**	**SW846 8260B**
Benzene	**96**	**(79 - 119)**			**SW846 8260B**
	96	**(79 - 119)**	**0.17**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**100**	**(76 - 116)**			**SW846 8260B**
	100	**(76 - 116)**	**0.21**	**(0-20)**	**SW846 8260B**
Toluene	**98**	**(75 - 122)**			**SW846 8260B**
	100	**(75 - 122)**	**1.2**	**(0-20)**	**SW846 8260B**
Trichloroethene	**97**	**(81 - 121)**			**SW846 8260B**
	96	**(81 - 121)**	**1.1**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(80 - 120)
	103	(80 - 120)
1,2-Dichloroethane-d4	92	(72 - 127)
	93	(72 - 127)
4-Bromofluorobenzene	98	(79 - 119)
	96	(79 - 119)
Toluene-d8	104	(79 - 119)
	105	(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 #...: CANNON-1 **Work Order #...:** E67AA1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: D2H260000-302 E67AA1AD-LCSD
Prep Date.....: 08/22/02 **Analysis Date..:** 08/22/02
Prep Batch #...: 2238302 **Analysis Time..:** 10:52
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethene	**10.0**	**8.18**	**ug/L**	**82**		**SW846 8260B**
	10.0	**8.21**	**ug/L**	**82**	**0.33**	**SW846 8260B**
Benzene	**10.0**	**9.60**	**ug/L**	**96**		**SW846 8260B**
	10.0	**9.59**	**ug/L**	**96**	**0.17**	**SW846 8260B**
Chlorobenzene	**10.0**	**10.0**	**ug/L**	**100**		**SW846 8260B**
	10.0	**10.0**	**ug/L**	**100**	**0.21**	**SW846 8260B**
Toluene	**10.0**	**9.85**	**ug/L**	**98**		**SW846 8260B**
	10.0	**9.97**	**ug/L**	**100**	**1.2**	**SW846 8260B**
Trichloroethene	**10.0**	**9.70**	**ug/L**	**97**		**SW846 8260B**
	10.0	**9.60**	**ug/L**	**96**	**1.1**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(80 - 120)
	103	(80 - 120)
1,2-Dichloroethane-d4	92	(72 - 127)
	93	(72 - 127)
4-Bromofluorobenzene	98	(79 - 119)
	96	(79 - 119)
Toluene-d8	104	(79 - 119)
	105	(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 #...: CANNON-1 **Work Order #...:** E67AA1AA **Matrix.....:** WATER
MB Lot-Sample #: D2H260000-302

Prep Date.....: 08/22/02 **Analysis Time..:** 11:42

Analysis Date..: 08/22/02 **Prep Batch #...:** 2238302
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	10	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
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
Ethyl methacrylate	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

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: CANNON-1 **Work Order #...:** E67AA1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Propionitrile	ND	10	ug/L	SW846 8260B
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

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(80 - 120)
1,2-Dichloroethane-d4	89	(72 - 127)
4-Bromofluorobenzene	88	(79 - 119)
Toluene-d8	97	(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 #: D2H260000-302 B **Work Order #:** E67AA1AA **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 #...: CANNON-1 **Work Order #...:** E6QQC1AF-MS **Matrix.....:** WG
MS Lot-Sample #: D2H190144-001 E6QQC1AG-MSD
Date Sampled...: 08/16/02 08:30 **Date Received..:** 08/19/02
Prep Date.....: 08/22/02 **Analysis Date..:** 08/22/02
Prep Batch #...: 2238302 **Analysis Time..:** 16:30
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	**93**	**(79 - 119)**			**SW846 8260B**
	87	**(79 - 119)**	**6.6**	**(0-20)**	**SW846 8260B**
Benzene	**109**	**(79 - 119)**			**SW846 8260B**
	102	**(79 - 119)**	**6.6**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**109**	**(76 - 116)**			**SW846 8260B**
	105	**(76 - 116)**	**4.1**	**(0-20)**	**SW846 8260B**
Toluene	**112**	**(75 - 122)**			**SW846 8260B**
	101	**(75 - 122)**	**10**	**(0-20)**	**SW846 8260B**
Trichloroethene	**109**	**(81 - 121)**			**SW846 8260B**
	103	**(81 - 121)**	**6.0**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	105	(80 - 120)
	109	(80 - 120)
1,2-Dichloroethane-d4	91	(72 - 127)
	99	(72 - 127)
4-Bromofluorobenzene	95	(79 - 119)
	94	(79 - 119)
Toluene-d8	102	(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

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: CANNON-1 **Work Order #...:** E6QQC1AF-MS **Matrix.....:** WG
MS Lot-Sample #: D2H190144-001 E6QQC1AG-MSD
Date Sampled...: 08/16/02 08:30 **Date Received..:** 08/19/02
Prep Date.....: 08/22/02 **Analysis Date..:** 08/22/02
Prep Batch #...: 2238302 **Analysis Time..:** 16:30
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1-Dichloroethene	**ND**	**10.0**	**9.30**	**ug/L**	**93**		**SW846 8260B**
	ND	**10.0**	**8.71**	**ug/L**	**87**	**6.6**	**SW846 8260B**
Benzene	**ND**	**10.0**	**10.9**	**ug/L**	**109**		**SW846 8260B**
	ND	**10.0**	**10.2**	**ug/L**	**102**	**6.6**	**SW846 8260B**
Chlorobenzene	**ND**	**10.0**	**10.9**	**ug/L**	**109**		**SW846 8260B**
	ND	**10.0**	**10.5**	**ug/L**	**105**	**4.1**	**SW846 8260B**
Toluene	**ND**	**10.0**	**11.2**	**ug/L**	**112**		**SW846 8260B**
	ND	**10.0**	**10.1**	**ug/L**	**101**	**10**	**SW846 8260B**
Trichloroethene	**ND**	**10.0**	**10.9**	**ug/L**	**109**		**SW846 8260B**
	ND	**10.0**	**10.3**	**ug/L**	**103**	**6.0**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	105	(80 - 120)
	109	(80 - 120)
1,2-Dichloroethane-d4	91	(72 - 127)
	99	(72 - 127)
4-Bromofluorobenzene	95	(79 - 119)
	94	(79 - 119)
Toluene-d8	102	(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

General Chemistry

Lot-Sample #...: CANNON-1 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate		WO#:E7VJJ1AC-LCS/E7VJJ1AD-LCSD				LCS Lot-Sample#: D2I060000-489	
	97	(80 - 120)			EPA 314.0	09/05/02	2249489
	99	(80 - 120)	1.7	(0-20)	EPA 314.0	09/05/02	2249489
		Dilution Factor: 1			Analysis Time..: 17:36		
Total Organic Halogens		WO#:E7NMW1AC-LCS/E7NMW1AD-LCSD				LCS Lot-Sample#: D2I040000-363	
	105	(75 - 113)			SW846 9020B	09/03/02	2247363
	89	(75 - 113)	17	(0-30)	SW846 9020B	09/03-09/04/02	2247363
		Dilution Factor: 1			Analysis Time..: 12:00		
Total Organic Halogens		WO#:E73481AC-LCS/E73481AD-LCSD				LCS Lot-Sample#: D2I110000-467	
	96	(75 - 113)			SW846 9020B	09/09/02	2254467
	88	(75 - 113)	8.1	(0-30)	SW846 9020B	09/09-09/10/02	2254467
		Dilution Factor: 1			Analysis Time..: 12:00		
Total Organic Carbon		WO#:E7XV81AC-LCS/E7XV81AD-LCSD				LCS Lot-Sample#: D2I090000-272	
	106	(90 - 110)			SW846 9060	09/06/02	2252272
	102	(90 - 110)	3.5	(0-10)	SW846 9060	09/06/02	2252272
		Dilution Factor: 1			Analysis Time..: 21:00		
Total Organic Carbon		WO#:E70TJ1AC-LCS/E70TJ1AD-LCSD				LCS Lot-Sample#: D2I100000-255	
	106	(90 - 110)			SW846 9060	09/09-09/10/02	2253255
	105	(90 - 110)	0.83	(0-10)	SW846 9060	09/09-09/10/02	2253255
		Dilution Factor: 1			Analysis Time..: 00:00		
Total Organic Carbon		WO#:E73AL1AC-LCS/E73AL1AD-LCSD				LCS Lot-Sample#: D2I110000-316	
	108	(90 - 110)			SW846 9060	09/10/02	2254316
	110	(90 - 110)	2.2	(0-10)	SW846 9060	09/10/02	2254316
		Dilution Factor: 1			Analysis Time..: 22:00		

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: CANNON-1 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate		WO#:E7VJJ1AC-LCS/E7VJJ1AD-LCSD LCS Lot-Sample#: D2I060000-489						
	200	194	ug/L	97		EPA 314.0	09/05/02	2249489
	200	197	ug/L	99	1.7	EPA 314.0	09/05/02	2249489
		Dilution Factor: 1				Analysis Time..: 17:36		
Total Organic Halogens		WO#:E7NMW1AC-LCS/E7NMW1AD-LCSD LCS Lot-Sample#: D2I040000-363						
	100	105	ug/L	105		SW846 9020B	09/03/02	2247363
	100	88.6	ug/L	89	17	SW846 9020B	09/03-09/04/02	2247363
		Dilution Factor: 1				Analysis Time..: 12:00		
Total Organic Halogens		WO#:E73481AC-LCS/E73481AD-LCSD LCS Lot-Sample#: D2I110000-467						
	100	95.8	ug/L	96		SW846 9020B	09/09/02	2254467
	100	88.3	ug/L	88	8.1	SW846 9020B	09/09-09/10/02	2254467
		Dilution Factor: 1				Analysis Time..: 12:00		
Total Organic Carbon		WO#:E7XV81AC-LCS/E7XV81AD-LCSD LCS Lot-Sample#: D2I090000-272						
	25.0	26.5	mg/L	106		SW846 9060	09/06/02	2252272
	25.0	25.6	mg/L	102	3.5	SW846 9060	09/06/02	2252272
		Dilution Factor: 1				Analysis Time..: 21:00		
Total Organic Carbon		WO#:E70TJ1AC-LCS/E70TJ1AD-LCSD LCS Lot-Sample#: D2I100000-255						
	25.0	26.4	mg/L	106		SW846 9060	09/09-09/10/02	2253255
	25.0	26.2	mg/L	105	0.83	SW846 9060	09/09-09/10/02	2253255
		Dilution Factor: 1				Analysis Time..: 00:00		
Total Organic Carbon		WO#:E73AL1AC-LCS/E73AL1AD-LCSD LCS Lot-Sample#: D2I110000-316						
	25.0	27.0	mg/L	108		SW846 9060	09/10/02	2254316
	25.0	27.6	mg/L	110	2.2	SW846 9060	09/10/02	2254316
		Dilution Factor: 1				Analysis Time..: 22:00		

NOTE(S):

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

METHOD BLANK REPORT

General Chemistry

Client Lot #...: CANNON-1 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate		Work Order #: E7VJJ1AA		MB Lot-Sample #:	D2I060000-489	
	ND	20	ug/L	EPA 314.0	09/05/02	2249489
		Dilution Factor: 1				
		Analysis Time..: 18:06				
Total Organic Halogens		Work Order #: E7NMW1AA		MB Lot-Sample #:	D2I040000-363	
	ND	30	ug/L	SW846 9020B	09/03/02	2247363
		Dilution Factor: 1				
		Analysis Time..: 12:00				
Total Organic Halogens		Work Order #: E73481AA		MB Lot-Sample #:	D2I110000-467	
	ND	30	ug/L	SW846 9020B	09/09/02	2254467
		Dilution Factor: 1				
		Analysis Time..: 12:00				
Total Organic Carbon		Work Order #: E7XV81AA		MB Lot-Sample #:	D2I090000-272	
	ND	1.0	mg/L	SW846 9060	09/06/02	2252272
		Dilution Factor: 1				
		Analysis Time..: 21:00				
Total Organic Carbon		Work Order #: E70TJ1AA		MB Lot-Sample #:	D2I100000-255	
	0.66 B	**1.0**	**mg/L**	**SW846 9060**	**09/09-09/10/02**	**2253255**
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Organic Carbon		Work Order #: E73AL1AA		MB Lot-Sample #:	D2I110000-316	
	ND	1.0	mg/L	SW846 9060	09/10/02	2254316
		Dilution Factor: 1				
		Analysis Time..: 23:00				

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 #...: CANNON-1 **Matrix.....:** WATER
Date Sampled...: 08/14/02 10:10 **Date Received..:** 08/15/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Halogens			WO#: E6JQA1D9-MS/E6JQA1EA-MSD			MS Lot-Sample #: D2H150167-001	
	106	(75 - 113)			SW846 9020B	09/03/02	2247362
	116 N	(75 - 113)	9.4	(0-30)	SW846 9020B	09/03/02	2247362
		Dilution Factor: 1					
		Analysis Time..: 12:00					
Total Organic Carbon			WO#: E6X8V1D2-MS/E6X8V1D3-MSD			MS Lot-Sample #: D2H210283-001	
	104 I	(90 - 110)			SW846 9060	09/06/02	2252272
	106 I	(90 - 110)	0.92	(0-10)	SW846 9060	09/06/02	2252272
		Dilution Factor: 1					
		Analysis Time..: 23:00					
Total Organic Carbon			WO#: E7DCF1CV-MS/E7DCF1CW-MSD			MS Lot-Sample #: D2H280297-001	
	104	(90 - 110)			SW846 9060	09/09-09/10/02	2253255
	100	(90 - 110)	3.2	(0-10)	SW846 9060	09/09-09/10/02	2253255
		Dilution Factor: 1					
		Analysis Time..: 00:00					

NOTE(S):

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

I Estimated result. Result concentration exceeds the calibration range.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: CANNON-1 **Matrix.....:** WATER
Date Sampled...: 08/14/02 10:10 **Date Received..:** 08/15/02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Halogens			WO#: E6JQA1D9-MS/E6JQA1EA-MSD				MS Lot-Sample #: D2H150167-001		
	ND	100	106	ug/L	106		SW846 9020B	09/03/02	2247362
	ND	100	116 N	ug/L	116	9.4	SW846 9020B	09/03/02	2247362
			Dilution Factor: 1						
			Analysis Time..: 12:00						
Total Organic Carbon			WO#: E6X8V1D2-MS/E6X8V1D3-MSD				MS Lot-Sample #: D2H210283-001		
	34	25.0	60.4 I	mg/L	104		SW846 9060	09/06/02	2252272
	34	25.0	61.0 I	mg/L	106	0.92	SW846 9060	09/06/02	2252272
			Dilution Factor: 1						
			Analysis Time..: 23:00						
Total Organic Carbon			WO#: E7DCF1CV-MS/E7DCF1CW-MSD				MS Lot-Sample #: D2H280297-001		
	4.0	25.0	30.0	mg/L	104		SW846 9060	09/09-09/10/02	2253255
	4.0	25.0	29.0	mg/L	100	3.2	SW846 9060	09/09-09/10/02	2253255
			Dilution Factor: 1						
			Analysis Time..: 00:00						

NOTE(S):

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

I Estimated result. Result concentration exceeds the calibration range.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: CANNON-1 **Matrix.....:** WG
Date Sampled...: 08/16/02 08:30 **Date Received..:** 08/19/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate		WO#: E6QQC1AM-MS/E6QQC1AN-MSD				MS Lot-Sample #: D2H190144-001	
	88	(80 - 120)			EPA 314.0	09/05/02	2249489
	95	(80 - 120)	7.9	(0-20)	EPA 314.0	09/05/02	2249489
		Dilution Factor: 1					
		Analysis Time..: 22:06					
Total Organic Halogens		WO#: E6QQC1AH-MS/E6QQC1AJ-MSD				MS Lot-Sample #: D2H190144-001	
	94	(75 - 113)			SW846 9020B	09/09-09/11/02	2254467
	94	(75 - 113)	0.32	(0-30)	SW846 9020B	09/09-09/11/02	2254467
		Dilution Factor: 1					
		Analysis Time..: 12:00					
Total Organic Carbon		WO#: E6QQC1AK-MS/E6QQC1AL-MSD				MS Lot-Sample #: D2H190144-001	
	106	(90 - 110)			SW846 9060	09/10/02	2254316
	108	(90 - 110)	1.4	(0-10)	SW846 9060	09/10/02	2254316
		Dilution Factor: 1					
		Analysis Time..: 22:00					

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: CANNON-1 **Matrix.....:** WG
Date Sampled...: 08/16/02 08:30 **Date Received..:** 08/19/02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Perchlorate			WO#: E6QQC1AM-MS/E6QQC1AN-MSD				MS Lot-Sample #: D2H190144-001		
	5.0	100	92.6	ug/L	88		EPA 314.0	09/05/02	2249489
	5.0	100	100	ug/L	95	7.9	EPA 314.0	09/05/02	2249489
			Dilution Factor: 1						
			Analysis Time..: 22:06						
Total Organic Halogens			WO#: E6QQC1AH-MS/E6QQC1AJ-MSD				MS Lot-Sample #: D2H190144-001		
	ND	100	93.9	ug/L	94		SW846 9020B	09/09-09/11/02	2254467
	ND	100	93.6	ug/L	94	0.32	SW846 9020B	09/09-09/11/02	2254467
			Dilution Factor: 1						
			Analysis Time..: 12:00						
Total Organic Carbon			WO#: E6QQC1AK-MS/E6QQC1AL-MSD				MS Lot-Sample #: D2H190144-001		
	0.40	25.0	26.9	mg/L	106		SW846 9060	09/10/02	2254316
	0.40	25.0	27.3	mg/L	108	1.4	SW846 9060	09/10/02	2254316
			Dilution Factor: 1						
			Analysis Time..: 22:00						

NOTE(S):

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

2. 8/14

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	PACKING AND SHIPPING DETAILS
Sampling Location: Cannon Air Force Base, NM	Packed and Sealed for Shipping by: Fred Gebhardt — Seal Number: 243650
Team Leader: Project chief: Fredrick E. Gebhardt	Delivered to Shipper by: Fred Gebhardt — Airbill Number: 827368343910
	Sampling Status: ☐ Done ☒ Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
8/13/2002	1000	CAFB- D	Ground water	5	All Appx-IX: TOC-SW9060, TOX-SW9020, VOC-SW5030/SW8260B, Perchlorate-EPA 314.0	Environmental Sample
8/13/02	1100	CAFB-C	"	5	"	"
8/13/02	1200	CAFB-Q	"	5	"	"
8/13/02	1215	CAFB-Q-TB	ULTRA PURE WATER	2	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
Fredrick E. Gebhardt	TO FEDERAL EXPRESS	8/13/02	1600	Severn Trent Services 4955 Yarrow Street Arvada, CO 80002 ph: (303) 421-6611 Attention: Karen Kuoppala	Condition of Contents
	C Brown	8/14/02	0845		Contents Temperature
					Laboratory Project Number

4.0°C
DE
8/16

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

Sampling Location
Cannon Air Force Base, NM

Team Leader
Project chief: Fredrick E. Gebhardt

PACKING AND SHIPPING DETAILS

Packed and Sealed for Shipping by: Fred Gebhardt
Seal Number: 243660
Delivered to Shipper by: Fred Gebhardt
Airbill Number: 827368343910
Sampling Status: [X] Done [ ] Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
8/15 2002	0955	CAFB-S	Ground water	5	All Appx-IX: TOC-SW9060, TOX-SW9020, VOC-SW5030/SW8260B, Perchlorate-EPA 314.0	Environmental Sample
"	1110	CAFB-T	"	5	"	"
"	1210	CAFB-U ~~CAF-B~~	"	5	"	"
"	1500	CAFB-U-TB	ULTRA PURE WATER	2	VOC - SW5030/SW8260B	TRIP BLANK

Additional Comments

CHAIN OF CUSTODY RECORD

Relinquished by (signed)	Received by (signed)	Date	Time
Fredrick E. Gebhardt	TO FEDERAL EXPRESS	8/15/02	1600
	[signature]	8/16/02	0915

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

6.0 gb 8/19

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	PACKING AND SHIPPING DETAILS
Sampling Location: Cannon Air Force Base, NM	Packed and Sealed for Shipping by: Fred Gebhardt — Seal Number: 243670
Team Leader: Project chief: Fredrick E. Gebhardt	Delivered to Shipper by: Fred Gebhardt — Airbill Number: 827368343909
	Sampling Status: [X] Done [ ] Continuing

Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks
8/16 2002	0830	CAFB-B	Ground water	5	All Appx-IX: TOC-SW9060, TOX-SW9020, VOC-SW5030/SW8260B, Perchlorate-EPA 314.0	Environmental Sample
8/16/02	0830	CAFB-B-MS	"	5	"	MATRIX SPIKE
8/16/02	0830	CAFB-B-MSD	"	5	"	MATRIX SPIKE DUPLICATE
8/16/02	0900	CAFB-BB	"	5	"	ENVIRONMENTAL 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
Fredrick E. Gebhardt	TO FEDERAL EXPRESS	8/16/02	1600	Severn Trent Services 4955 Yarrow Street Arvada, CO 80002 ph: (303) 421-6611 Attention: Karen Kuoppala	Condition of Contents
	Brown	8/19/02	0830		Contents Temperature
					Laboratory Project Number

STL Denver

Sample Receiving Checklist

Lot #: D2H140282 Date/Time Received: 08.14.02

Company Name & Sampling Site: USGS-Cannon

*Cooler #(s): 1

Temperatures (°C): 2.8

PM to Complete This Section: *Yes* *No*

Residual chlorine check required: ☐ ☐

Time Zone:

• EDT/EST • CDT/CST • MDT/MST • PDT/PST • OTHER

25228

Unpacking & Labeling Check Points:

N/A	Yes	No		Initials
☐	☒	☐	1. Cooler seals intact. (N/A if hand delivered)	JB
	☒	☐	2. Chain of custody present.	
	☐	☒	3. Bottles broken and/or are leaking, comment if yes.	
	☐	☒	4. Multiphase samples present? If yes, comment below.	
			PHOTOGRAPH BROKEN BOTTLES/MULTIPHASE SAMPLES	
	☒	☐	5. Proper container & preservatives used (ref. Attachment D of SOP# DEN-QA-0003)	
☐	☒	☐	6. pH of all samples checked and meet requirements, note exceptions.	
	☒	☐	7. Chain of custody includes "received by" and "relinquished" by signatures, dates, and times.	
	☐	☒	8. Receipt date(s) > 48 hours past the collection date(s)? If yes, notify PA/PM.	
	☒	☐	9. Chain of custody agrees with bottle count, comment if no.	
	☒	☐	10. Chain of custody agrees with labels, comment if no.	
☐	☒	☐	11. VOA samples filled completely, comment if no.	
☐	☒	☐	12. VOA vials preserved, check label. Preservative ☐HCl ☒4±2°C ☐Sodium Thiosulfate	
	☐	☒	13. Did samples require preservation with sodium thiosulfate?	
☒	☐	☐	14. If yes to #12, did the samples contain residual chlorine?	
☒	☐	☐	15. Sediment present in dissolved/filtered bottles.	
	☐	☒	16. Are analyses with short holding times requested?	
	☐	☒	17. Was a quick Turn Around (TAT) requested?	
☒	☐	☐	18. Is extra sample volume provided for MS, MSD or matrix duplicates?	
			DOUBLECHECK METALS,SAMPLE LABELS & SUBCONTRACT	
☒	☐	☐	19. Subcontract COC signed and sent with samples to bottle prep?	
	☒	☐	20. Were sample labels double-checked by a second person?	JN
☒	☐	☐	21. Were sample bottles and COC double checked for dissolved/filtered metals by a second person?	
☒	☐	☐	22. If applicable, were AFCEE Metals placed in the walkin refrigerator?	

Document any problems or discrepancies and the actions taken to resolve them on a Condition Upon Receipt Anomaly Report (CUR).

STL Denver

Sample Receiving Checklist

Lot #: D2H160308 Date/Time Received: 8/16/02 0915

Company Name & Sampling Site: USGS / Cannon AFB

*Cooler #(s): 1

Temperatures (°C): 4.0°

PM to Complete This Section: *Yes* *No*

Residual chlorine check required: ☐ ☐

Time Zone:

• EDT/EST • CDT/CST • MDT/MST • PDT/PST • OTHER

25228

Unpacking & Labeling Check Points:

N/A	Yes	No		Initials
☐	☒	☐	1. Cooler seals intact. (N/A if hand delivered)	
	☒	☐	2. Chain of custody present.	
	☐	☒	3. Bottles broken and/or are leaking, comment if yes.	
	☐	☒	4. Multiphase samples present? If yes, comment below.	
			PHOTOGRAPH BROKEN BOTTLES/MULTIPHASE SAMPLES	
	☒	☐	5. Proper container & preservatives used (ref. Attachment D of SOP# DEN-QA-0003)	
☐	☒	☐	6. pH of all samples checked and meet requirements, note exceptions.	
	☒	☐	7. Chain of custody includes "received by" and "relinquished" by signatures, dates, and times.	
	☐	☒	8. Receipt date(s) > 48 hours past the collection date(s)? If yes, notify PA/PM.	
	☒	☐	9. Chain of custody agrees with bottle count, comment if no.	
	☒	☐	10. Chain of custody agrees with labels, comment if no.	
☐	☒	☐	11. VOA samples filled completely, comment if no.	
☐	☒	☐	12. VOA vials preserved, check label. Preservative ☒HCl ☐4±2°C ☐Sodium Thiosulfate	
	☐	☒	13. Did samples require preservation with sodium thiosulfate?	
☒	☐	☐	14. If yes to #12, did the samples contain residual chlorine?	
☒	☐	☐	15. Sediment present in dissolved/filtered bottles.	
	☐	☒	16. Are analyses with short holding times requested?	
	☐	☒	17. Was a quick Turn Around (TAT) requested?	
☒	☐	☐	18. Is extra sample volume provided for MS, MSD or matrix duplicates?	
			DOUBLECHECK METALS,SAMPLE LABELS & SUBCONTRACT	
☒	☐	☐	19. Subcontract COC signed and sent with samples to bottle prep?	
	☒	☐	20. Were sample labels double-checked by a second person?	SAB
☒	☐	☐	21. Were sample bottles and COC double checked for dissolved/filtered metals by a second person?	
☒	☐	☐	22. If applicable, were AFCEE Metals placed in the walkin refrigerator?	

Document any problems or discrepancies and the actions taken to resolve them on a Condition Upon Receipt Anomaly Report (CUR).

STL Denver

Sample Receiving Checklist

Lot #: D2H190144 Date/Time Received: 8-19-02 0830

Company Name & Sampling Site: USGS-Cannon

*Cooler #(s): 1

Temperatures (°C): 6.9

PM to Complete This Section: *Yes* *No*

Residual chlorine check required: ☐ ☐

Time Zone:

• EDT/EST • CDT/CST • MDT/MST • PDT/PST • OTHER

Unpacking & Labeling Check Points:

N/A	Yes	No		Initials
☐	☑	☐	1. Cooler seals intact. (N/A if hand delivered)	
	☑	☐	2. Chain of custody present.	
	☐	☑	3. Bottles broken and/or are leaking, comment if yes.	
	☐	☑	4. Multiphase samples present? If yes, comment below.	
			PHOTOGRAPH BROKEN BOTTLES/MULTIPHASE SAMPLES	
	☑	☐	5. Proper container & preservatives used (ref. Attachment D of SOP# DEN-QA-0003)	
☐	☑	☐	6. pH of all samples checked and meet requirements, note exceptions.	
	☑	☐	7. Chain of custody includes "received by" and "relinquished" by signatures, dates, and times.	
	☑	☐	8. Receipt date(s) > 48 hours past the collection date(s)? If yes, notify PA/PM.	
	☑	☐	9. Chain of custody agrees with bottle count, comment if no.	
	☑	☐	10. Chain of custody agrees with labels, comment if no.	
☐	☑	☐	11. VOA samples filled completely, comment if no.	
☐	☑	☐	12. VOA vials preserved, check label. Preservative ☑HCl ☑4±2°C ☐Sodium Thiosulfate	
	☐	☑	13. Did samples require preservation with sodium thiosulfate?	
☑	☐	☐	14. If yes to #12, did the samples contain residual chlorine?	
☑	☐	☐	15. Sediment present in dissolved/filtered bottles.	
	☐	☑	16. Are analyses with short holding times requested?	
	☐	☑	17. Was a quick Turn Around (TAT) requested?	
☐	☑	☐	18. Is extra sample volume provided for MS, MSD or matrix duplicates?	
			DOUBLECHECK METALS,SAMPLE LABELS & SUBCONTRACT	
☑	☐	☐	19. Subcontract COC signed and sent with samples to bottle prep?	
	☑	☐	20. Were sample labels double-checked by a second person?	
☑	☐	☐	21. Were sample bottles and COC double checked for dissolved/filtered metals by a second person?	
☑	☐	☐	22. If applicable, were AFCEE Metals placed in the walkin refrigerator?	

Document any problems or discrepancies and the actions taken to resolve them on a Condition Upon Receipt Anomaly Report (CUR).

COPY FOR YOUR INFORMATION

Laboratory Lot No: SDG: CANNON-1

CONTRACT LABORATORY DATA-REVIEW WORKSHEET

1.0 GENERAL INFORMATION

Laboratory Lot Number: SDG: CANNON-1

Data reviewer: Richard Daddow Review date: 10/3/02

District, Project, & Account #: New Mexico Cannon AFB - Drilling 4635-36006

Sample collection date: 8/13-16/02 Sample matrix/no.: water

No. of sample types in lot: Environmental 8 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: 9/23/02 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 ___ Electronic data files on CD? Yes X No ___

EDD file format: NWIS X STL standard ____ ERPIMS ____ DODEC ____

Comments—Data Reports SDG CANNON-1 includes lots: D2H140282 (invoice), D2H160308, and D2H190144

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 ___ No X

If **no**, list sample/lab IDs, and associated problems with when delivered at laboratory:

Two samples received at lab on 8/19/02 had temperature of 6.9°C - USGS client was notified about this elevated temperature (p. 2)

Laboratory Lot No: SOG: CANNON-1

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: SDG: CANNON-1

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:

9060 TOC (p.75)

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 1 analyte MS/MSD (p. 64)	associated MS lot # yes___	no X
9020B (TOX) MSD (p. 76)	associated MS lot # yes___	no X
	associated MS lot # yes___	no___
	associated MS lot # yes___	no___
	associated MS lot # yes___	no___
	associated MS lot # yes___	no___

No MS results reported for method(s):

5.4 Additional comments about QC results:

Laboratory Lot No: SDG: CANNON-1

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]*

____ Pesticides by GC--method 8081A *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*

____ 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]*

____ Metals by ICP--method 6010B/200.7 Dissolved_____ Total_____ *[W and S: analysis HT 180 days]*

____ Metals by ICP/MS--method 6020/200.8 Dissolved_____ Total_____ *[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]*

____ 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]*

____ Cyanide, total and amenable--methods 9010B or 9012A *[W and S: analysis HT 14 days]*

X Other analyses: 314 Perchlorate

APPENDIX III

Field Data

FIELD METHODS

Preperation for Purging and Sampling Cannon Air Force Base Landfill 5 wells.

- When arriving at each well the well cover is opened and screened for volatile compounds by using a HNU photoionization detector. Water levels are then measured using a Solinst electric tape. All information from arriving to leaving well site is recorded in a record book.
- 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, models 57 or 55.
- 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, QA/QC, 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

130-02

CAFB

0830 FRED GEBHARDT OF THE USGS NM DISTRICT ARRIVES AT WELL-D ON CAFB (LANDFILL 5). IRRIGATION PUMP JUST SOUTH IS RUNNING. WATER LEVEL 300.13

WILL FIRST CALIBRATE METERS.

- pH METER - MODEL 250 A+ S/N 014709
  CALIBRATION BUFFERS 4.01, 7.00, 10.01
  CALIBRATION READINGS 4.01, 7.00, 10.01 SLOPE 99.7

- CONDUCTANCE METER - ORION MODEL 130A S/N 1348654
  CALIBRATION STANDARDS 1027
  CALIBRATION READINGS 1026

- D.O. METER YSI 95, S/N 99A0237
  ALTITUDE 4500 FT.

TIME	VOL	TEMP	pH	COND	DO
0910	<0.5	18.7	7.41	575	4.55
0918	5.0	17.9	7.20	582	5.32
0924	10.0	18.2	7.22	579	5.42
0931	15.0	18.2	7.26	581	5.23
0937	20.0	18.2	7.30	582	4.82
0943	25.0	18.2	7.32	585	4.78
0948	30.0	18.3	7.33	585	4.74
0954	35.0	18.2	7.34	585	4.75

8-13-02 CAFB

WELL D CONT.

1000 COLLECTED ENVIRONMENTAL SAMPLE CAFB-D.

1010 ARRIVED AT WELL CAFB-C. WL 307.72

TIME	VOL	TEMP	pH	COND	D.O.
1015	<0.5	18.2	7.88	563	5.28
1021	5.0	18.4	7.55	605	3.31
1027	10.0	18.5	7.51	603	3.04
1032	15	18.6	7.50	605	2.80
1038	20	18.5	7.51	603	2.76
1045	25	18.5	7.51	600	2.72
1051	30	18.6	7.50	602	2.74
1057	35	18.5	7.50	601	2.71

1100 COLLECTED ENVIRONMENTAL SAMPLE - CAFB-C.

13-02 CAFB

1115 ARRIVED AT WELL CAFB-Q . WL 290.36.

TIME	VOL	TEMP	pH	COND	D.O.
1116	<0.5	18.3	8.12	7.65	7.02
1120	5.0	18.4	7.67	787	7.15
1124	10	18.6	7.58	787	7.40
1130	15	18.5	7.55	787	7.46
1135	20	18.5	7.54	786	7.43
1141	25	18.6	7.52	790	7.71
1147	30	18.5	7.53	779	7.76
1153	35	18.3	7.52	787	7.82

1200 COLLECTED ENVIRONMENTAL SAMPLE CAFB-Q

1215 COLLECTED TRIP BLANK CAFB-Q-TB

8-15-02 CAFB

0830 FRED GEBHARDT ARRIVES AT WELL CAFB-5 AT LANDFILL 5 ON CANNON AFB, NM.
IRRIGATION PUMP SW OF CAFB-5 IS STILL RUNNING

WATER LEVEL 301.75

CALIBRATION OF METERS
- pH METER ORION 250 A+ S/N 014709
  CALIBRATION BUFFERS 4.01, 7.00, 10.01
  CALIBRATION READINGS 4.01, 7.00, 10.04 SLOPE 99.9
- CONDUCTANCE STANDARD 1027
  CONDUCTANCE READING 1027
- D.O METER YSI 95, S/N 99A0237
  ALTITUDE 4500 FT.

TIME	VOL	TEMP	pH	COND	DO
0900	<0.5	19.0	7.01	777	4.05
0906	5.0	18.7	7.17	824	4.10
0912	10	18.8	7.30	819	4.56
0919	15	19.0	7.40	817	5.11
0925	20	18.9	7.45	810	5.22
0931	25	18.7	7.49	808	5.15
0937	30	18.8	7.48	803	5.23
0942	35	18.7	7.49	806	5.28
0948	40	18.8	7.48	805	5.34

0955 COLLECTED ENVIRONMENTAL SAMPLE CAFB-5

8-15-02 CAFB

1010 ARRIVED AT WELL CAFB-T. WL 299.86.

TIME	VOL	TEMP	pH	COND	DO
1020	<0.5	20.7	7.13	745	4.87
1025	5.0	19.6	7.28	774	5.12
1031	10	19.2	7.40	829	5.10
1037	15	19.2	7.44	826	5.09
1042	20	19.0	7.45	830	5.06
1048	25	19.0	7.46	840	5.04
1053	30	19.2	7.50	828	5.04
1058	35	19.0	7.49	828	5.02
1104	40	18.7	7.47	828	5.01

1110 COLLECTED ENVIRONMENTAL SAMPLE CAFB-T

1120 ARRIVE AT WELL CAFB-U. WL 298.90.

TIME	VOL	TEMP	pH	COND	DO
1123	<0.5	19.2	7.70	746	4.93
1128	5.0	18.9	7.80	764	5.95
1133	10.0	19.2	7.65	759	6.14
1139	15.0	19.2	7.62	759	6.39
1144	20	19.3	7.58	751	6.52
1150	25	19.1	7.60	760	6.54
1156	30	19.0	7.59	758	6.58
1201	35	19.1	7.58	760	6.69
1207	40	18.8	7.58	759	6.71

8-15-02 CAFB

CAFB-U CONT.

1210 COLLECTED ENVIRONMENTAL SAMPLE CAFB-U

1220 ARRIVED AT WELL CAFB-B

DOWN LOADED (SWITCHED MODULES) FROM CR-500 RECORDER MADE ADJUSTMENTS ON TRANSDUCER. WATER LEVEL FROM MP 300.30, WITH MP CORRECTION WATER FROM LAND SURFACE 297.78.

1430 DISCOVERED NO SUFACE FITTINGS ON PUMP SYSTEM. ALSO DISCOVER AIR INTAKE + AIR DISCHARE HOSES ARE MISSING. CAN'T EXPLAIN THE MISSING EQUIPMENT. POSSIBLE - HOSE SYSTEM SLIPPED FROM SURFACE CONNECTIONS.

WILL HEAD TO CLOVIS, NM TO PACK + SHIP SAMPLES COLLECTED.

WILL TRY TO PULL PUMP TOMORROW ~~MORNING~~ MORNING. TRY TO DISCOVED WHAT HAPPENED TO THE PUMP SYSTEM.

6-02 CAFB

0655 ~~AR~~ FRED GEBHARDT, USGS, WRD NM DISTRICT ARRIVES AT CAFB - WELL B.

0730 IT WAS DISCOVERED THAT THE UPPER FITTINGS (WELL HANGER) TO THE PUMP SYSTEM HAD COME LOOSE. THE SAFETY CABLE HELD, PREVENTING THE PUMP SYSTEM FROM FALLING TO BOTTOM OF WELL. REATTACHED THE SYSTEM. WILL CALIBRATE METERS AND THEN BEGIN PURGING WELL WATER.

CALIBRATION OF METERS

pH METER ORION A+ S/N 014709, BUFFERS 4.01, 7.00, 10.01
READINGS 4.01, 7.00, 10.04 SLOPE 99.9

20N 130A
1348659 CONDUCTANCE STANDARD 1027, READING 1030

- D.O. METER YSI 95, S/N 99A0237 ALTITUDE 4500 FT.

TIME	VOL	pH	COND	DO	TEMP
0740	0.5	6.79	732	5.02	19.4
0746	5.00	7.31	766	5.44	18.6
0752	10	7.31	770	5.53	18.5
0758	15	7.27	772	5.68	18.5
0803	20	7.31	767	5.90	18.7
0809	25	7.37	768	6.09	18.6
0815	30	7.44	766	6.12	18.7
0820	35	7.42	767	6.16	18.6
26	40	7.43	766	6.20	18.6

0830 COLLECTED ENVIRONMENTAL SAMPLE CAFB-B

0900 COLLECTED DUPLICATE SAMPLE CAFB-BB