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Scientific Notebook No. 830: Cation and Anion Analyses of Solutions from Sorption Experiments 19 and 22 CAL Series 1, Continuation from Scientific Notebook No. 812 (10/13/2006 through 12/21/2006)

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BRADLEY WERLING (210) 522-6565

RTIN SZ 20.06002.01.242
UZ 20.06002.01.232

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continued from 812

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INVESTIGATOR	SIGNATURE	INITIALS
BRADLEY WERLING	Bradley Werling	BAW

1-8-07 BW

This notebook contains work for Radionuclide Transport (RT) in both the saturated zone and unsaturated zone. RT is concerned with identification of key geochemical processes that may control radionuclide transport at Yucca Mountain. Radionuclide retardation is dependent on the hydrochemistry and mineralogy along the groundwater flow paths from the proposed repository. Typical activities associated with these investigations would include conducting laboratory batch sorption experiments, collecting field samples, and analyses of field samples.

Current experimental activities are focused on laboratory batch sorption experiments that incorporate materials (groundwater and/or sonic corings) from the Yucca Mountain region and materials (simulated groundwater) based on the chemistry of the Yucca Mountain region materials. The objective for a sorption experiment is to determine the sorption capability (Kd or sorption coefficient) for a particular radionuclide, solid material, and solution typically over a range of pH values. Tasks may include the following:

- Preparation of reference solutions.
- Cation (Div 01), anion (Div 01), inorganic carbon (CNWRA) and pH analyses (CNWRA) of reference and experimental solutions.
- Preparation of experimental solutions
- Liquid Scintillation Analyses (CNWRA) of experimental solutions.

Further details of these tasks are recorded in initial and in-process entries.

This scientific notebook (SN) is a continuation of SN 812. The end of SN 812 contains the Div 01 cation analyses of solutions from sorption experiments 19 & 22 CAL series 2. SN 830 begins with a continuation of these results.

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Continuation of Div 01 Cation Results for 19+22 CAL Series 2 Experimental Solutions from SN 812 (812/122)

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SOUTHWEST RESEARCH INSTITUTE

SAMPLE ANALYSIS DATA SHEET

Sample ID
22C2-2C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284183

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-15

Method: ICP - 6010B / ICPMS - 6020		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	1.08	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.479	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.100	0.1
Boron	<0.250	0.25
Cadmium	<0.0500	0.05
Calcium	1.34	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.150	0.15
Magnesium	<0.500	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.100	0.1
Phosphorus	0.388	0.2
Potassium	1.95	0.025
Selenium	<0.0500	0.05
Silicon	16.5	0.2
Silver	<0.0500	0.05
Sodium	83.8	2.5
Strontium	<0.0500	0.05
Sulfur	9.11	0.2
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.100	0.1
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	0.0913	0.05
Zirconium	<0.0500	0.05

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SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22C2-3C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284184

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-15

Method: ICP - 6010B / ICPMS - 6020		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	0.594	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.540	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.100	0.1
Boron	<0.250	0.25
Cadmium	<0.0500	0.05
Calcium	1.16	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.150	0.15
Magnesium	<0.500	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.100	0.1
Phosphorus	0.415	0.2
Potassium	1.81	0.025
Selenium	<0.0500	0.05
Silicon	15.1	0.2
Silver	<0.0500	0.05
Sodium	82.2	2.5
Strontium	<0.0500	0.05
Sulfur	9.10	0.2
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.100	0.1
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	0.0986	0.05
Zirconium	<0.0500	0.05

13 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22C2-4C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284185

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-15

Method: ICP - 6010B / ICPMS - 6020		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	1.75	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.467	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.100	0.1
Boron	<0.250	0.25
Cadmium	<0.0500	0.05
Calcium	1.23	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	0.661	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.150	0.15
Magnesium	0.617	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.100	0.1
Phosphorus	0.280	0.2
Potassium	1.84	0.025
Selenium	<0.0500	0.05
Silicon	18.3	0.2
Silver	<0.0500	0.05
Sodium	83.3	2.5
Strontium	<0.0500	0.05
Sulfur	9.00	0.2
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.100	0.1
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	0.0892	0.05
Zirconium	<0.0500	0.05

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SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22C2-5C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284186

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-15

Method: ICP - 6010B / ICPMS - 6020		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	1.60	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.484	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.100	0.1
Boron	<0.250	0.25
Cadmium	<0.0500	0.05
Calcium	1.24	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	0.556	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.150	0.15
Magnesium	0.565	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.100	0.1
Phosphorus	0.277	0.2
Potassium	2.11	0.025
Selenium	<0.0500	0.05
Silicon	17.8	0.2
Silver	<0.0500	0.05
Sodium	84.1	2.5
Strontium	<0.0500	0.05
Sulfur	8.44	0.2
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.100	0.1
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	0.109	0.05
Zirconium	<0.0500	0.05

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SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22C2-6C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284187

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-15

Method: ICP - 6010B / ICPMS - 6020		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	2.05	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.473	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.100	0.1
Boron	<0.250	0.25
Cadmium	<0.0500	0.05
Calcium	1.17	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	0.755	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.150	0.15
Magnesium	0.674	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.100	0.1
Phosphorus	0.250	0.2
Potassium	2.00	0.025
Selenium	<0.0500	0.05
Silicon	19.0	0.2
Silver	<0.0500	0.05
Sodium	82.2	2.5
Strontium	<0.0500	0.05
Sulfur	8.84	0.2
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.100	0.1
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	0.0974	0.05
Zirconium	<0.0500	0.05

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SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
22C2-7C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284188

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-15

Method: ICP - 6010B / ICPMS - 6020		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	2.95	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.471	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.100	0.1
Boron	<0.250	0.25
Cadmium	<0.0500	0.05
Calcium	1.20	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	0.935	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.150	0.15
Magnesium	0.869	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.100	0.1
Phosphorus	<0.200	0.2
Potassium	2.11	0.025
Selenium	<0.0500	0.05
Silicon	21.7	0.2
Silver	<0.0500	0.05
Sodium	80.9	2.5
Strontium	<0.0500	0.05
Sulfur	9.18	0.2
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.100	0.1
Titanium	0.0630	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	0.111	0.05
Zirconium	<0.0500	0.05

13OCT06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
22C2-8C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284189

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-15

Method: ICP - 6010B / ICPMS - 6020		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	1.37	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.531	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.100	0.1
Boron	<0.250	0.25
Cadmium	<0.0500	0.05
Calcium	1.04	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.150	0.15
Magnesium	<0.500	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.100	0.1
Phosphorus	<0.200	0.2
Potassium	1.90	0.025
Selenium	<0.0500	0.05
Silicon	17.2	0.2
Silver	<0.0500	0.05
Sodium	80.1	2.5
Strontium	<0.0500	0.05
Sulfur	9.06	0.2
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.100	0.1
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	0.0987	0.05
Zirconium	<0.0500	0.05

13 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
22C2-9C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284190

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-15

Method: ICP - 6010B / ICPMS - 6020		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	2.24	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.497	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.100	0.1
Boron	<0.250	0.25
Cadmium	<0.0500	0.05
Calcium	1.02	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	0.587	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.150	0.15
Magnesium	0.695	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.100	0.1
Phosphorus	<0.200	0.2
Potassium	2.04	0.025
Selenium	<0.0500	0.05
Silicon	19.6	0.2
Silver	<0.0500	0.05
Sodium	82.4	2.5
Strontium	<0.0500	0.05
Sulfur	8.70	0.2
Thallium	0.1	0.1
Thorium	<0.200	0.2
Tin	<0.100	0.1
Titanium	<0.0506	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	0.0963	0.05
Zirconium	<0.0500	0.05

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SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
22C2-10C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284178

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-15

Method: ICP - 6010B / ICPMS - 6020		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	2.20	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.470	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.100	0.1
Boron	<0.250	0.25
Cadmium	<0.0500	0.05
Calcium	1.07	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	0.718	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.150	0.15
Magnesium	0.731	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.100	0.1
Phosphorus	<0.200	0.2
Potassium	1.99	0.025
Selenium	<0.0500	0.05
Silicon	19.6	0.2
Silver	<0.0500	0.05
Sodium	81.6	2.5
Strontium	<0.0500	0.05
Sulfur	9.18	0.2
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.100	0.1
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	0.0853	0.05
Zirconium	<0.0500	0.05

13OCT06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
22C2-11C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284179

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-15

Method: ICP - 6010B / ICPMS - 6020		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	3.22	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.446	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.100	0.1
Boron	<0.250	0.25
Cadmium	<0.0500	0.05
Calcium	1.08	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	1.32	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.150	0.15
Magnesium	0.905	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.100	0.1
Phosphorus	<0.200	0.2
Potassium	2.19	0.025
Selenium	<0.0500	0.05
Silicon	22.5	0.2
Silver	<0.0500	0.05
Sodium	81.0	2.5
Strontium	<0.0500	0.05
Sulfur	9.19	0.2
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.100	0.1
Titanium	0.0726	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	0.0744	0.05
Zirconium	<0.0500	0.05

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SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
22C2-12C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284180

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-15

Method: ICP - 6010B / ICPMS - 6020		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	2.19	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.639	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.100	0.1
Boron	0.384	0.25
Cadmium	<0.0500	0.05
Calcium	1.23	0.5
Chromium	<0.0500	0.05
Cobalt	<0.05	0.05
Copper	<0.0500	0.05
Iron	0.651	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.150	0.15
Magnesium	0.689	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.100	0.1
Phosphorus	<0.200	0.2
Potassium	2.41	0.025
Selenium	<0.0500	0.05
Silicon	20.9	0.2
Silver	<0.0500	0.05
Sodium	116	2.5
Strontium	<0.0500	0.05
Sulfur	9.10	0.2
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.100	0.1
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	0.0772	0.05
Zirconium	<0.0500	0.05

13 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
19C2-13C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284156

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-14

Method: ICP - 6010B / ICPMS - 6020		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0:500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	<0.0500	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.100	0.1
Boron	<0.250	0.25
Cadmium	<0.0500	0.05
Calcium	20.7	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	19.7	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.150	0.15
Magnesium	19.2	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.100	0.1
Phosphorus	<0.200	0.2
Potassium	19.8	0.25
Selenium	<0.0500	0.05
Silicon	<0.200	0.2
Silver	<0.0500	0.05
Sodium	19.4	2.5
Strontium	<0.0500	0.05
Sulfur	<0.200	0.2
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.100	0.1
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

13 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
22C2-13C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284181

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-15

Method: ICP - 6010B / ICPMS - 6020		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	<0.0500	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.100	0.1
Boron	<0.250	0.25
Cadmium	<0.0500	0.05
Calcium	19.5	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	19.2	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.150	0.15
Magnesium	18.9	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.100	0.1
Phosphorus	<0.200	0.2
Potassium	18.2	0.1
Selenium	<0.0500	0.05
Silicon	<0.200	0.2
Silver	<0.0500	0.05
Sodium	19.9	2.5
Strontium	<0.0500	0.05
Sulfur	<0.200	0.2
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.100	0.1
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

13 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE

DUPLICATE SUMMARY

Sample ID: 19CW2-5C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284173D

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-15

Method: ICP - 6010B / ICPMS - 6020			
Analysis	Orig. Sample Result (mg/L)	Duplicate Result (mg/L)	RPD
Aluminum	<0.500	<0.500	0.00%
Antimony	<0.100	<0.100	0.00%
Arsenic	<0.100	<0.100	0.00%
Barium	0.542	0.540	0.37%
Beryllium	<0.0500	<0.0500	0.00%
Bismuth	<0.100	<0.100	0.00%
Boron	<0.250	<0.250	0.00%
Cadmium	<0.0500	<0.0500	0.00%
Calcium	13.0	12.9	0.77%
Chromium	<0.0500	<0.0500	0.00%
Cobalt	<0.0500	<0.0500	0.00%
Copper	<0.0500	<0.0500	0.00%
Iron	<0.500	<0.500	0.00%
Lanthanum	<0.0500	<0.0500	0.00%
Lead	<0.0500	<0.0500	0.00%
Lithium	<0.150	<0.150	0.00%
Magnesium	1.34	1.33	0.75%
Manganese	0.0588	0.0579	1.54%
Molybdenum	<0.0500	<0.0500	0.00%
Nickel	<0.0500	<0.0500	0.00%
Palladium	<0.100	<0.100	0.00%
Phosphorus	0.397	0.380	4.38%
Potassium	3.88	3.96	2.04%
Selenium	<0.0500	<0.0500	0.00%
Silicon	15.8	15.7	0.63%
Silver	<0.0500	<0.0500	0.00%
Sodium	58.1	57.4	1.21%
Strontium	<0.0500	<0.0500	0.00%
Sulfur	9.21	9.28	0.76%
Thallium	<0.100	<0.100	0.00%
Thorium	<0.200	<0.200	0.00%
Tin	<0.100	<0.100	0.00%
Titanium	<0.0500	<0.0500	0.00%
Tungsten	<0.100	<0.100	0.00%
Uranium	<1.00	<1.00	0.00%
Vanadium	<0.0500	<0.0500	0.00%
Yttrium	<0.0500	<0.0500	0.00%
Zinc	0.270	0.267	1.12%
Zirconium	<0.0500	<0.0500	0.00%

13 OCT CONT BAW

SOUTHWEST RESEARCH INSTITUTE

DUPLICATE SUMMARY

Sample ID: 19C2-10C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284153D

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-14

Method: ICP - 6010B / ICPMS - 6020			
Analysis	Orig. Sample Result (mg/L)	Duplicate Result (mg/L)	RPD
Aluminum	6.37	6.40	0.47%
Antimony	<0.100	<0.100	0.00%
Arsenic	<0.100	<0.100	0.00%
Barium	0.546	0.549	0.55%
Beryllium	<0.0500	<0.0500	0.00%
Bismuth	<0.100	<0.100	0.00%
Boron	<0.250	<0.250	0.00%
Cadmium	<0.0500	<0.0500	0.00%
Calcium	1.17	1.17	0.00%
Chromium	<0.0500	<0.0500	0.00%
Cobalt	<0.0500	<0.0500	0.00%
Copper	<0.0500	<0.0500	0.00%
Iron	2.52	2.49	1.20%
Lanthanum	<0.0500	<0.0500	0.00%
Lead	<0.0500	<0.0500	0.00%
Lithium	<0.150	<0.150	0.00%
Magnesium	2.06	1.98	3.96%
Manganese	<0.0500	<0.0500	0.00%
Molybdenum	<0.0500	<0.0500	0.00%
Nickel	<0.0500	<0.0500	0.00%
Palladium	<0.100	<0.100	0.00%
Phosphorus	<0.200	<0.200	0.00%
Potassium	1.96	1.91	2.58%
Selenium	<0.0500	<0.0500	0.00%
Silicon	33.1	33.2	0.30%
Silver	<0.0500	<0.0500	0.00%
Sodium	85.2	88.2	3.46%
Strontium	<0.0500	<0.0500	0.00%
Sulfur	9.04	9.19	1.65%
Thallium	<0.100	<0.100	0.00%
Thorium	<0.200	<0.200	0.00%
Tin	<0.100	<0.100	0.00%
Titanium	0.134	0.137	2.21%
Tungsten	<0.100	<0.100	0.00%
Uranium	<1.00	<1.00	0.00%
Vanadium	<0.0500	<0.0500	0.00%
Yttrium	<0.0500	<0.0500	0.00%
Zinc	0.0763	0.0731	4.28%
Zirconium	<0.0500	<0.0500	0.00%

13 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE

DUPLICATE SUMMARY

Sample ID: 22CW2-12C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284193D

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-16

Method: ICP - 6010B / ICPMS - 6020			
Analysis	Orig. Sample Result (mg/L)	Duplicate Result (mg/L)	RPD
Aluminum	<0.500	<0.500	0.00%
Antimony	<0.100	<0.100	0.00%
Arsenic	<0.100	<0.100	0.00%
Barium	0.504	0.502	0.72%
Beryllium	<0.0500	<0.0500	0.00%
Bismuth	<0.100	<0.100	0.00%
Boron	0.298	0.284	8.05%
Cadmium	<0.0500	<0.0500	0.00%
Calcium	3.55	3.53	1.08%
Chromium	<0.0500	<0.0500	0.00%
Cobalt	<0.0500	<0.0500	0.00%
Copper	<0.0500	<0.0500	0.00%
Iron	<0.500	<0.500	0.00%
Lanthanum	<0.0500	<0.0500	0.00%
Lead	<0.0500	<0.0500	0.00%
Lithium	<0.150	<0.150	0.00%
Magnesium	0.659	0.618	11.57%
Manganese	<0.0500	<0.0500	0.00%
Molybdenum	<0.0500	<0.0500	0.00%
Nickel	<0.0500	<0.0500	0.00%
Palladium	<0.100	<0.100	0.00%
Phosphorus	<0.200	<0.200	0.00%
Potassium	4.23	4.38	6.93%
Selenium	<0.0500	<0.0500	0.00%
Silicon	14.6	14.7	1.36%
Silver	<0.0500	<0.0500	0.00%
Sodium	86.1	85.2	2.09%
Strontium	<0.0500	<0.0500	0.00%
Sulfur	9.21	9.09	2.59%
Thallium	<0.100	<0.100	0.00%
Thorium	<0.200	<0.200	0.00%
Tin	<0.100	<0.100	0.00%
Titanium	<0.0500	<0.0500	0.00%
Tungsten	<0.100	<0.100	0.00%
Uranium	<1.00	<1.00	0.00%
Vanadium	<0.0500	<0.0500	0.00%
Yttrium	<0.0500	<0.0500	0.00%
Zinc	<0.0500	<0.0500	0.00%
Zirconium	<0.0500	<0.0500	0.00%

10-13-06 BW

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SOUTHWEST RESEARCH INSTITUTE

MATRIX SPIKE SUMMARY

Sample ID: 19CW2-6C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284174S

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-15

Method: ICP - 6010B / ICPMS - 6020				
Analysis	Orig. Sample Result (mg/L)	Spike Result (mg/L)	Spike Added (mg/L)	Recovery
Aluminum	<0.500	19.3	20.0	96.5%
Antimony	<0.100	4.96	5.00	99.2%
Arsenic	<0.100	20.0	20.0	100.0%
Barium	0.532	20.5	20.0	99.8%
Beryllium	<0.0500	0.483	0.500	96.6%
Bismuth	NA	NA	NA	NA
Boron	NA	NA	NA	NA
Cadmium	<0.0500	0.489	0.500	97.8%
Calcium	12.2	212	200	99.9%
Chromium	<0.0500	1.90	2.00	95.0%
Cobalt	<0.0500	4.93	5.00	98.6%
Copper	<0.0500	2.45	2.50	98.0%
Iron	<0.500	11.2	10.0	112.0%
Lanthanum	NA	NA	NA	NA
Lead	<0.0500	4.79	5.00	95.8%
Lithium	<0.150	39.0	40.0	97.5%
Magnesium	1.28	201	200	99.9%
Manganese	<0.0500	4.99	5.00	99.8%
Molybdenum	NA	NA	NA	NA
Nickel	<0.0500	4.80	5.00	96.0%
Palladium	NA	NA	NA	NA
Phosphorus	NA	NA	NA	NA
Potassium	3.92	5.60	2.00	84.0%
Selenium	<0.0500	20.4	20.0	102.0%
Silicon	NA	NA	NA	NA
Silver	<0.0500	0.493	0.500	98.6%
Sodium	58.1	257	200	99.5%
Strontium	NA	NA	NA	NA
Sulfur	NA	NA	NA	NA
Thallium	<0.100	20.4	20.0	102.0%
Thorium	NA	NA	NA	NA
Tin	NA	NA	NA	NA
Titanium	NA	NA	NA	NA
Tungsten	NA	NA	NA	NA
Uranium	NA	NA	NA	NA
Vanadium	<0.0500	4.81	5.00	96.2%
Yttrium	NA	NA	NA	NA
Zinc	0.256	5.14	5.00	97.7%
Zirconium	NA	NA	NA	NA

NA- Not Applicable.

13OCT06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE

MATRIX SPIKE SUMMARY

Sample ID
19C2-11C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284154S

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-14

Method: ICP - 6010B / ICPMS - 6020				
Analysis	Orig. Sample Result (mg/L)	Spike Result (mg/L)	Spike Added (mg/L)	Recovery
Aluminum	8.22	28.0	20.0	98.9%
Antimony	<0.100	4.91	5.00	98.2%
Arsenic	<0.100	20.1	20.0	100.5%
Barium	0.554	20.2	20.0	98.2%
Beryllium	<0.0500	0.492	0.500	98.4%
Bismuth	NA	NA	NA	NA
Boron	NA	NA	NA	NA
Cadmium	<0.0500	0.491	0.500	98.2%
Calcium	1.33	204	200	101.3%
Chromium	<0.0500	1.93	2.00	96.5%
Cobalt	<0.0500	4.97	5.00	99.4%
Copper	<0.0500	2.44	2.50	97.6%
Iron	3.13	13.0	10.0	98.7%
Lanthanum	NA	NA	NA	NA
Lead	<0.0500	4.82	5.00	96.4%
Lithium	<0.150	39.7	40.0	99.3%
Magnesium	2.55	205	200	101.2%
Manganese	<0.0500	5.01	5.00	100.2%
Molybdenum	NA	NA	NA	NA
Nickel	<0.0500	4.85	5.00	97.0%
Palladium	NA	NA	NA	NA
Phosphorus	NA	NA	NA	NA
Potassium	1.90	2.33	0.500	86.0%
Selenium	<0.0500	20.6	20.0	103.0%
Silicon	NA	NA	NA	NA
Silver	<0.0500	0.490	0.500	98.0%
Sodium	85.5	287	200	100.8%
Strontium	NA	NA	NA	NA
Sulfur	NA	NA	NA	NA
Thallium	<0.100	20.4	20.0	102.0%
Thorium	NA	NA	NA	NA
Tin	NA	NA	NA	NA
Titanium	NA	NA	NA	NA
Tungsten	NA	NA	NA	NA
Uranium	NA	NA	NA	NA
Vanadium	<0.0500	4.82	5.00	96.4%
Yttrium	NA	NA	NA	NA
Zinc	0.0733	5.07	5.00	99.9%
Zirconium	NA	NA	NA	NA

NA- Not Applicable.

13 CONT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE

MATRIX SPIKE SUMMARY

Sample ID
22CW2-1C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284194S

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-16

Method: ICP - 6010B / ICPMS - 6020				
Analysis	Orig. Sample Result (mg/L)	Spike Result (mg/L)	Spike Added (mg/L)	Recovery
Aluminum	1.07	21.1	20.00	100.2%
Antimony	<0.100	5.01	5.00	100.2%
Arsenic	<0.100	20.1	20.0	100.5%
Barium	0.633	20.3	20.0	98.3%
Beryllium	<0.0500	0.495	0.500	99.0%
Bismuth	NA	NA	NA	NA
Boron	NA	NA	NA	NA
Cadmium	<0.0500	0.495	0.500	99.0%
Calcium	16.0	217	200	100.5%
Chromium	<0.0500	1.96	2.00	98.0%
Cobalt	<0.0500	5.02	5.00	100.4%
Copper	<0.0500	2.47	2.50	98.8%
Iron	NA	NA	NA	NA
Lanthanum	NA	NA	NA	NA
Lead	<0.0500	4.89	5.00	97.8%
Lithium	<0.150	40.1	40.0	100.3%
Magnesium	2.43	203	200	100.3%
Manganese	0.134	5.13	5.00	99.9%
Molybdenum	NA	NA	NA	NA
Nickel	<0.0500	4.91	5.00	98.2%
Palladium	NA	NA	NA	NA
Phosphorus	NA	NA	NA	NA
Potassium	5.69	7.38	2.00	84.5%
Selenium	<0.0500	21.0	20.0	105.0%
Silicon	NA	NA	NA	NA
Silver	<0.0500	0.495	0.500	99.0%
Sodium	56.7	256	200	99.7%
Strontium	NA	NA	NA	NA
Sulfur	NA	NA	NA	NA
Thallium	<0.100	20.5	20.0	102.5%
Thorium	NA	NA	NA	NA
Tin	NA	NA	NA	NA
Titanium	NA	NA	NA	NA
Tungsten	NA	NA	NA	NA
Uranium	NA	NA	NA	NA
Vanadium	<0.0500	4.88	5.00	97.6%
Yttrium	NA	NA	NA	NA
Zinc	0.350	5.23	5.00	97.6%
Zirconium	NA	NA	NA	NA

NA- Not Applicable.

13 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
LABORATORY CONTROL SAMPLE

Sample ID
LCS

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-14

Method: ICP - 6010B / ICPMS - 6020			
Analysis	Sample Result (mg/L)	True Value (mg/L)	Recovery
Aluminum	19.2	20.0	96.0%
Antimony	4.87	5.00	97.4%
Arsenic	19.9	20.0	99.5%
Barium	19.5	20.0	97.5%
Beryllium	0.488	0.500	97.6%
Bismuth	NA	NA	NA
Boron	NA	NA	NA
Cadmium	0.492	0.500	98.4%
Calcium	203	200	101.5%
Chromium	1.93	2.00	96.5%
Cobalt	4.95	5.00	99.0%
Copper	2.42	2.50	96.8%
Iron	10.0	10.0	100.0%
Lanthanum	NA	NA	NA
Lead	4.79	5.00	95.8%
Lithium	40.1	40.0	100.3%
Magnesium	202	200	101.0%
Manganese	4.94	5.00	98.8%
Molybdenum	NA	NA	NA
Nickel	4.85	5.00	97.0%
Palladium	NA	NA	NA
Phosphorus	NA	NA	NA
Potassium	0.0189	0.0200	94.5%
Selenium	20.4	20.0	102.0%
Silicon	NA	NA	NA
Silver	0.484	0.500	96.8%
Sodium	203	200	101.5%
Strontium	NA	NA	NA
Sulfur	NA	NA	NA
Thallium	20.4	20.0	102.0%
Thorium	NA	NA	NA
Tin	NA	NA	NA
Titanium	NA	NA	NA
Tungsten	NA	NA	NA
Uranium	NA	NA	NA
Vanadium	4.80	5.00	96.0%
Yttrium	NA	NA	NA
Zinc	5.00	5.00	100.0%
Zirconium	NA	NA	NA

13 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
LABORATORY CONTROL SAMPLE

Sample ID
LCS

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-16

Method: ICP - 6010B / ICPMS - 6020			
Analysis	Sample Result (mg/L)	True Value (mg/L)	Recovery
Aluminum	19.5	20.0	97.5%
Antimony	4.92	5.00	98.4%
Arsenic	20.0	20.0	100.0%
Barium	19.6	20.0	98.0%
Beryllium	0.492	0.500	98.4%
Bismuth	NA	NA	NA
Boron	NA	NA	NA
Cadmium	0.495	0.500	99.0%
Calcium	201	200	100.5%
Chromium	1.94	2.00	97.0%
Cobalt	4.99	5.00	99.8%
Copper	2.45	2.50	98.0%
Iron	9.80	10.00	98.0%
Lanthanum	NA	NA	NA
Lead	4.82	5.00	96.4%
Lithium	40.0	40.0	100.0%
Magnesium	200	200	100.0%
Manganese	4.97	5.00	99.4%
Molybdenum	NA	NA	NA
Nickel	4.87	5.00	97.4%
Palladium	NA	NA	NA
Phosphorus	NA	NA	NA
Potassium	0.0197	0.0200	98.5%
Selenium	20.7	20.0	103.5%
Silicon	NA	NA	NA
Silver	0.502	0.500	100.4%
Sodium	202	200	101.0%
Strontium	NA	NA	NA
Sulfur	NA	NA	NA
Thallium	20.5	20.0	102.5%
Thorium	NA	NA	NA
Tin	NA	NA	NA
Titanium	NA	NA	NA
Tungsten	NA	NA	NA
Uranium	NA	NA	NA
Vanadium	4.84	5.00	96.8%
Yttrium	NA	NA	NA
Zinc	4.91	5.00	98.2%
Zirconium	NA	NA	NA

13 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
LABORATORY CONTROL SAMPLE

Sample ID
LCS

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-15

Method: ICP - 6010B / ICPMS - 6020			
Analysis	Sample Result (mg/L)	True Value (mg/L)	Recovery
Aluminum	19.2	20.0	96.0%
Antimony	4.94	5.00	98.8%
Arsenic	20.0	20.0	100.0%
Barium	19.9	20.0	99.5%
Beryllium	0.483	0.500	96.6%
Bismuth	NA	NA	NA
Boron	NA	NA	NA
Cadmium	0.488	0.500	97.6%
Calcium	201	200	100.5%
Chromium	1.91	2.00	95.5%
Cobalt	4.93	5.00	98.6%
Copper	2.46	2.5	98.4%
Iron	11.0	10.0	110.0%
Lanthanum	NA	NA	NA
Lead	4.83	5.00	96.6%
Lithium	39.3	40.0	98.3%
Magnesium	200	200	100.0%
Manganese	4.96	5.00	99.2%
Molybdenum	NA	NA	NA
Nickel	4.87	5.00	97.4%
Palladium	NA	NA	NA
Phosphorus	NA	NA	NA
Potassium	0.0191	0.020	95.5%
Selenium	20.4	20.0	102.0%
Silicon	NA	NA	NA
Silver	0.495	0.500	99.0%
Sodium	201	200	100.5%
Strontium	NA	NA	NA
Sulfur	NA	NA	NA
Thallium	20.5	20.0	102.5%
Thorium	NA	NA	NA
Tin	NA	NA	NA
Titanium	NA	NA	NA
Tungsten	NA	NA	NA
Uranium	NA	NA	NA
Vanadium	4.83	5.00	96.6%
Yttrium	NA	NA	NA
Zinc	4.91	5.000	98.2%
Zirconium	NA	NA	NA

NA- Not Applicable.

13 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
BLANK SUMMARY

Sample ID
PBW - G07H2

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-14

Method: ICP - 6010B / ICPMS - 6020		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	<0.0500	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.1	0.1
Boron	<0.250	0.25
Cadmium	<0.0500	0.05
Calcium	<0.500	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.150	0.15
Magnesium	<0.500	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.100	0.1
Phosphorus	<0.200	0.2
Potassium	<0.000500	0.0005
Selenium	<0.0500	0.05
Silicon	<0.200	0.2
Silver	<0.0500	0.05
Sodium	<2.50	2.5
Strontium	<0.0500	0.05
Sulfur	<0.200	0.2
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.100	0.1
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

13 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
BLANK SUMMARY

Sample ID
PBW - G07H2

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-16

Method: ICP - 6010B / ICPMS - 6020		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	<0.0500	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.100	0.1
Boron	<0.250	0.25
Cadmium	<0.0500	0.05
Calcium	<0.500	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.150	0.15
Magnesium	<0.500	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.100	0.1
Phosphorus	<0.200	0.2
Potassium	<0.000500	0.0005
Selenium	<0.0500	0.05
Silicon	<0.200	0.2
Silver	<0.0500	0.05
Sodium	<2.50	2.5
Strontium	<0.0500	0.05
Sulfur	<0.200	0.2
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.100	0.1
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

13 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
BLANK SUMMARY

Sample ID
PBW - G07H2

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.242

SRR: 29583

Task Order: 060801-15

Method: ICP - 6010B / ICPMS - 6020		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.5	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	<0.0500	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.100	0.1
Boron	<0.250	0.25
Cadmium	<0.0500	0.05
Calcium	<0.500	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.150	0.15
Magnesium	<0.500	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.100	0.1
Phosphorus	<0.200	0.2
Potassium	<0.000500	0.0005
Selenium	<0.0500	0.05
Silicon	<0.200	0.2
Silver	<0.0500	0.05
Sodium	<2.50	2.5
Strontium	<0.0500	0.05
Sulfur	<0.200	0.2
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.100	0.1
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

NA- Not Applicable.

13 OCT 06 CONT BAW

Table Comparing Cation Target and Div 01 Results
for Blind QA Standard Cation QA Std - NpCS from SN 811/27 (19C2-13C)

Species	Target Conc (~~g~~ mg/mL)	Div 01 Conc 12-21-06 BW (mg/L)	Percent Recovery
Potassium	20	19.8	99.0
Calcium	20	20.7	104
Sodium	20	19.4	97.0
Magnesium	20	19.2	96.0
Iron	20	19.7	98.5

Source for target conc: 811/27 (see 811/31 for reference)
Iron is sometimes not included in the target values because Fe is not on our typical cation analyses short list
Source for Div 01 results: 830/14

Table Comparing Cation Target and Div 01 Results
for Blind QA Standard Cation QA Std - NpCS from SN 811/27 (22C2-13C)

Species	Target Conc (~~g~~ mg/mL)	Div 01 Conc 12-21-06 BW (mg/L)	Percent Recovery
Potassium	20	18.2	91.0
Calcium	20	19.5	97.5
Sodium	20	19.9	100
Magnesium	20	18.9	94.5
Iron	20	19.2	96.0

Source for target conc: 811/27 (see 811/31 for reference)
Iron is sometimes not included in the target values because Fe is not on our typical cation analyses short list
Source for Div 01 results: 830/15

Table Comparing Cation Div 01 Results of Duplicate
Blind Standards 19C2-13C and 22C2-13C

Species	19C2-13C Conc (mg/L)	22C2-13C Conc (mg/L)	Percent Difference
Potassium	19.8	18.2	-8.08
Calcium	20.7	19.5	-5.80
Sodium	19.4	19.9	2.58
Magnesium	19.2	18.9	-1.56
Iron	19.7	19.2	-2.54

Source for Div 01 results: 830/14-15

24 OCT 06 BAW

Div01 Anion Results for 19+22 CAL
Series 2 Experimental Solutions

Initial Entry for Sorption Experiment: 811/2-3

Samples: Total of 50 anion
48 Experimental solns (4 types of 12 each)
- Solid using 19PB sonic core composite
- Solid using 19PB sonic core composite w/o calcite
- Solid using 22PC sonic core composite
- Solid using 22PC sonic core composite w/o calcite
Two QA solns for anions (duplicates)

Note: No reference soln was analyzed with this set. Ref soln 19PB-3 was used for this series (811/2) and previously analyzed (812/39 also 812/47).

Sample collection: Exp soln + QA on 811/28-29
Note: Cation samples were not diluted but anion samples were diluted.
Sample masses for dilution factors: 811/32-33

Sample ID legends: Exp Soln + QA on 811/30-31

QA target conc: 811/27

Delivery + Chain of Custody: 811/34, 40-44

Following the raw data are: Dilution Factor calcs
QA data + recoveries
BW 10/24/06 ~~Reorganized Div01 results~~
Anion conc in EXP soln calcs.
Summary of Div01 Exp solns

25 OCT 06 BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19CW2-1A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284119

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.79	0.1
Fluoride	0.341	0.1
Nitrate-N	10.1	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	0.133	0.1
Sulfate	6.84	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19CW2-2A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284120

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.75	0.1
Fluoride	0.334	0.1
Nitrate-N	9.73	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	0.107	0.1
Sulfate	6.79	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19CW2-3A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284121

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.68	0.1
Fluoride	0.336	0.1
Nitrate-N	9.62	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	0.118	0.1
Sulfate	6.89	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19CW2-4A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284122

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.73	0.1
Fluoride	0.321	0.1
Nitrate-N	9.37	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.91	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19CW2-5A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284123

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.74	0.1
Fluoride	0.317	0.1
Nitrate-N	9.14	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.83	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19CW2-6A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284124

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.82	0.1
Fluoride	0.313	0.1
Nitrate-N	8.95	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	7.03	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19CW2-7A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284125

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.79	0.1
Fluoride	0.310	0.1
Nitrate-N	8.50	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.85	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19CW2-8A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284126

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.73	0.1
Fluoride	0.380	0.1
Nitrate-N	7.59	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.90	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
19CW2-9A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284127

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.67	0.1
Fluoride	0.357	0.1
Nitrate-N	6.87	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.72	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
19CW2-10A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284116

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.74	0.1
Fluoride	0.355	0.1
Nitrate-N	5.18	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.85	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
19CW2-11A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284117

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.80	0.1
Fluoride	0.362	0.1
Nitrate-N	0.966	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.93	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
19CW2-12A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284118

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.82	0.1
Fluoride	0.357	0.1
Nitrate-N	0.509	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.82	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
19C2-1A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284107

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.79	0.1
Fluoride	0.350	0.1
Nitrate-N	9.63	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.79	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
19C2-2A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284108

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.72	0.1
Fluoride	0.362	0.1
Nitrate-N	9.36	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.81	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
19C2-3A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284109

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.67	0.1
Fluoride	0.371	0.1
Nitrate-N	9.11	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.81	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
19C2-4A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284110

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.72	0.1
Fluoride	0.390	0.1
Nitrate-N	8.91	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.80	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19C2-5A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284111

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.77	0.1
Fluoride	0.379	0.1
Nitrate-N	8.78	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.76	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19C2-6A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284112

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.77	0.1
Fluoride	0.379	0.1
Nitrate-N	8.44	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.76	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19C2-7A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284113

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.70	0.1
Fluoride	0.392	0.1
Nitrate-N	8.18	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.76	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19C2-8A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284114

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.70	0.1
Fluoride	0.416	0.1
Nitrate-N	6.95	0.1
Nitrite-N	0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.76	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
19C2-9A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284115

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.72	0.1
Fluoride	0.415	0.1
Nitrate-N	6.36	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.79	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
19C2-10A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284103

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.77	0.1
Fluoride	0.385	0.1
Nitrate-N	4.64	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.75	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
19C2-11A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284104

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.69	0.1
Fluoride	0.401	0.1
Nitrate-N	0.682	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.86	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
19C2-12A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284105

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.73	0.1
Fluoride	0.380	0.1
Nitrate-N	0.297	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.67	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22CW2-1A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284144

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-13

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.71	0.1
Fluoride	0.412	0.1
Nitrate-N	10.2	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	0.364	0.1
Sulfate	7.01	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22CW2-2A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284145

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-13

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.71	0.1
Fluoride	0.389	0.1
Nitrate-N	9.94	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	0.236	0.1
Sulfate	6.89	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22CW2-3A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284146

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-13

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.67	0.1
Fluoride	0.374	0.1
Nitrate-N	9.47	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	0.189	0.1
Sulfate	6.78	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22CW2-4A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284147

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-13

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.71	0.1
Fluoride	0.375	0.1
Nitrate-N	9.57	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	0.162	0.1
Sulfate	6.92	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22CW2-5A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284148

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-13

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.70	0.1
Fluoride	0.386	0.1
Nitrate-N	9.45	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	0.175	0.1
Sulfate	6.94	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22CW2-6A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284149

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-13

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.73	0.1
Fluoride	0.381	0.1
Nitrate-N	8.95	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	0.123	0.1
Sulfate	6.88	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22CW2-7A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284150

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-13

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.79	0.1
Fluoride	0.363	0.1
Nitrate-N	8.87	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	0.105	0.1
Sulfate	7.13	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22CW2-8A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284151

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-13

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.71	0.1
Fluoride	0.362	0.1
Nitrate-N	7.67	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.85	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22CW2-9A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284152

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-13

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.71	0.1
Fluoride	0.384	0.1
Nitrate-N	6.94	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.89	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22CW2-10A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284141

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.73	0.1
Fluoride	0.379	0.1
Nitrate-N	5.16	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.87	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22CW2-11A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284142

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.75	0.1
Fluoride	0.371	0.1
Nitrate-N	0.955	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.86	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22CW2-12A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284143

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-13

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.75	0.1
Fluoride	0.374	0.1
Nitrate-N	0.541	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	7.07	0.1

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SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22C2-1A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284132

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.95	0.1
Fluoride	0.436	0.1
Nitrate-N	9.33	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	0.102	0.1
Sulfate	7.08	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22C2-2A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284133

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.90	0.1
Fluoride	0.412	0.1
Nitrate-N	8.92	0.1
Nitrite-N	0.105	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.91	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22C2-3A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284134

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.98	0.1
Fluoride	0.430	0.1
Nitrate-N	8.52	0.1
Nitrite-N	0.113	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.95	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22C2-4A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284135

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.88	0.1
Fluoride	0.428	0.1
Nitrate-N	8.16	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.90	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22C2-5A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284136

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.98	0.1
Fluoride	0.406	0.1
Nitrate-N	7.90	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.79	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22C2-6A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284137

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.92	0.1
Fluoride	0.414	0.1
Nitrate-N	7.77	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.83	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22C2-7A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284138

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.89	0.1
Fluoride	0.406	0.1
Nitrate-N	7.44	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.81	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22C2-8A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284139

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.96	0.1
Fluoride	0.405	0.1
Nitrate-N	6.54	0.1
Nitrite-N	0.104	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.76	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22C2-9A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284140

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.95	0.1
Fluoride	0.427	0.1
Nitrate-N	5.80	0.1
Nitrite-N	0.101	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.87	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22C2-10A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284128

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.84	0.1
Fluoride	0.411	0.1
Nitrate-N	4.74	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.86	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22C2-11A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284129

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	1.95	0.1
Fluoride	0.409	0.1
Nitrate-N	0.732	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.89	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22C2-12A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284130

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	2.30	0.1
Fluoride	0.385	0.1
Nitrate-N	0.321	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	6.78	0.1

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19C2-13A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284106

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	8.06	0.1
Chloride	3.91	0.1
Fluoride	1.83	0.1
Nitrate-N	1.70	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	3.84	0.1
Sulfate	8.05	0.1

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22C2-13A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284131

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	8.09	0.1
Chloride	3.92	0.1
Fluoride	1.84	0.1
Nitrate-N	1.72	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	3.97	0.1
Sulfate	8.09	0.1

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SOUTHWEST RESEARCH INSTITUTE
DUPLICATE SUMMARY

Sample ID: 19CW2-5A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284123

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300			
Analysis	Orig. Sample Result (mg/L)	Duplicate Result (mg/L)	RPD
Bromide	<0.1	<0.1	0.00%
Chloride	1.74	1.79	2.83%
Fluoride	0.317	0.311	1.91%
Nitrate-N	9.14	9.16	0.22%
Nitrite-N	<0.1	<0.1	0.00%
Phosphate-P	<0.1	<0.1	0.00%
Sulfate	6.83	6.83	0.00%

SOUTHWEST RESEARCH INSTITUTE
DUPLICATE SUMMARY

Sample ID: 19C2-10A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284103

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 295282

Task Order: 060801-11

Method: IC - EPA 300			
Analysis	Orig. Sample Results (mg/L)	Duplicate Result (mg/L)	RPD
Bromide	<0.1	<0.1	0.00%
Chloride	1.77	1.76	0.57%
Fluoride	0.385	0.390	1.29%
Nitrate-N	4.64	4.62	0.43%
Nitrite-N	<0.1	<0.1	0.00%
Phosphate-P	<0.1	<0.1	0.00%
Sulfate	6.75	6.82	1.03%

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
DUPLICATE SUMMARY

Sample ID: 22CW2-12A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284143

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 295282

Task Order: 060801-13

Method: IC - EPA 300			
Analysis	Orig. Sample Result (mg/L)	Duplicate Result (mg/L)	RPD
Bromide	<0.1	<0.1	0.00%
Chloride	1.75	1.73	1.15%
Fluoride	0.374	0.382	2.12%
Nitrate-N	0.541	0.556	2.73%
Nitrite-N	<0.1	<0.1	0.00%
Phosphate-P	<0.1	<0.1	0.00%
Sulfate	7.07	7.03	0.57%

SOUTHWEST RESEARCH INSTITUTE
MATRIX SPIKE SUMMARY

Sample ID: 19CW2-5A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284123

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300				
Analysis	Orig. Sample Result (mg/L)	Spike Result (mg/L)	Spike Added (mg/L)	Recovery
Bromide	<0.1	4.05	4.00	101%
Chloride	1.74	3.75	2.00	101%
Fluoride	0.317	1.19	1.00	87.3%
Nitrate-N	9.14	9.93	0.904	87.4%
Nitrite-N	<0.1	1.04	1.09	95.4%
Phosphate-P	<0.1	2.08	1.96	106%
Sulfate	6.83	10.7	4.00	96.8%

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SOUTHWEST RESEARCH INSTITUTE
MATRIX SPIKE SUMMARY

Sample ID: 19C2-10A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284103

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300				
Analysis	Orig. Sample Results (mg/L)	Spike Result (mg/L)	Spike Added (mg/L)	Recovery
Bromide	<0.1	3.98	4.00	99.5%
Chloride	1.77	3.71	2.00	97.0%
Fluoride	0.385	1.29	1.00	90.5%
Nitrate-N	4.64	5.46	0.904	90.7%
Nitrite-N	<0.1	1.04	1.09	95.4%
Phosphate-P	<0.1	1.84	1.96	93.9%
Sulfate	6.75	10.8	4.00	101%

SOUTHWEST RESEARCH INSTITUTE
MATRIX SPIKE SUMMARY

Sample ID: 22CW2-12A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 284143

Client: Division 20

Date Received: 08/01/06

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-13

Method: IC - EPA 300				
Analysis	Orig. Sample Result (mg/L)	Spike Result (mg/L)	Spike Added (mg/L)	Recovery
Bromide	<0.1	4.14	4.00	104%
Chloride	1.75	3.76	2.00	101%
Fluoride	0.374	1.26	1.00	88.6%
Nitrate-N	0.541	1.42	0.904	97.2%
Nitrite-N	<0.1	1.05	1.09	96.3%
Phosphate-P	<0.1	2.02	1.96	103%
Sulfate	7.07	11.2	4.00	103%

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SOUTHWEST RESEARCH INSTITUTE
LABORATORY CONTROL SAMPLE

Sample ID: LCS

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300			
Analysis	Sample Result (mg/L)	True Value (mg/L)	Recovery
Bromide	406	400	102%
Chloride	203	200	102%
Fluoride	97.2	100	97.2%
Nitrate-N	87.3	90.4	96.6%
Nitrite-N	104	109	95.4%
Phosphate-P	193	196	98.5%
Sulfate	396	400	99.0%

SOUTHWEST RESEARCH INSTITUTE
LABORATORY CONTROL SAMPLE

Sample ID: LCS

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-13

Method: IC - EPA 300			
Analysis	Sample Result (mg/L)	True Value (mg/L)	Recovery
Bromide	414	400	104%
Chloride	205	200	103%
Fluoride	97.5	100	97.5%
Nitrate-N	89.6	90.4	99.1%
Nitrite-N	106	109	97.2%
Phosphate-P	198	196	101%
Sulfate	401	400	100%

NA- Not Applicable.

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
LABORATORY CONTROL SAMPLE

Sample ID: LCS

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300			
Analysis	Sample Result (mg/L)	True Value (mg/L)	Recovery
Bromide	414	400	104%
Chloride	205	200	103%
Fluoride	96.6	100	96.6%
Nitrate-N	88.8	90.4	98.2%
Nitrite-N	106	109	97.2%
Phosphate-P	195	196	99.5%
Sulfate	396	400	99.0%

SOUTHWEST RESEARCH INSTITUTE
BLANK SUMMARY

Sample ID: PB

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-12

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	<0.1	0.1
Fluoride	<0.1	0.1
Nitrate-N	<0.1	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	<0.1	0.1

NA- Not Applicable.

25 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
BLANK SUMMARY

Sample ID
PB

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-13

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	<0.1	0.1
Fluoride	<0.1	0.1
Nitrate-N	<0.1	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	<0.1	0.1

SOUTHWEST RESEARCH INSTITUTE
BLANK SUMMARY

Sample ID
PB

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.242

SRR: 29582

Task Order: 060801-11

Method: IC - EPA 300		
Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	<0.1	0.1
Fluoride	<0.1	0.1
Nitrate-N	<0.1	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.1	0.1
Sulfate	<0.1	0.1

NA- Not Applicable.

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Table Converting QA Target Concentrations Expressed in Molecules to Elements

Species	Target Conc ~~(g/mL)~~ µg	Conversion Factor (mutiplication factor)	Species	Target Conc ~~(g/mL)~~ µg
Bromide	8 BW 12-21-06	na	Bromide	8 BW 12-21-06
Chloride	4	na	Chloride	4
Fluoride	2	na	Fluoride	2
Nitrate as NO3	8	0.2259	Nitrate as N	1.81
Nitrate as NO2	na	na	Nitrite as N	na
Phosphate as HPO4	12	0.3227	Phospahte as P	3.87
Sulfate as SO4	8	na	Sulfate as SO4	8

N = 14.0067g/mol, NO2 = 46.0055g/mol, and NO3 = 62.0049g/mol
P = 30.974g/mol and HPO4 = 95.9793g/mol
na = not applicable
Source for target conc: 811/27

10-25-06 BW

25 OCT 06 CONT BAW

Table Comparing Anion Target and Div 01 Results
for Blind QA Standard 19C2-13A

Species	Target Conc BW µg ~~(g~~/mL) 12-21-06	Div 01 Conc (mg/L)	Percent Recovery
Bromide	8	8.06	101
Chloride	4	3.91	97.8
Fluoride	2	1.83	91.5
Nitrate as N	1.81	1.70	94.1
Nitrite as N	na	<0.1	na
Phospahte as P	3.87	3.84	99.2
Sulfate as SO4	8	8.05	101

na = not applicable
Source for target conc: 811/27 (see 811/31 for reference)
Source for Div 01 results: 830/54

Table Comparing Anion Target and Div 01 Results
for Blind QA Standard 22C2-13A

Species	Target Conc BW µg ~~(g~~/mL) 12-21-06	Div 01 Conc (mg/L)	Percent Recovery
Bromide	8	8.09	101
Chloride	4	3.92	98.0
Fluoride	2	1.84	92.0
Nitrate as N	1.81	1.72	95.2
Nitrite as N	na	<0.1	na
Phospahte as P	3.87	3.97	103
Sulfate as SO4	8	8.09	101

na = not applicable
Source for target conc: 811/27 (see 811/31 for reference)
Source for Div 01 results: 830/54

Table Comparing Anion Div 01 Results of Duplicate
Blind Standards 19C2-13A and 22C2-13A

Species	QA-anion1 Conc (mg/L)	QA-anion2 Conc (mg/L)	Percent Difference
Bromide	8.06	8.09	0.4
Chloride	3.91	3.92	0.3
Fluoride	1.83	1.84	0.5
Nitrate as N	1.70	1.72	1.2
Nitrite as N	<0.1	<0.1	na
Phospahte as P	3.84	3.97	3.4
Sulfate as SO4	8.05	8.09	0.5

na = not applicable
Source for Div 01 results: 830/54

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Table of Mass Data Used to Calculate Anion Dilution Factors for 19 & 22 CAL Series 2
Sorption Experiments

GED Sample ID	Div 01 Sample ID	Mass (g) of Empty Bottle	Mass (g) of Bottle + Sample	Mass (g) of Bottle + Sample + Water
19CALW2-1	19CW2-1A	8.27521	13.21338	28.41197
19CALW2-2	19CW2-2A	8.20146	13.11976	28.29165
19CALW2-3	19CW2-3A	8.27319	13.19928	28.36801
19CALW2-4	19CW2-4A	8.18078	13.11837	28.31988
19CALW2-5	19CW2-5A	8.20306	13.13229	28.31072
19CALW2-6	19CW2-6A	8.18609	13.11557	28.28618
19CALW2-7	19CW2-7A	8.20062	13.14955	28.32068
19CALW2-8	19CW2-8A	8.2377	13.15883	28.2799
19CALW2-9	19CW2-9A	8.24212	13.15259	28.28628
19CALW2-10	19CW2-10A	8.20752	13.13609	28.25101
19CALW2-11	19CW2-11A	8.22583	13.16446	28.261
19CALW2-12	19CW2-12A	8.22046	13.14661	28.21846
19CAL2-1	19C2-1A	8.20067	13.1619	28.13814
19CAL2-2	19C2-2A	8.18833	13.1316	28.13565
19CAL2-3	19C2-3A	8.19099	13.12796	28.15169
19CAL2-4	19C2-4A	8.20184	13.1499	28.25205
19CAL2-5	19C2-5A	8.1948	13.14183	28.07249
19CAL2-6	19C2-6A	8.26567	13.19471	28.29465
19CAL2-7	19C2-7A	8.19303	13.11646	28.15489
19CAL2-8	19C2-8A	8.20243	13.15166	28.198349
19CAL2-9	19C2-9A	8.20064	13.13872	27.96363
19CAL2-10	19C2-10A	8.19691	13.12673	28.12216
19CAL2-11	19C2-11A	8.19627	13.1172	28.16223
19CAL2-12	19C2-12A	8.20359	13.13613	28.1267
22CALW2-1	22CW2-1A	8.41011	13.36435	28.29178
22CALW2-2	22CW2-2A	8.36939	13.32515	28.51536
22CALW2-3	22CW2-3A	8.36548	13.31487	28.46322
22CALW2-4	22CW2-4A	8.37523	13.32135	28.43581
22CALW2-5	22CW2-5A	8.37769	13.30579	28.4449
22CALW2-6	22CW2-6A	8.35695	13.29268	28.38762
22CALW2-7	22CW2-7A	8.34639	13.2946	28.10806
22CALW2-8	22CW2-8A	8.31961	13.25978	28.39252
22CALW2-9	22CW2-9A	8.42523	13.3585	28.3632
22CALW2-10	22CW2-10A	8.34117	13.27888	28.37638
22CALW2-11	22CW2-11A	8.41992	13.34429	28.38952
22CALW2-12	22CW2-12A	8.34914	13.30132	27.8025
22CAL2-1	22C2-1A	8.37115	13.49571	28.44575
22CAL2-2	22C2-2A	8.40863	13.44786	28.54546
22CAL2-3	22C2-3A	8.34258	13.35142	28.29622
22CAL2-4	22C2-4A	8.35736	13.34462	28.46371
22CAL2-5	22C2-5A	8.39023	13.36747	28.47688
22CAL2-6	22C2-6A	8.44853	13.421	28.57127
22CAL2-7	22C2-7A	8.41662	13.39076	28.4479
22CAL2-8	22C2-8A	8.47955	13.44709	28.5359
22CAL2-9	22C2-9A	8.37084	13.3287	28.34735
22CAL2-10	22C2-10A	8.40813	13.3683	28.40558
22CAL2-11	22C2-11A	8.42525	13.39486	28.48682
22CAL2-12	22C2-12A	8.35361	13.30986	28.44329

Data source: 811/32-33

25OCT06 CONT BAW

Table of Calculated Anion Dilution Factors for 19 & 22 CAL Series 2 Sorption Experiments

GED Sample ID	Div 01 Sample ID	Mass (g) of Sample (Exp Soln Aliquot)	Mass (g) of Soln (Sample + Water)	Dilution Factor*
19CALW2-1	19CW2-1A	4.93817	20.13676	4.07778
19CALW2-2	19CW2-2A	4.9183	20.09019	4.08478
19CALW2-3	19CW2-3A	4.92609	20.09482	4.07926
19CALW2-4	19CW2-4A	4.93759	20.1391	4.07873
19CALW2-5	19CW2-5A	4.92923	20.10766	4.07927
19CALW2-6	19CW2-6A	4.92948	20.10009	4.07753
19CALW2-7	19CW2-7A	4.94893	20.12006	4.06554
19CALW2-8	19CW2-8A	4.92113	20.0422	4.07268
19CALW2-9	19CW2-9A	4.91047	20.04416	4.08192
19CALW2-10	19CW2-10A	4.92857	20.04349	4.06680
19CALW2-11	19CW2-11A	4.93863	20.03517	4.05683
19CALW2-12	19CW2-12A	4.92615	19.998	4.05956
19CAL2-1	19C2-1A	4.96123	19.93747	4.01865
19CAL2-2	19C2-2A	4.94327	19.94732	4.03525
19CAL2-3	19C2-3A	4.93697	19.9607	4.04311
19CAL2-4	19C2-4A	4.94806	20.05021	4.05214
19CAL2-5	19C2-5A	4.94703	19.87769	4.01811
19CAL2-6	19C2-6A	4.92904	20.02898	4.06346
19CAL2-7	19C2-7A	4.92343	19.96186	4.05446
19CAL2-8	19C2-8A	4.94923	19.99592	4.04021
19CAL2-9	19C2-9A	4.93808	19.76299	4.00216
19CAL2-10	19C2-10A	4.92982	19.92525	4.04178
19CAL2-11	19C2-11A	4.92093	19.96596	4.05736
19CAL2-12	19C2-12A	4.93254	19.92311	4.03912
22CALW2-1	22CW2-1A	4.95424	19.88167	4.01306
22CALW2-2	22CW2-2A	4.95576	20.14597	4.06516
22CALW2-3	22CW2-3A	4.94939	20.09774	4.06065
22CALW2-4	22CW2-4A	4.94612	20.06058	4.05582
22CALW2-5	22CW2-5A	4.9281	20.06721	4.07200
22CALW2-6	22CW2-6A	4.93573	20.03067	4.05830
22CALW2-7	22CW2-7A	4.94821	19.76167	3.99370
22CALW2-8	22CW2-8A	4.94017	20.07291	4.06320
22CALW2-9	22CW2-9A	4.93327	19.93797	4.04153
22CALW2-10	22CW2-10A	4.93771	20.03521	4.05759
22CALW2-11	22CW2-11A	4.92437	19.9696	4.05526
22CALW2-12	22CW2-12A	4.95218	19.45336	3.92824
22CAL2-1	22C2-1A	5.12456	20.0746	3.91733
22CAL2-2	22C2-2A	5.03923	20.13683	3.99601
22CAL2-3	22C2-3A	5.00884	19.95364	3.98368
22CAL2-4	22C2-4A	4.98726	20.10635	4.03154
22CAL2-5	22C2-5A	4.97724	20.08665	4.03570
22CAL2-6	22C2-6A	4.97247	20.12274	4.04683
22CAL2-7	22C2-7A	4.97414	20.03128	4.02708
22CAL2-8	22C2-8A	4.96754	20.05635	4.03748
22CAL2-9	22C2-9A	4.95786	19.97651	4.02926
22CAL2-10	22C2-10A	4.96017	19.99745	4.03161
22CAL2-11	22C2-11A	4.96961	20.06157	4.03685
22CAL2-12	22C2-12A	4.95625	20.08968	4.05340

* Calculated by dividing mass of soln (sample + water) by the mass of sample

25OCT06 CONT BAW

Table (Part 1) Summarizing 19 & 22 CAL Series 2 Div 01 Anion Results

GED Sample ID	Div 01 Sample ID	Bromide mg/L	Chloride mg/L	Fluoride mg/L	Nitrate-N mg/L	Nitrite-N mg/L	Phosphate-P mg/L	Sulfate mg/L	Diltution Factors
19CALW2-1	19CW2-1A	<0.1	1.79	0.341	10.1	<0.1	0.133	6.84	4.07778
19CALW2-2	19CW2-2A	<0.1	1.75	0.334	9.73	<0.1	0.107	6.79	4.08478
19CALW2-3	19CW2-3A	<0.1	1.68	0.336	9.62	<0.1	0.118	6.89	4.07926
19CALW2-4	19CW2-4A	<0.1	1.73	0.321	9.37	<0.1	<0.1	6.91	4.07873
19CALW2-5	19CW2-5A	<0.1	1.74	0.317	9.14	<0.1	<0.1	6.83	4.07927
19CALW2-6	19CW2-6A	<0.1	1.82	0.313	8.95	<0.1	<0.1	7.03	4.07753
19CALW2-7	19CW2-7A	<0.1	1.79	0.310	8.50	<0.1	<0.1	6.85	4.06554
19CALW2-8	19CW2-8A	<0.1	1.73	0.380	7.59	<0.1	<0.1	6.90	4.07268
19CALW2-9	19CW2-9A	<0.1	1.67	0.357	6.87	<0.1	<0.1	6.72	4.08192
19CALW2-10	19CW2-10A	<0.1	1.74	0.355	5.18	<0.1	<0.1	6.85	4.06680
19CALW2-11	19CW2-11A	<0.1	1.80	0.362	0.966	<0.1	<0.1	6.93	4.05683
19CALW2-12	19CW2-12A	<0.1	1.82	0.357	0.509	<0.1	<0.1	6.82	4.05956
19CAL2-1	19C2-1A	<0.1	1.79	0.350	9.63	<0.1	<0.1	6.79	4.01865
19CAL2-2	19C2-2A	<0.1	1.72	0.362	9.36	<0.1	<0.1	6.81	4.03525
19CAL2-3	19C2-3A	<0.1	1.67	0.371	9.11	<0.1	<0.1	6.81	4.04311
19CAL2-4	19C2-4A	<0.1	1.72	0.390	8.91	<0.1	<0.1	6.80	4.05214
19CAL2-5	19C2-5A	<0.1	1.77	0.379	8.78	<0.1	<0.1	6.76	4.01811
19CAL2-6	19C2-6A	<0.1	1.77	0.379	8.44	<0.1	<0.1	6.76	4.06346
19CAL2-7	19C2-7A	<0.1	1.70	0.392	8.18	<0.1	<0.1	6.76	4.05446
19CAL2-8	19C2-8A	<0.1	1.70	0.416	6.95	0.1	<0.1	6.76	4.04021
19CAL2-9	19C2-9A	<0.1	1.72	0.415	6.36	<0.1	<0.1	6.79	4.00216
19CAL2-10	19C2-10A	<0.1	1.77	0.385	4.64	<0.1	<0.1	6.75	4.04178
19CAL2-11	19C2-11A	<0.1	1.69	0.401	0.682	<0.1	<0.1	6.86	4.05736
19CAL2-12	19C2-12A	<0.1	1.73	0.380	0.297	<0.1	<0.1	6.67	4.03912

Source for results: 830/29-60

Source for dilution factors: 830/64

Note: Samples (except QAs) delivered to Div 01 were diluted (Source 811/28-29)

25 OCT 06 CONT BAW

Table (Part 2) Summarizing 19 & 22 CAL Series 2 Div 01 Anion Results

GED Sample ID	Div 01 Sample ID	Bromide mg/L	Chloride mg/L	Fluoride mg/L	Nitrate-N mg/L	Nitrite-N mg/L	Phosphate-P mg/L	Sulfate mg/L	Diltution Factors
22CALW2-1	22CW2-1A	<0.1	1.71	0.412	10.2	<0.1	0.364	7.01	4.01306
22CALW2-2	22CW2-2A	<0.1	1.71	0.389	9.94	<0.1	0.236	6.89	4.06516
22CALW2-3	22CW2-3A	<0.1	1.67	0.374	9.47	<0.1	0.189	6.78	4.06065
22CALW2-4	22CW2-4A	<0.1	1.71	0.375	9.57	<0.1	0.162	6.92	4.05582
22CALW2-5	22CW2-5A	<0.1	1.70	0.386	9.45	<0.1	0.175	6.94	4.07200
22CALW2-6	22CW2-6A	<0.1	1.73	0.381	8.95	<0.1	0.123	6.88	4.05830
22CALW2-7	22CW2-7A	<0.1	1.79	0.363	8.87	<0.1	0.105	7.13	3.99370
22CALW2-8	22CW2-8A	<0.1	1.71	0.362	7.67	<0.1	<0.1	6.85	4.06320
22CALW2-9	22CW2-9A	<0.1	1.71	0.384	6.94	<0.1	<0.1	6.89	4.04153
22CALW2-10	22CW2-10A	<0.1	1.73	0.379	5.16	<0.1	<0.1	6.87	4.05759
22CALW2-11	22CW2-11A	<0.1	1.75	0.371	0.955	<0.1	<0.1	6.86	4.05526
22CALW2-12	22CW2-12A	<0.1	1.75	0.374	0.541	<0.1	<0.1	7.07	3.92824
22CAL2-1	22C2-1A	<0.1	1.95	0.436	9.33	<0.1	0.102	7.08	3.91733
22CAL2-2	22C2-2A	<0.1	1.90	0.412	8.92	0.105	<0.1	6.91	3.99601
22CAL2-3	22C2-3A	<0.1	1.98	0.430	8.52	0.113	<0.1	6.95	3.98368
22CAL2-4	22C2-4A	<0.1	1.88	0.428	8.16	<0.1	<0.1	6.90	4.03154
22CAL2-5	22C2-5A	<0.1	1.98	0.406	7.90	<0.1	<0.1	6.79	4.03570
22CAL2-6	22C2-6A	<0.1	1.92	0.414	7.77	<0.1	<0.1	6.83	4.04683
22CAL2-7	22C2-7A	<0.1	1.89	0.406	7.44	<0.1	<0.1	6.81	4.02708
22CAL2-8	22C2-8A	<0.1	1.96	0.405	6.54	0.104	<0.1	6.76	4.03748
22CAL2-9	22C2-9A	<0.1	1.95	0.427	5.80	0.101	<0.1	6.87	4.02926
22CAL2-10	22C2-10A	<0.1	1.84	0.411	4.74	<0.1	<0.1	6.86	4.03161
22CAL2-11	22C2-11A	<0.1	1.95	0.409	0.732	<0.1	<0.1	6.89	4.03685
22CAL2-12	22C2-12A	<0.1	2.30	0.385	0.321	<0.1	<0.1	6.78	4.05340
Anion QA Std NpCS	19C2-13A	8.06	3.91	1.83	1.70	<0.1	3.84	8.05	1
Anion QA Std NpCS	22C2-13A	8.09	3.92	1.84	1.72	<0.1	3.97	8.09	1

Source for results: 830/29-60

Source for dilution factors: 830/64

Note: Samples (except QAs) delivered to Div 01 were diluted (Source 811/28-29)

25 OCT 06 CONT BAW

Table Summarizing 19 & 22 CAL Series 2 Anion Concentrations in Original Experimental Solns

GED Sample ID	Div 01 Sample ID	Bromide mg/L	Chloride mg/L	Fluoride mg/L	Nitrate-N mg/L	Nitrite-N mg/L	Phosphate-P mg/L	Sulfate mg/L
19CALW2-1	19CW2-1A	<0.4	7.30	1.39	41.2	<0.4	0.542	27.9
19CALW2-2	19CW2-2A	<0.4	7.15	1.36	39.7	<0.4	0.437	27.7
19CALW2-3	19CW2-3A	<0.4	6.85	1.37	39.2	<0.4	0.481	28.1
19CALW2-4	19CW2-4A	<0.4	7.06	1.31	38.2	<0.4	<0.4	28.2
19CALW2-5	19CW2-5A	<0.4	7.10	1.29	37.3	<0.4	<0.4	27.9
19CALW2-6	19CW2-6A	<0.4	7.42	1.28	36.5	<0.4	<0.4	28.7
19CALW2-7	19CW2-7A	<0.4	7.28	1.26	34.6	<0.4	<0.4	27.8
19CALW2-8	19CW2-8A	<0.4	7.05	1.55	30.9	<0.4	<0.4	28.1
19CALW2-9	19CW2-9A	<0.4	6.82	1.46	28.0	<0.4	<0.4	27.4
19CALW2-10	19CW2-10A	<0.4	7.08	1.44	21.1	<0.4	<0.4	27.9
19CALW2-11	19CW2-11A	<0.4	7.30	1.47	3.92	<0.4	<0.4	28.1
19CALW2-12	19CW2-12A	<0.4	7.39	1.45	2.07	<0.4	<0.4	27.7
19CAL2-1	19C2-1A	<0.4	7.19	1.41	38.7	<0.4	<0.4	27.3
19CAL2-2	19C2-2A	<0.4	6.94	1.46	37.8	<0.4	<0.4	27.5
19CAL2-3	19C2-3A	<0.4	6.75	1.50	36.8	<0.4	<0.4	27.5
19CAL2-4	19C2-4A	<0.4	6.97	1.58	36.1	<0.4	<0.4	27.6
19CAL2-5	19C2-5A	<0.4	7.11	1.52	35.3	<0.4	<0.4	27.2
19CAL2-6	19C2-6A	<0.4	7.19	1.54	34.3	<0.4	<0.4	27.5
19CAL2-7	19C2-7A	<0.4	7.19	1.54	34.3	<0.4	<0.4	27.5
19CAL2-8	19C2-8A	<0.4	6.87	1.68	28.1	0.404	<0.4	27.3
19CAL2-9	19C2-9A	<0.4	6.88	1.66	25.5	<0.4	<0.4	27.2
19CAL2-10	19C2-10A	<0.4	7.15	1.56	18.8	<0.4	<0.4	27.3
19CAL2-11	19C2-11A	<0.4	6.86	1.63	2.77	<0.4	<0.4	27.8
19CAL2-12	19C2-12A	<0.4	6.99	1.53	1.20	<0.4	<0.4	26.9
22CALW2-1	22CW2-1A	<0.4	6.86	1.65	40.9	<0.4	1.46	28.1
22CALW2-2	22CW2-2A	<0.4	6.95	1.58	40.4	<0.4	0.959	28.0
22CALW2-3	22CW2-3A	<0.4	6.78	1.52	38.5	<0.4	0.767	27.5
22CALW2-4	22CW2-4A	<0.4	6.94	1.52	38.8	<0.4	0.657	28.1
22CALW2-5	22CW2-5A	<0.4	6.92	1.57	38.5	<0.4	0.713	28.3
22CALW2-6	22CW2-6A	<0.4	7.02	1.55	36.3	<0.4	0.499	27.9
22CALW2-7	22CW2-7A	<0.4	7.15	1.45	35.4	<0.4	0.419	28.5
22CALW2-8	22CW2-8A	<0.4	6.95	1.47	31.2	<0.4	<0.4	27.8
22CALW2-9	22CW2-9A	<0.4	6.91	1.55	28.0	<0.4	<0.4	27.8
22CALW2-10	22CW2-10A	<0.4	7.02	1.54	20.9	<0.4	<0.4	27.9
22CALW2-11	22CW2-11A	<0.4	7.10	1.50	3.87	<0.4	<0.4	27.8
22CALW2-12	22CW2-12A	<0.4	6.87	1.47	2.13	<0.4	<0.4	27.8
22CAL2-1	22C2-1A	<0.4	7.64	1.71	36.5	<0.4	0.400	27.7
22CAL2-2	22C2-2A	<0.4	7.59	1.65	35.6	0.420	<0.4	27.6
22CAL2-3	22C2-3A	<0.4	7.89	1.71	33.9	0.450	<0.4	27.7
22CAL2-4	22C2-4A	<0.4	7.58	1.73	32.9	<0.4	<0.4	27.8
22CAL2-5	22C2-5A	<0.4	7.99	1.64	31.9	<0.4	<0.4	27.4
22CAL2-6	22C2-6A	<0.4	7.77	1.68	31.4	<0.4	<0.4	27.6
22CAL2-7	22C2-7A	<0.4	7.61	1.63	30.0	<0.4	<0.4	27.4
22CAL2-8	22C2-8A	<0.4	7.91	1.64	26.4	0.420	<0.4	27.3
22CAL2-9	22C2-9A	<0.4	7.86	1.72	23.4	0.407	<0.4	27.7
22CAL2-10	22C2-10A	<0.4	7.42	1.66	19.1	<0.4	<0.4	27.7
22CAL2-11	22C2-11A	<0.4	7.87	1.65	2.95	<0.4	<0.4	27.8
22CAL2-12	22C2-12A	<0.4	9.32	1.56	1.30	<0.4	<0.4	27.5
Anion QA Std NpCS	19C2-13A	8.06	3.91	1.83	1.7	<0.1	3.84	8.05
Anion QA Std NpCS	22C2-13A	8.09	3.92	1.84	1.72	<0.1	3.97	8.09

Calculated by multiplying Div 01 results by dilution factor (Source: 830/65-66)

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Div 01 Anion Results for Ref Soln ~~PB~~ BW 10-26-06
19PB-4 and Select 19PB (w+w/o calcite) and
22PC (w+w/o calcite) Phase 1 (testing pH
reportability) Experimental Solns

Initial Entry for sorption experiment: 811/51

Samples: Total of 19 anion
16 select (not all) experimental solns
- Solid using 19PB sonic core composite
- Solid using 19PB sonic core composite w/o calcite
- Solid using 22PC sonic core composite
- Solid using 22PC sonic core composite w/o calcite

Two QA solns for anions (duplicates)
1 Ref soln: 19PB-4 (811/63)
Note: Ref soln 19PB-3 used for experimental
solns used in this exp (811/50, 51, + 53)
For 19PB-3 anion analyses, see 812/47

Sample Collection: 811/61-62
Sample ID Legend: 811/63
Note: Anion samples were diluted but
Cation and Ref were not diluted
Sample masses for dilution factors: 811/64

QA target conc: 811/60
Delivery + Chain of Custody: 811/66, 69-70

Following the raw data are: Dilution Factor calcs
Ref + QA data + recoveries
Reorganized Div01 results
Anion conc in exp soln calcs

27 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19WT-1A

Lab Name: Southwest Research Institute
Lab Code: SwRI
Matrix: Water
Lab System ID: 285432

Client: Division 20
Date Received: 08/25/06
Project No.: 06002.01.242
SRR: 29696
Task Order: 060828-5

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	2.59	0.1	mg/L	EPA 300
Fluoride	0.369	0.1	mg/L	EPA 300
Nitrate-N	0.796	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	6.93	0.1	mg/L	EPA 300

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19WT-2A

Lab Name: Southwest Research Institute
Lab Code: SwRI
Matrix: Water
Lab System ID: 285434

Client: Division 20
Date Received: 08/25/06
Project No.: 06002.01.242
SRR: 29696
Task Order: 060828-5

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	2.03	0.1	mg/L	EPA 300
Fluoride	0.380	0.1	mg/L	EPA 300
Nitrate-N	0.805	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	7.09	0.1	mg/L	EPA 300

27OCT06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19WT-3A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285436

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	2.29	0.1	mg/L	EPA 300
Fluoride	0.383	0.1	mg/L	EPA 300
Nitrate-N	0.549	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	7.11	0.1	mg/L	EPA 300

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19WT-4A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285438

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	1.95	0.1	mg/L	EPA 300
Fluoride	0.372	0.1	mg/L	EPA 300
Nitrate-N	0.550	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	7.07	0.1	mg/L	EPA 300

27OCT06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19WOT-5A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285424

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	2.19	0.1	mg/L	EPA 300
Fluoride	0.389	0.1	mg/L	EPA 300
Nitrate-N	0.731	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	7.09	0.1	mg/L	EPA 300

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19WOT-6A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285426

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	2.60	0.1	mg/L	EPA 300
Fluoride	0.384	0.1	mg/L	EPA 300
Nitrate-N	0.719	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	6.99	0.1	mg/L	EPA 300

27 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19WOT-7A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285428

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	2.03	0.1	mg/L	EPA 300
Fluoride	0.384	0.1	mg/L	EPA 300
Nitrate-N	0.458	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	6.94	0.1	mg/L	EPA 300

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19WOT-8A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285430

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	1.98	0.1	mg/L	EPA 300
Fluoride	0.373	0.1	mg/L	EPA 300
Nitrate-N	0.480	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	7.10	0.1	mg/L	EPA 300

27 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22WT-9A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285454

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	2.04	0.1	mg/L	EPA 300
Fluoride	0.363	0.1	mg/L	EPA 300
Nitrate-N	0.832	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	7.01	0.1	mg/L	EPA 300

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22WT-10A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285448

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	1.99	0.1	mg/L	EPA 300
Fluoride	0.385	0.1	mg/L	EPA 300
Nitrate-N	0.835	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	7.10	0.1	mg/L	EPA 300

27OCT06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22WT-11A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285450

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	1.98	0.1	mg/L	EPA 300
Fluoride	0.385	0.1	mg/L	EPA 300
Nitrate-N	0.564	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	7.15	0.1	mg/L	EPA 300

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22WT-12A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285452

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	2.08	0.1	mg/L	EPA 300
Fluoride	0.367	0.1	mg/L	EPA 300
Nitrate-N	0.520	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	6.85	0.1	mg/L	EPA 300

27OCT06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22WOT-13A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285440

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	2.00	0.1	mg/L	EPA 300
Fluoride	0.373	0.1	mg/L	EPA 300
Nitrate-N	0.739	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	7.03	0.1	mg/L	EPA 300

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22WOT-14A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285442

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	2.06	0.1	mg/L	EPA 300
Fluoride	0.386	0.1	mg/L	EPA 300
Nitrate-N	0.741	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	7.09	0.1	mg/L	EPA 300

27OCT06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22WOT-15A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285444

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	3.00	0.1	mg/L	EPA 300
Fluoride	0.373	0.1	mg/L	EPA 300
Nitrate-N	0.470	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	7.07	0.1	mg/L	EPA 300

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22WOT-16A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285446

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	1.98	0.1	mg/L	EPA 300
Fluoride	0.379	0.1	mg/L	EPA 300
Nitrate-N	0.459	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	7.06	0.1	mg/L	EPA 300

27OCT06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 1922-5A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285422

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	7.96	0.1	mg/L	EPA 300
Chloride	3.80	0.1	mg/L	EPA 300
Fluoride	1.82	0.1	mg/L	EPA 300
Nitrate-N	1.68	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	3.85	0.1	mg/L	EPA 300
Sulfate	8.10	0.1	mg/L	EPA 300

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 1922-6A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285423

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	8.13	0.1	mg/L	EPA 300
Chloride	4.01	0.1	mg/L	EPA 300
Fluoride	1.85	0.1	mg/L	EPA 300
Nitrate-N	1.69	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	3.90	0.1	mg/L	EPA 300
Sulfate	8.11	0.1	mg/L	EPA 300

27 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 1922-1A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285417

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	5.97	0.1	mg/L	EPA 300
Fluoride	1.25	0.1	mg/L	EPA 300
Nitrate-N	0.547	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	27.7	0.1	mg/L	EPA 300

SOUTHWEST RESEARCH INSTITUTE
DUPLICATE SUMMARY

Sample ID: 1922-1A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285417D

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Method: IC - EPA 300			
Analysis	Orig. Sample Result (mg/L)	Duplicate Result (mg/L)	RPD
Bromide	<0.1	<0.1	0.00%
Chloride	5.97	6.04	1.17%
Fluoride	1.25	1.32	5.45%
Nitrate-N	0.547	0.556	1.63%
Nitrite-N	<0.1	<0.1	0.00%
Phosphate-P	<0.1	<0.1	0.00%
Sulfate	27.7	27.2	1.82%

27 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
MATRIX SPIKE SUMMARY

Sample ID: 1922-1A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285417S

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Method: IC - EPA 300				
Analysis	Orig. Sample Result (mg/L)	Spike Result (mg/L)	Spike Added (mg/L)	Recovery
Bromide	<0.1	4.10	4.00	102.5%
Chloride	5.97	8.16	2.00	109.5%
Fluoride	1.25	2.27	1.00	102.0%
Nitrate-N	0.547	1.41	0.904	95.5%
Nitrite-N	<0.1	1.09	1.09	100.0%
Phosphate-P	<0.1	1.96	1.96	100.0%
Sulfate	27.7	46.5	20.0	94.0%

SOUTHWEST RESEARCH INSTITUTE
LABORATORY CONTROL SAMPLE

Sample ID: LCS 08/30/06

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	True Value	Recovery	Units
Bromide	389	400	97.3%	mg/L
Chloride	193	200	96.5%	mg/L
Fluoride	91.5	100	91.5%	mg/L
Nitrate-N	83.8	90.4	92.7%	mg/L
Nitrite-N	102	109	93.6%	mg/L
Phosphate-P	185	196	94.4%	mg/L
Sulfate	382	400	95.5%	mg/L

NA- Not applicable

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SOUTHWEST RESEARCH INSTITUTE
LABORATORY CONTROL SAMPLE

Sample ID: LCS 08/31/06

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	True Value	Recovery	Units
Bromide	409	400	102%	mg/L
Chloride	204	200	102%	mg/L
Fluoride	95.9	100	95.9%	mg/L
Nitrate-N	87.8	90.4	97.1%	mg/L
Nitrite-N	105	109	96.3%	mg/L
Phosphate-P	195	196	99.5%	mg/L
Sulfate	400	400	100%	mg/L

SOUTHWEST RESEARCH INSTITUTE
LABORATORY CONTROL SAMPLE

Sample ID: LCS 09/21/06

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	True Value	Recovery	Units
Bromide	408	400	102%	mg/L
Chloride	205	200	103%	mg/L
Fluoride	96.3	100	96.3%	mg/L
Nitrate-N	88.5	90.4	97.9%	mg/L
Nitrite-N	112	109	103%	mg/L
Phosphate-P	195	196	99.5%	mg/L
Sulfate	400	400	100%	mg/L

NA- Not applicable

27 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
BLANK SUMMARY

Sample ID: PB 08/30/06

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	Reporting Limit	Units
Bromide	<0.1	0.1	mg/L
Chloride	<0.1	0.1	mg/L
Fluoride	<0.1	0.1	mg/L
Nitrate-N	<0.1	0.1	mg/L
Nitrite-N	<0.1	0.1	mg/L
Phosphate-P	<0.1	0.1	mg/L
Sulfate	<0.1	0.1	mg/L

SOUTHWEST RESEARCH INSTITUTE
BLANK SUMMARY

Sample ID: PB 08/31/06

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	Reporting Limit	Units
Bromide	<0.1	0.1	mg/L
Chloride	<0.1	0.1	mg/L
Fluoride	<0.1	0.1	mg/L
Nitrate-N	<0.1	0.1	mg/L
Nitrite-N	<0.1	0.1	mg/L
Phosphate-P	<0.1	0.1	mg/L
Sulfate	<0.1	0.1	mg/L

NA- Not applicable

27 OCT 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
BLANK SUMMARY

Sample ID
PB 09/21/06

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-5

Analysis	Sample Result	Reporting Limit	Units
Bromide	<0.1	0.1	mg/L
Chloride	<0.1	0.1	mg/L
Fluoride	<0.1	0.1	mg/L
Nitrate-N	<0.1	0.1	mg/L
Nitrite-N	<0.1	0.1	mg/L
Phosphate-P	<0.1	0.1	mg/L
Sulfate	<0.1	0.1	mg/L

NA- Not applicable

Table Converting QA Target Concentrations Expressed in Molecules to Elements

Species	Target Conc ~~(g~~/mL) BW 12-21-06 Mg	Conversion Factor (mutiplication factor)	Species	Target Conc ~~(g~~/mL) Mg BW 12-21-06
Bromide	8	na	Bromide	8
Chloride	4	na	Chloride	4
Fluoride	2	na	Fluoride	2
Nitrate as NO3	8	0.2259	Nitrate as N	1.81
Nitrite as NO2	na	na	Nitrite as N	na
Phosphate as HPO4	12	0.3227	Phospahte as P	3.87
Sulfate as SO4	8	na	Sulfate as SO4	8

N = 14.0067g/mol, NO2 = 46.0055g/mol, and NO3 = 62.0049g/mol
P = 30.974g/mol and HPO4 = 95.9793g/mol
na = not applicable
Source for target conc: 811/60

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Table Converting Reference Solution Target Concentrations Expressed in Molecules to Elements for 19PB Shallow String Simulated Water with Calcium

Species	Target Conc ~~(g~~/mL) BW 12-21-06 Mg	Conversion Factor (mutiplication factor)	Species	Target Conc ~~(g~~/mL) Mg BW 12-21-06
Bromide	na	na	Bromide	na
Chloride	6.20	na	Chloride	6.20
Fluoride	1.46	na	Fluoride	1.46
Nitrate as NO3	2.79	0.2259	Nitrate as N	0.63
Nitrite as NO2	na	na	Nitrite as N	na
Phosphate as HPO4	na	na	Phospahte as P	na
Sulfate as SO4	27.9	na	Sulfate as SO4	27.9

N = 14.0067g/mol, NO2 = 46.0055g/mol, and NO3 = 62.0049g/mol
na = not applicable
Source for target conc: preparation on 811/65 references 812/4-5 for target conc

Table Comparing Anion Target and Div 01 results for Reference Solution 19PB-4 Simulated Groundwater with Calcium

Species	Target Conc (mg/L)	Div 01 Conc (mg/L)	Percent Recovery
Bromide	na	<0.1	na
Chloride	6.20	5.97	96.3
Fluoride	1.46	1.25	85.6
Nitrate as N	0.630	0.547	86.8
Nitrite as N	na	<0.1	na
Phospahte as P	na	<0.1	na
Sulfate as SO4	27.9	27.7	99.3

na = not applicable
Source for target conc: 812/5
Source for Div 01 results: 830/78

10-27-06 BAW

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BW 10-27-06

Table Comparing Anion Target and Div 01 Results
for Blind QA Standard 1922-5A

Species	Target Conc ~~(g~~ Mg/mL)	Div 01 Conc (mg/L)	Percent Recovery
Bromide	8	7.96	99.5
Chloride	4	3.80	95.0
Fluoride	2	1.82	91.0
Nitrate as N	1.81	1.68	93.0
Nitrite as N	na	<0.1	na
Phospahte as P	3.87	3.85	99.4
Sulfate as SO4	8	8.10	101

BW 12-21-06

na = not applicable
Source for target conc: 811/60 (see 811/62 for reference)
Source for Div 01 results: 830/77

Table Comparing Anion Target and Div 01 Results
for Blind QA Standard 1922-6A

Species	Target Conc ~~(g~~ Mg/mL)	Div 01 Conc (mg/L)	Percent Recovery
Bromide	8	8.13	102
Chloride	4	4.01	100
Fluoride	2	1.85	92.5
Nitrate as N	1.81	1.69	93.5
Nitrite as N	na	<0.1	na
Phospahte as P	3.87	3.90	101
Sulfate as SO4	8	8.11	101

BW 12-21-06

na = not applicable
Source for target conc: 811/60 (see 811/62 for reference)
Source for Div 01 results: 830/77

Table Comparing Anion Div 01 Results of Duplicate
Blind Standards 1922-5A and 1922-6A

Species	QA-anion1 Conc (mg/L)	QA-anion2 Conc (mg/L)	Percent Difference
Bromide	7.96	8.13	2.1
Chloride	3.80	4.01	5.5
Fluoride	1.82	1.85	1.6
Nitrate as N	1.68	1.69	0.6
Nitrite as N	<0.1	<0.1	na
Phospahte as P	3.85	3.90	1.3
Sulfate as SO4	8.10	8.11	0.1

na = not applicable
Source for Div 01 results: 830/77

27OCT06 CONT BAW

Table of Mass Data Used to Calculate Anion Dilution Factors for 19 & 22 Phase 1 Sorption Experiments

GED Sample ID	Div 01 Sample ID	Mass (g) of Empty Bottle	Mass (g) of Bottle + Sample	Mass (g) of Bottle + Sample + Water
19W-T1	19WT-1A	8.45066	13.33959	28.69003
19W-T2	19WT-2A	8.34778	13.41239	28.83442
19W-T6	19WT-3A	8.44062	13.57810	29.11861
19W-T7	19WT-4A	8.39433	13.51543	28.83877
19WO-T2	19WOT-5A	8.34912	13.47439	28.76716
19WO-T3	19WOT-6A	8.43936	13.50773	28.82150
19WO-T6	19WOT-7A	8.34755	13.40319	28.80042
19WO-T7	19WOT-8A	8.36883	13.49071	28.79906
22W-T2	22WT-9A	8.39897	13.52197	28.78719
22W-T3	22WT-10A	8.45683	13.56149	28.85364
22W-T6	22WT-11A	8.41397	13.48461	28.75202
22W-T7	22WT-12A	8.39674	13.24900	28.60859
22WO-T3	22WOT-13A	8.47533	13.58414	28.87450
22WO-T4	22WOT-14A	8.34898	13.46073	28.69468
22WO-T6	22WOT-15A	8.36913	13.42579	28.67553
22WO-T7	22WOT-16A	8.39221	13.42575	28.65349

Data Source: 811/64

Table of Calculated Anion Dilution Factors for 19 & 22 Phase 1 Sorption Experiments

GED Sample ID	Div 01 Sample ID	Mass (g) of Sample (Exp Soln Aliquot)	Mass (g) of Soln (Sample + Water)	Dilution Factor*
19W-T1	19WT-1A	4.88893	20.23937	4.13984
19W-T2	19WT-2A	5.06461	20.48664	4.04506
19W-T6	19WT-3A	5.13748	20.67799	4.02493
19W-T7	19WT-4A	5.1211	20.44444	3.99220
19WO-T2	19WOT-5A	5.12527	20.41804	3.98380
19WO-T3	19WOT-6A	5.06837	20.38214	4.02144
19WO-T6	19WOT-7A	5.05564	20.45287	4.04556
19WO-T7	19WOT-8A	5.12188	20.43023	3.98881
22W-T2	22WT-9A	5.123	20.38822	3.97974
22W-T3	22WT-10A	5.10466	20.39681	3.99572
22W-T6	22WT-11A	5.07064	20.33805	4.01094
22W-T7	22WT-12A	4.85226	20.21185	4.16545
22WO-T3	22WOT-13A	5.10881	20.39917	3.99294
22WO-T4	22WOT-14A	5.11175	20.3457	3.98018
22WO-T6	22WOT-15A	5.05666	20.3064	4.01577
22WO-T7	22WOT-16A	5.03354	20.26128	4.02525

* Calculated by dividing mass of soln (sample + water) by the mass of sample

10-27-06 BAW

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Table Summarizing 19 & 22 Phase 1 Div 01 Anion Results

GED Sample ID	Div 01 Sample ID	Bromide mg/L	Chloride mg/L	Fluoride mg/L	Nitrate-N mg/L	Nitrite-N mg/L	Phosphate-P mg/L	Sulfate mg/L	Dilution Factors
19W-T1	19WT-1A	<0.1	2.59	0.369	0.796	<0.1	<0.1	6.93	4.13984
19W-T2	19WT-2A	<0.1	2.03	0.380	0.805	<0.1	<0.1	7.09	4.04506
19W-T6	19WT-3A	<0.1	2.29	0.383	0.549	<0.1	<0.1	7.11	4.02493
19W-T7	19WT-4A	<0.1	1.95	0.372	0.550	<0.1	<0.1	7.07	3.99220
19WO-T2	19WOT-5A	<0.1	2.19	0.389	0.731	<0.1	<0.1	7.09	3.98380
19WO-T3	19WOT-6A	<0.1	2.60	0.384	0.719	<0.1	<0.1	6.99	4.02144
19WO-T6	19WOT-7A	<0.1	2.03	0.384	0.458	<0.1	<0.1	6.94	4.04556
19WO-T7	19WOT-8A	<0.1	1.98	0.373	0.480	<0.1	<0.1	7.10	3.98881
22W-T2	22WT-9A	<0.1	2.04	0.363	0.832	<0.1	<0.1	7.01	3.97974
22W-T3	22WT-10A	<0.1	1.99	0.385	0.835	<0.1	<0.1	7.10	3.99572
22W-T6	22WT-11A	<0.1	1.98	0.385	0.564	<0.1	<0.1	7.15	4.01094
22W-T7	22WT-12A	<0.1	2.08	0.367	0.520	<0.1	<0.1	6.85	4.16545
22WO-T3	22WOT-13A	<0.1	2.00	0.373	0.739	<0.1	<0.1	7.03	3.99294
22WO-T4	22WOT-14A	<0.1	2.06	0.386	0.741	<0.1	<0.1	7.09	3.98018
22WO-T6	22WOT-15A	<0.1	3.00	0.373	0.470	<0.1	<0.1	7.07	4.01577
22WO-T7	22WOT-16A	<0.1	1.98	0.379	0.459	<0.1	<0.1	7.06	4.02525
QA-anion1	1922-5A	7.96	3.80	1.82	1.68	<0.1	3.85	8.10	1
QA-anion2	1922-6A	8.13	4.01	1.85	1.69	<0.1	3.90	8.11	1
19PB-4 w Ca	1922-1A	<0.1	5.97	1.25	0.547	<0.1	<0.1	27.7	1

Source for results: 830/68-82
Source for dilution factors: 830/85
Note: Samples (except QA & Ref solns) delivered to Div 01 were diluted (830/68 also 811/61-2)

10-27-06 BAW

27 OCT 06 CONT BAW

Table Summarizing 19 & 22 Phase 1 Anion Concentrations in Original Experimental Solns

GED Sample ID	Div 01 Sample ID	Bromide mg/L	Chloride mg/L	Fluoride mg/L	Nitrate-N mg/L	Nitrite-N mg/L	Phosphate-P mg/L	Sulfate mg/L
19W-T1	19WT-1A	<0.4	10.7	1.53	3.30	<0.4	<0.4	28.7
19W-T2	19WT-2A	<0.4	8.21	1.54	3.26	<0.4	<0.4	28.7
19W-T6	19WT-3A	<0.4	9.22	1.54	2.21	<0.4	<0.4	28.6
19W-T7	19WT-4A	<0.4	7.78	1.49	2.20	<0.4	<0.4	28.2
19WO-T2	19WOT-5A	<0.4	8.7	1.55	2.91	<0.4	<0.4	28.2
19WO-T3	19WOT-6A	<0.4	10.5	1.54	2.89	<0.4	<0.4	28.1
19WO-T6	19WOT-7A	<0.4	8.21	1.55	1.85	<0.4	<0.4	28.1
19WO-T7	19WOT-8A	<0.4	7.90	1.49	1.91	<0.4	<0.4	28.3
22W-T2	22WT-9A	<0.4	8.12	1.44	3.31	<0.4	<0.4	27.9
22W-T3	22WT-10A	<0.4	7.95	1.54	3.34	<0.4	<0.4	28.4
22W-T6	22WT-11A	<0.4	7.94	1.54	2.26	<0.4	<0.4	28.7
22W-T7	22WT-12A	<0.4	8.66	1.53	2.17	<0.4	<0.4	28.5
22WO-T3	22WOT-13A	<0.4	7.99	1.49	2.95	<0.4	<0.4	28.1
22WO-T4	22WOT-14A	<0.4	8.20	1.54	2.95	<0.4	<0.4	28.2
22WO-T6	22WOT-15A	<0.4	12.0	1.50	1.89	<0.4	<0.4	28.4
22WO-T7	22WOT-16A	<0.4	7.97	1.53	1.85	<0.4	<0.4	28.4
QA-anion1	1922-5A	7.96	3.80	1.82	1.68	<0.1	3.85	8.10
QA-anion2	1922-6A	8.13	4.01	1.85	1.69	<0.1	3.90	8.11
19PB-4 w Ca	1922-1A	<0.1	5.97	1.25	0.547	<0.1	<0.1	27.7

Calculated by multiplying Div 01 results by dilution factor (Source: 830/86)

11-14-06 BAW

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Stable Isotope Results from Sept 2006
NC-EWDP Groundwater Sampling Event

Task initially assigned to: Bradley Werling

Entry for Sept 2006 Sample Collection:
811/110-112 and 333/76-80

Entry for aliquit creation for stable isotope analyses: ~~812-120~~ 812/120
BW 11/14/06

OBJECTIVE: To help characterize the groundwater in the Yucca Mountain vicinity and aid in the investigation concerning radionuclide sorption

SAMPLES: 4 total samples (812/120-121)
Sample from one NC-EWDP well (13P) analyzed in duplicate and one QA sample analyzed in duplicate.

Legend relating CNWRA Ids to Coastal Science IDs at 812/120-121

Procurement Plan: Attachment to electronic purchase requisition # 07001511 (PO# 786982W) requires ±5% for the majority of H and O analyses an CNWRA duplicates.

14-Nov-06 BW

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COASTAL SCIENCE LABORATORIES, INC.
6000 Mountain Shadows Drive • Austin, Texas 78735 • (512) 288-5533

November 9, 2006

Dr. Bradley A. Werling
Southwest Research Institute
Center for Nuclear Waste Regulatory Analyses
6220 Culebra Road
San Antonio, TX 78238-5166

Dear Dr. Werling:

We have completed stable isotope analysis of your samples received recently. The hydrogen data are reported relative to the SMOW reference material and are believed accurate to ±5 per mil. The oxygen data are also reported relative to SMOW and are believed accurate to ±0.3 per mil.

Purchase Req. No. 07001511

See note on sample IDs 1st Table 830/90.
BW 11-15-06

SAMPLE	δD_{SMOW}	$\delta^{18}O_{SMOW}$
090651	-109, -109	-13.4
090652	-109, -109	-13.4
090653	-32, -33	-4.4
090654	-32, -33	-4.4

Yours truly,

Kenneth Winters
Laboratory Manager

CSL Ref.#FR91

14-Nov-06 BW

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Stable Isotope data with full legend

CNWRA Sample ID	Coastal Science Sample ID	Hydrogen	Hydrogen CSL dup	Oxygen	Oxygen CSL dup
NC-EWDP-13P-0906-S-FUA	0906S1	-109	-109	-13.4	na
NC-EWDP-13P-0906-S-FUA	0906S2	-109	-109	-13.4	na
Lab tap water blank	0906S3	-32	-33	-4.4	na
Lab tap water blank	0906S4	-32	-33	-4.4	na

CSL = Coastal Science Lab na = not analyzed

CSL randomly performs duplicate analyses on samples sent to them (typically about 20%)

CSL thought the "S" in the next to last place in the sample ID was a "5". No correction requested on CSL paperwork (830/89).

Source: Data (830/89) and Legend (812/120-121)

Coastal Science Laboratory Duplicates

Sample ID	Hydrogen	Hydrogen duplicate	Percent Recovery	Oxygen	Oxygen duplicate	Percent Recovery
0906S1	-109	-109	100	-13.4	na	none
0906S2	-109	-109	100	-13.4	na	none
0906S3	-32	-33	103	-4.4	na	none
0906S4	-32	-33	103	-4.4	na	none

na = not analyzed
Source: Data (830/89) and Legend (812/120-121)

CNWRA Blind Suplicates - procument plan acceptance data

Well	Hydrogen			Oxygen		
	Sample	Duplicate	% Recovery	Sample	Duplicate	% Recovery
NC-EWDP-13P-0906-S-FUA	-109	-109	100	-13.4	-13.4	100
Lab tap water blank	-32	-32	100	-4.4	-4.4	100

Source: Data (830/89) and Legend (812/120-121)

100% (4/4) CNWRA dups within plus/minus 5%

Results accepted based on meeting criteria identified in procurement plan attached to purchase requisition # 07001511 (PO 7869825) EDS electronic file. Completed procurement plan sent to division QA per QAP-016 procedure.

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Results from MiniSonde Multiparameter Probe Analyses from Sept 2006 NC-EWDP Groundwater Sample Event

Results documented by Bradley Werling

Data collected by Miriam Juckett and Marla Roberts

Initial Entries for Sept 2006 NC-EWDP Sampling Event: 811/110-112 and 333/76-80

Minisonde results from the Sept 2006 NC-EWDP sampling event were already documented (SN 333/77) by manually recording the results observed on the Surveyor4 data display unit during the sampling. The following results come from a file stored in the Surveyor4 data unit that collected data at 30 second intervals for about 10 minutes. The relevant information is contained in the header information for each file. Latitude, longitude, and altitude information is not correct. The antenna was not connected to the system and no attempt was made to collect this information. This is also true for the latitude, longitude, and altitude information recorded from the May 2004 and September 2005 sampling events (see 733/124-127).

Only one well was sampled by CNWRA personnel during the Sept 2006: NC-EWDP-13P

11-16-06 BAW

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MiniSonde results from stored file for well NC-EWDP-13P from Sept 2006 sampling event.

Log File Name : 13P092806
Setup Date (MMDDYY) : 092806
Setup Time (HHMMSS) : 154730
Starting Date (MMDDYY) : 092806
Starting Time (HHMMSS) : 155000
Stopping Date (MMDDYY) : 092806
Stopping Time (HHMMSS) : 160000
Interval (HHMMSS) : 000030
Warmup (HHMMSS) : 000030

Date MMDDYY	Time HHMMSS	IBVSvr4a Volts	Temp C	BPSvr4a mmHg	Latitude DMS	Longitud DMS	SpCond µS/cm	pH	ORP mV	DO mg/l	DO% Sat	Altitude feet
9/28/2006	15:50:00	7.7	29.55	685.8	N 40ø26'57.2"	W104ø59'57.0"	640.5	7.33	266	5.66	82.3	4975
9/28/2006	15:50:30	7.7	29.66	685.5	N 40ø26'57.2"	W104ø59'57.0"	649.1	7.5	265	5.54	80.8	4975
9/28/2006	15:51:00	7.7	29.72	685.8	N 40ø26'57.2"	W104ø59'57.0"	643.9	7.5	265	5.18	75.7	4975
9/28/2006	15:51:30	7.7	29.7	685.7	N 40ø26'57.2"	W104ø59'57.0"	641.3	7.5	265	5.08	74.2	4975
9/28/2006	15:52:00	7.7	29.7	685.7	N 40ø26'57.2"	W104ø59'57.0"	645	7.5	265	4.93	72	4975
9/28/2006	15:52:30	7.7	29.6	685.7	N 40ø26'57.2"	W104ø59'57.0"	646.6	7.5	265	5.11	74.5	4975
9/28/2006	15:53:00	7.7	29.4	685.5	N 40ø26'57.2"	W104ø59'57.0"	648.7	7.5	266	5.06	73.4	4975
9/28/2006	15:53:30	7.7	29.46	685.4	N 40ø26'57.2"	W104ø59'57.0"	644.4	7.5	267	5.04	73.3	4975
9/28/2006	15:54:00	7.7	29.53	685.3	N 40ø26'57.2"	W104ø59'57.0"	645.4	7.5	268	5.02	73	4975
9/28/2006	15:54:30	7.7	29.53	685.3	N 40ø26'57.2"	W104ø59'57.0"	646.2	7.5	268	5.03	73.2	4975
9/28/2006	15:55:00	7.7	29.54	685.1	N 40ø26'57.2"	W104ø59'57.0"	654.1	7.5	269	5.04	73.3	4975
9/28/2006	15:55:30	7.7	29.54	685.1	N 40ø26'57.2"	W104ø59'57.0"	655.7	7.5	269	5.03	73.2	4975
9/28/2006	15:56:00	7.7	29.57	685.4	N 40ø26'57.2"	W104ø59'57.0"	656.2	7.5	270	5.03	73.2	4975
9/28/2006	15:56:30	7.7	29.56	685	N 40ø26'57.2"	W104ø59'57.0"	657	7.5	270	5.04	73.4	4975
9/28/2006	15:57:00	7.7	29.5	685.7	N 40ø26'57.2"	W104ø59'57.0"	655.7	7.5	271	5.06	73.6	4975
9/28/2006	15:57:30	7.7	29.53	685.1	N 40ø26'57.2"	W104ø59'57.0"	658.2	7.5	271	5.02	73	4975
9/28/2006	15:58:00	7.7	29.55	685.4	N 40ø26'57.2"	W104ø59'57.0"	654	7.5	272	5.02	73.1	4975
9/28/2006	15:58:30	7.7	29.53	685.4	N 40ø26'57.2"	W104ø59'57.0"	635.8	7.5	272	5.02	73	4975
9/28/2006	15:59:00	7.7	29.54	684.9	N 40ø26'57.2"	W104ø59'57.0"	615.2	7.5	273	5.06	73.7	4975
9/28/2006	15:59:30	7.7	29.49	685.4	N 40ø26'57.2"	W104ø59'57.0"	617.8	7.5	274	5.08	73.8	4975
9/28/2006	16:00:00	7.7	29.45	685.1	N 40ø26'57.2"	W104ø59'57.0"	614.9	7.5	274	5.06	73.5	4975

Recovery finished at 111606 144430

01 DEC 06 BAW

Preparation of Sodium Persulfate Solution for Inorganic Carbon Analyses

Bradley Werling will perform this task

Objective
To prepare sodium sulfate solution needed for inorganic carbon analyses

Target Concentration: 10% persulfate and 5% phosphoric acid

Reagents
Type 1 water (Barnstead/Thermolyne model D11901 serial # 1190010979691)
Sodium Persulfate (Acros 20202 lot # B0104212)
Phosphoric acid (Fisher A242-4 lot # 001815) ACS grade

Equipment
Mettler Toledo XP205DR balance (serial # 1126461033)

Supplies
Weigh boat
Spatula
250 mL graduated cylinder
10mL adjustable pipet with tip
250mL polycarbonate (pc) bottle

Procedure

A weigh boat was tared on the balance. About 25g of sodium persulfate was carefully transferred to a weigh boat and the mass was recorded. The sodium persulfate was transferred into a 250mL pc square bottle. A quantity of 213mL of fresh (straight from the Barnstead unit) type 1 water was measured in a 250mL graduated cylinder. Small aliquots of this water were used to rinse the weigh boat several times and the rinsate was added to the 250mL pc bottle. Then the entire remaining amount of the water was added to the pc bottle. The solution was swirled by hand to dissolve the sodium persulfate. A quantity of 9mL (10mL adjustable pipet) of phosphoric acid (labeled secondary container in acid hood) was added to the 250mL pc bottle. The solution was carefully mixed and labeled Sodium Persulfate Solution (with date, initials, and sn reference).

Source for procedure: Section 3.3 of Tekmar Dohrmann Phoenix 8000 User Manual Document Part Number 14-7045-074, Rev C, 1998.

Challange of balance (target = 20.0001g) =
start = 20.0000g
end = 20.0000g
Mass of sodium persulfate = 25.0001g

01 DEC 06 CONT BAW

Preparation of 21% Phosphoric Acid Solution for Inorganic Carbon Analyses

Bradley Werling will perform this task

Objective

To prepare a 21% phosphoric acid solution needed for inorganic carbon analyses

Reagents

Type 1 water (Barnstead/Thermolyne model D11901 SN 1190010979691)
Phosphoric acid (Fisher A242-4 lot # 001815) ACS grade

Supplies

250 mL graduated cylinder
10mL adjustable pipet with tips
500mL polycarbonate (pc) bottle

Procedure

A quantity of 188mL of fresh (straight from the Barnstead unit) type 1 water was measured in a 250mL graduated cylinder and transferred to a 500mL pc bottle. A quantity of 37mL (10mL adjustable pipet) of phosphoric acid (labeled secondary container in acid hood) was carefully added to the 500mL pc bottle. The solution carefully mixed was labeled 21% phosphoric acid (with date, initials, and sn reference).

Source for procedure: Section 3.3 of Tekmar Dohrmann Phoenix 8000 User Manual Document Part Number 14-7045-074, Rev C, 1998.

12/1/06 BW

01 DEC 06 CONT BAW

Preparation of Inorganic Carbon (IC) Standards for Inorganic Carbon Analyses

Bradley Werling will perform this task

Objective

To prepare inorganic carbon standards needed for inorganic carbon analyses

Target Concentrations: 5, 10, 20, 50, 100, and 200 ppm IC standards

Reagents

Type 1 water (Barnstead/Thermolyne model D11901 SN 1190010979691)
Sodium Carbonate anhydrous (Na_2CO_3) Fisher cat # S263-500, lot # 006077

Equipment

Mettler Toledo XP205DR balance (serial # 1126461033)

Supplies

Weigh boat
Spatula
Volumetric flasks and pipets
VOA bottles – 40mL (I-Chem T246-0040)
250mL amber bottle (I-Chem 349-0250)

Procedure

A weigh boat was tared on the balance. About 1.7650 g of sodium carbonate was carefully transferred to a weigh boat and the mass was recorded. The sodium carbonate was transferred into a 1000mL volumetric flask partially filled with fresh (straight from Barnstead unit) type I water. Small aliquots of fresh type I water were used to rinse the weigh boat several times and the rinsate was added to the 1000mL volumetric flask. Then the flask was filled to mark with fresh type I water and thoroughly mixed. A 250mL aliquot of the 200 ppm stock solution was transferred into a 250mL amber glass bottle (minimal headspace) and labeled 200 ppm IC Stock Soln 1 (also with date, initials, and sn reference). The other standards were created directly from the remaining 200 ppm solution in the 1000mL flask. The 100 ppm IC standard was prepared by transferring 100mL of

01 DEC 06 CONT BAW

200 ppm stock solution into a 200mL volumetric flask, diluting to mark with fresh type I water, and thoroughly mixing. The other standards were prepared similarly (See following table for details). Four aliquots of each of the standards were transferred (minimal headspace) into 40mL VOA bottles for use in the TOC autosampler. The four 40mL VOA bottles for each standard were labeled with the ppm – 1 (a to d), the date, intials, and sn reference). The standards were stored in the refrigerator in L106.

Table: Preparation of Inorganic Carbon Standards

IC Standard (ppm)	Vol (mL) of 200 ppm stock soln used	Final Vol (mL)	IDS for the four aliquots
200	na	na	200 -1 (a, b, c, and d)
100	100	200	100 -1 (a, b, c, and d)
50	50	200	50 -1 (a, b, c, and d)
20	20	200	20 -1 (a, b, c, and d)
10	10	200	10 -1 (a, b, c, and d)
5	5	200	5 -1 (a, b, c, and d)

Challange of balance (target = 20.0001g)
at start = 20.0000g
at end = 20.0000g
Mass of Sodium Carbonate = 1.7650 g

Procedure change: The 50mL + 100mL pipets (12/1/06 BW) were too large to fit and withdraw enough soln from the 1000mL vol flask. A 250mL amber glass bottle had enough soln transferred from the 1000mL vol flask to use for the 50mL + 100mL pipets

4 DEC ~~05~~ 06 BW 12-4-06 BAW

Preparation for Inorganic Carbon Analyses of Groundwater From Sept 2006 NC-EWDP Sampling Event

The TOC analyzer is infrequently used. I was planning to analyze a sample on 5 Dec 06 (tommarrow). I ran several cleaning cycles and one calibration curve using standards from 830/96 "series 9". No samples were run. The results of the ~~analy~~ BW 12-4-06 analyzes were not documented in this notebook. The purpose was to 1) familiarize myself with the instrument and 2) assess the instrument was working properly. Operational details will be provided in the entry on 5 Dec 06.

12-5-06 BW

5 DEC 06 BAW

Inorganic Carbon Analyses of Groundwater from Sept 2006 NC-EWDP Sampling Event

Bradley Werling will perform this task.

Instrument check and analyst familiarization conducted yesterday and documented in SN 830/97

Objective
To characterize by inorganic carbon analyses groundwater from NC-EWDP wells and aid in the investigation concerning radionuclide sorption.

Samples
NC-EWDP-13P-0906-IC-FUA-1 (811/112)

Reagents
Type 1 water (Barnstead/Thermolyne model D11901 serial # 1190010979691)
Sodium persulfate solution – SN 830/93
Phosphoric acid solution– SN 830/94
Inorganic carbon calibration standards – SN 830/96 (series b for cal curve and series c for 20ppm cal check)

Equipment
Tekmar Dohrmann Phoenix 8000 TOC Analyzer 147045000 (serial # 00343010)

Supplies
40mL amber glass vials

Conditions
Method - Inorganic carbon 20-200ppm standard method (not custom)
Calibration curve – from 5 to 200 ppm IC with 0ppm used

Procedure: followed Tekmar Dohrmann Phoenix 8000 User Manual
Document Part Number 14-7045-074, Rev C, 1998.

Calibration standards and samples removed from refrigerator (time 0850) and allowed to warm up before calibration curve started (time 12:30). Fresh (straight from unit) type 1 water was used for 0ppm standards and reservoir bottle (time 11:05). Two series (six reps per series from water reservoir) of cleaning cycles and one series (six reps per series from one 40mL vial) of trial 0 ppm standards were run before the calibration curve was run. The cleaning and trial 0ppm data will not be included in the results. Calibration points included 0, 5, 10, 20, 50, 100, and 200ppm IC. Standards run in triplicate from single vials. The blank at the end of the calibration curve consisted of 6 reps from the water reservoir. A 0ppm std (3 reps for carryover check) was run after the samples and before a 20ppm std (3 reps for cal check).

6 DEC 06 BAW

Results of Inorganic Carbon Analyses of Groundwater from the Sept 2006 NC-EWDP Sampling Event

Bradley Werling will perform this task

Initial Entry for Inorganic Carbon (IC) analyses: 830/98

Objective
To characterize by inorganic carbon analyses groundwater from NC-EWDP wells and aid in the investigation concerning radionuclide sorption.

Samples
NC-EWDP-13P-0906-IC-FUA-1 (811/112)

Results
Raw data from analyses is stored in a PRN file. The PRN file documented in this entry was modified since the preliminary two series of cleaning cycles and one series of trial 0ppm standards was deleted from the file (see 830/98). PRN files contain 39 columns of information. The legend for the contents of the 39 columns is found in Table 1 of this entry. Sample Ids are found in column 8. Raw data area counts are found in column 30. A summary of the results from the Sept 2006 samples was provided after the PRN file. The 0ppm standard analyzed between the sample and the 20ppm calibration check standard served as a carryover check (not a calibration check). All of the calibration standards analyzed were not used in the calibration curve on 830/104. Calibration standards at the high end of the calibration curve were limited to the greatest concentration needed to bind the highest sample concentration. In this case the 200 ppm standard was not included in the curve. The calibration curve was not generated during analyses using the data acquisition software. The curve was generated after everything was analyzed using a spreadsheet.

PRN file legend – 830/100
Modified PRN file – 830/101-103
Results summary – 830/104

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Table 1. Information contained in the PRN file

Column	Contents
1	Current PRN Version Header
2	Sample Type
3	Sample Introduction
4	Run Status
5	Message Number
6	Runtime Month, Day, Year, Hour, Minute
7	Operator Name
8	Sample ID
9	Method ID
10	Cal Curve
11	Mode
12	Range
13	Number of Reps
14	Rep Number
15	Vial Number
16	Rack ID
17	Injection Volume
18	Sparger Volume
19	Dilution Volume
20	Water Volume
21	Reagent Volume
22	Acid Volume
23	UV Presparge Time
24	IC Presparge Time
25	Mixing Time
26	Threshold
27	Baseline Volts
28	Endpoint Volts
29	Total Time
30	Initial Result
31	µg Carbon
32	ppm Carbon
33	Blank Value
34	Cal Factor
35	Caltime Month, Day, Year, Hour, Min
36	R2
37	Y-intercept
38	Data file
39	Stripchart Data File

Source: Tekmar Dohrmann Phoenix 8000 User Manual
7143 East Kemper Road, Cincinnati, Ohio
Document Part Number 14-7045-074 Rev C, 1998

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Modified PRN file for Sept 2006 NC-EWDP Groundwater samples

1	2	3	4	5	6	7	8	9	10
~~v2.0	3	1	Done	0	12/5/2006	12:31	USER1	0 ppm IC	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	3	1	Done	0	12/5/2006	12:34	USER1	0 ppm IC	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	3	1	Done	0	12/5/2006	12:37	USER1	0 ppm IC	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	3	1	Done	0	12/5/2006	12:41	USER1	5 ppm IC	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	3	1	Done	0	12/5/2006	12:44	USER1	5 ppm IC	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	3	1	Done	0	12/5/2006	12:47	USER1	5 ppm IC	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	3	1	Done	0	12/5/2006	12:51	USER1	10 ppm IC	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	3	1	Done	0	12/5/2006	12:55	USER1	10 ppm IC	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	3	1	Done	0	12/5/2006	12:58	USER1	10 ppm IC	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	3	1	Done	0	12/5/2006	13:02	USER1	20 ppm IC	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	3	1	Done	0	12/5/2006	13:06	USER1	20 ppm IC	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	3	1	Done	0	12/5/2006	13:09	USER1	20 ppm IC	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	3	1	Done	0	12/5/2006	13:14	USER1	50 ppm IC	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	3	1	Done	0	12/5/2006	13:18	USER1	50 ppm IC	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	3	1	Done	0	12/5/2006	13:21	USER1	50 ppm IC	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	3	1	Done	0	12/5/2006	13:26	USER1	100 ppm IC	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	3	1	Done	0	12/5/2006	13:30	USER1	100 ppm IC	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	3	1	Done	0	12/5/2006	13:34	USER1	100 ppm IC	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	3	1	Done	0	12/5/2006	13:39	USER1	200 ppm IC	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	3	1	Done	0	12/5/2006	13:43	USER1	200 ppm IC	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	3	1	Done	0	12/5/2006	13:48	USER1	200 ppm IC	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	10	1	Done	0	12/5/2006	13:51	USER1	Blank	Blank IC Ranges 3 4 & 5	IC20ppm5
~~v2.0	10	1	Done	0	12/5/2006	13:53	USER1	Blank	Blank IC Ranges 3 4 & 5	IC20ppm5
~~v2.0	10	1	Done	0	12/5/2006	13:55	USER1	Blank	Blank IC Ranges 3 4 & 5	IC20ppm5
~~v2.0	10	1	Done	0	12/5/2006	13:58	USER1	Blank	Blank IC Ranges 3 4 & 5	IC20ppm5
~~v2.0	10	1	Done	0	12/5/2006	14:00	USER1	Blank	Blank IC Ranges 3 4 & 5	IC20ppm5
~~v2.0	10	1	Done	0	12/5/2006	14:02	USER1	Blank	Blank IC Ranges 3 4 & 5	IC20ppm5
~~v2.0	0	1	Done	0	12/5/2006	14:07	USER1	13P	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	0	1	Done	0	12/5/2006	14:11	USER1	13P	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	0	1	Done	0	12/5/2006	14:14	USER1	13P	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	0	1	Done	0	12/5/2006	14:18	USER1	IC 0 ppm	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	0	1	Done	0	12/5/2006	14:21	USER1	IC 0 ppm	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	0	1	Done	0	12/5/2006	14:24	USER1	IC 0 ppm	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	0	1	Done	0	12/5/2006	14:28	USER1	IC 20 ppm	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	0	1	Done	0	12/5/2006	14:32	USER1	IC 20 ppm	IC Range 20 - 200 ppm C	IC20ppm5
~~v2.0	0	1	Done	0	12/5/2006	14:35	USER1	IC 20 ppm	IC Range 20 - 200 ppm C	IC20ppm5

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Modified PRN file for Sept 2006 NC-EWDP Groundwater Samples - CONT

12-6-06 BAW

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
2	2	3	1	2	120506A	0.5	0	0	5	0	0.5	0	10	0	1	7.924
2	2	3	2	2	120506A	0.5	0	0	5	0	0.5	0	10	0	1	7.894
2	2	3	3	2	120506A	0.5	0	0	5	0	0.5	0	10	0	1	7.932
2	2	3	1	3	120506A	0.5	0	0	5	0	0.5	0	10	0	1	7.907
2	2	3	2	3	120506A	0.5	0	0	5	0	0.5	0	10	0	1	7.95
2	2	3	3	3	120506A	0.5	0	0	5	0	0.5	0	10	0	1	7.915
2	2	3	1	4	120506A	0.5	0	0	5	0	0.5	0	10	0	1	7.921
2	2	3	2	4	120506A	0.5	0	0	5	0	0.5	0	10	0	1	7.958
2	2	3	3	4	120506A	0.5	0	0	5	0	0.5	0	10	0	1	7.977
2	2	3	1	5	120506A	0.5	0	0	5	0	0.5	0	10	0	1	7.926
2	2	3	2	5	120506A	0.5	0	0	5	0	0.5	0	10	0	1	7.982
2	2	3	3	5	120506A	0.5	0	0	5	0	0.5	0	10	0	1	7.972
2	2	3	1	6	120506A	0.5	0	0	5	0	0.5	0	10	0	1	8.007
2	2	3	2	6	120506A	0.5	0	0	5	0	0.5	0	10	0	1	8.123
2	2	3	3	6	120506A	0.5	0	0	5	0	0.5	0	10	0	1	8.092
2	2	3	1	7	120506A	0.5	0	0	5	0	0.5	0	10	0	1	8.025
2	2	3	2	7	120506A	0.5	0	0	5	0	0.5	0	10	0	1	8.205
2	2	3	3	7	120506A	0.5	0	0	5	0	0.5	0	10	0	1	8.208
2	2	3	1	8	120506A	0.5	0	0	5	0	0.5	0	10	0	1	8.157
2	2	3	2	8	120506A	0.5	0	0	5	0	0.5	0	10	0	1	8.442
2	2	3	3	8	120506A	0.5	0	0	5	0	0.5	0	10	0	1	8.442
2	2	6	1	1001	120506A	0	0	0	5	0	0.5	0	10	0	0.5	8.292
2	2	6	2	1001	120506A	0	0	0	5	0	0.5	0	10	0	0.5	8.029
2	2	6	3	1001	120506A	0	0	0	5	0	0.5	0	10	0	0.5	7.937
2	2	6	4	1001	120506A	0	0	0	5	0	0.5	0	10	0	0.5	7.937
2	2	6	5	1001	120506A	0	0	0	5	0	0.5	0	10	0	0.5	7.929
2	2	6	6	1001	120506A	0	0	0	5	0	0.5	0	10	0	0.5	7.888
2	2	3	1	9	120506A	0.5	0	0	5	0	0.5	0	10	0	1	7.902
2	2	3	2	9	120506A	0.5	0	0	5	0	0.5	0	10	0	1	8.02
2	2	3	3	9	120506A	0.5	0	0	5	0	0.5	0	10	0	1	8.06
2	2	3	1	10	120506A	0.5	0	0	5	0	0.5	0	10	0	1	7.987
2	2	3	2	10	120506A	0.5	0	0	5	0	0.5	0	10	0	1	7.882
2	2	3	3	10	120506A	0.5	0	0	5	0	0.5	0	10	0	1	7.834
2	2	3	1	11	120506A	0.5	0	0	5	0	0.5	0	10	0	1	7.819
2	2	3	2	11	120506A	0.5	0	0	5	0	0.5	0	10	0	1	7.857
2	2	3	3	11	120506A	0.5	0	0	5	0	0.5	0	10	0	1	7.861

6 DEC 06 CONT BAW

Modified PRN file for Sept 2006 NC-EWDP Groundwater Samples - CONT

28	29	30	31	32	33	34	35	36	37	38	39
8.919	59	63648	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051230
8.89	59	68218	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051232
8.926	59	67706	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051235
8.902	87	724104	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051239
8.949	86	709359	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051242
8.91	86	717766	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051245
8.916	95	1360303	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051249
8.956	95	1367558	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051252
8.97	94	1355679	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051256
8.925	104	2695503	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051300
8.978	102	2709739	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051303
8.971	103	2704880	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051307
9.004	117	6563536	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051311
9.119	116	6711056	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051315
9.087	117	6760393	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051319
9.022	133	13579891	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051323
9.205	130	13916875	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051327
9.202	129	13509643	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051331
9.156	160	28763996	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051336
9.44	149	28654978	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051340
9.44	150	29188645	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051345
8.789	67	165179	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051349
8.526	70	123374	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051352
8.437	71	112940	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051354
8.432	70	104471	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051356
8.429	71	99934	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051359
8.387	70	98805	0	0	0	0.00E+00	1/1/1970 0:00	0	0	12051211	12051401
8.898	121	7154503	29.3893	58.7786	101070	2.40E+05	10/17/2005 16:54	0	0	12051211	12051404
9.019	118	7193836	29.5532	59.1064	101070	2.40E+05	10/17/2005 16:54	0	0	12051211	12051408
9.055	117	7209897	29.6201	59.2402	101070	2.40E+05	10/17/2005 16:54	0	0	12051211	12051412
8.978	65	141935	0.1703	0.3405	101070	2.40E+05	10/17/2005 16:54	0	0	12051211	12051416
8.879	65	112014	0.0456	0.0912	101070	2.40E+05	10/17/2005 16:54	0	0	12051211	12051419
8.832	65	106312	0.0218	0.0437	101070	2.40E+05	10/17/2005 16:54	0	0	12051211	12051422
8.817	105	2657267	10.6508	21.3016	101070	2.40E+05	10/17/2005 16:54	0	0	12051211	12051425
8.853	104	2697609	10.8189	21.6378	101070	2.40E+05	10/17/2005 16:54	0	0	12051211	12051429
8.858	104	2704638	10.8482	21.6964	101070	2.40E+05	10/17/2005 16:54	0	0	12051211	12051433

06 DEC 06 CONT BAW

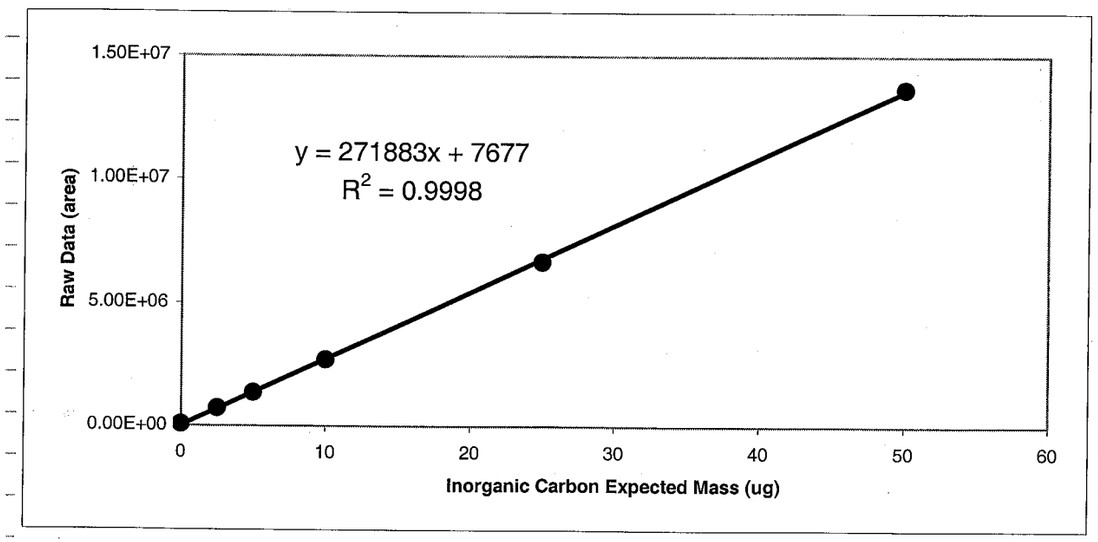
Inorganic Carbon (IC) Analysis
NC-EWDP groundwater from Sep 2006 sampling event
Method - 20 ppm to 200 ppm IC (standard)

IC Standard Data

IC Std (ppm)	IC expected mass (ug)	Raw Data rep 1	rep 2	rep 3	Raw Data Ave
0	0	63648	68218	67706	66524
5	2.5	724104	709359	717766	717076
10	5	1360303	1367558	1355679	1361180
20	10	2695503	2709739	2704880	2703374
50	25	6563536	6711056	6760393	6678328
100	50	13579891	13916875	13509643	13668803
200*	100	28763996	28654978	29188645	28869206
Blank (last 3)	0	104471	99934	98805	101070

*200 ppm not used since no sample ppm was greater than 100 ppm

IC Calibration Curve



IC Sample Data

Sample ID	Raw Data rep 1	rep 2	rep 3	Raw Data Ave	mass (ug) IC	conc # (ppm)
13P	7154503	7193836	7209897	7186079	26.1	52.1
0 ppm std*	141935	112014	106312	120087	0.41	0.83
20 ppm std*	2657267	2697609	2704638	2686505	9.9	19.7

* calculated using y-intercept instead of average of last 3 blanks
\# Calculated by dividing the mass by the volume of sample (0.5mL)

BW 12-6-06

8 DEC 06 BAW

Div 01 Anion Results for Select 19PB (w + w/o calcite) and 22PC (w + w/o calcite) Phase 2 (adjusting initial ref soln pH) Experimental Solns

Initial Entry for sorption experiment: 811/78

Samples: Total of 14 anion
8 select (not all) experimental solutions
- 2 using 19PB sonic core composite
- 2 using 19PB sonic core composite w/o calcite
- 2 using 22PC sonic core composite
- 2 using 22PC sonic core composit w/o calcite
4 UTSA samples
2 Anion QA samples (duplicates)

CNWRA Sample Collection: 811/85-6
Sample ID Legend (ALL): 811/87
Note: CNWRA anion samples were diluted but the UTSA anions, All cations, all QAs were not diluted
Masses for CNWRA anion sample dilution factors: 811/88
QA sample prep and target concentration: 811/60
Note QA soln previously analyzed (in duplicate) with phase 1 experiment - see 830/84
Delivery + Chain of Custody: 811/89 and 92-93

Following the raw data is
- QA info and recoveries
- Dilution factor info and calculations
- Reorganized Div 01 results
- Calculated concentrations in original solutions

BW 12-8-06

8 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19WT-9A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 286161

Client: Division 20

Date Received: 09/14/06

Project No.: 06002.01.242

SRR: 29770

Task Order: 060915-3

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	2.08	0.1	mg/L	EPA 300
Fluoride	0.344	0.1	mg/L	EPA 300
Nitrate-N	6.70	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	6.94	0.1	mg/L	EPA 300

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19WT-10A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 286160

Client: Division 20

Date Received: 09/14/06

Project No.: 06002.01.242

SRR: 29770

Task Order: 060915-3

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	2.00	0.1	mg/L	EPA 300
Fluoride	0.349	0.1	mg/L	EPA 300
Nitrate-N	6.80	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	7.08	0.1	mg/L	EPA 300

8 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19WOT-9A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 286159

Client: Division 20

Date Received: 09/14/06

Project No.: 06002.01.242

SRR: 29770

Task Order: 060915-3

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	2.10	0.1	mg/L	EPA 300
Fluoride	0.359	0.1	mg/L	EPA 300
Nitrate-N	6.67	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	7.04	0.1	mg/L	EPA 300

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19WOT-10A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 286158

Client: Division 20

Date Received: 09/14/06

Project No.: 06002.01.242

SRR: 29770

Task Order: 060915-3

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	1.96	0.1	mg/L	EPA 300
Fluoride	0.344	0.1	mg/L	EPA 300
Nitrate-N	6.39	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	6.84	0.1	mg/L	EPA 300

8 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22WT-9A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 286165

Client: Division 20

Date Received: 09/14/06

Project No.: 06002.01.242

SRR: 29770

Task Order: 060915-3

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	2.13	0.1	mg/L	EPA 300
Fluoride	0.353	0.1	mg/L	EPA 300
Nitrate-N	6.83	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	7.08	0.1	mg/L	EPA 300

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22WT-10A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 286164

Client: Division 20

Date Received: 09/14/06

Project No.: 06002.01.242

SRR: 29770

Task Order: 060915-3

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	2.14	0.1	mg/L	EPA 300
Fluoride	0.355	0.1	mg/L	EPA 300
Nitrate-N	6.79	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	7.07	0.1	mg/L	EPA 300

8 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22WOT-9A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 286163

Client: Division 20

Date Received: 09/14/06

Project No.: 06002.01.242

SRR: 29770

Task Order: 060915-3

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	2.01	0.1	mg/L	EPA 300
Fluoride	0.330	0.1	mg/L	EPA 300
Nitrate-N	6.62	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	7.05	0.1	mg/L	EPA 300

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22WOT-10A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 286162

Client: Division 20

Date Received: 09/14/06

Project No.: 06002.01.242

SRR: 29770

Task Order: 060915-3

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	2.05	0.1	mg/L	EPA 300
Fluoride	0.322	0.1	mg/L	EPA 300
Nitrate-N	6.55	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	6.94	0.1	mg/L	EPA 300

08 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: AD-A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 286166

Client: Division 20

Date Received: 09/14/06

Project No.: 06002.01.242

SRR: 29770

Task Order: 060915-3

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	1.22	0.1	mg/L	EPA 300
Chloride	262	5	mg/L	EPA 300
Fluoride	0.333	0.1	mg/L	EPA 300
Nitrate-N	<0.1	0.1	mg/L	EPA 300
Nitrite-N	<5	5	mg/L	EPA 300
Phosphate-P	<5	5	mg/L	EPA 300
Sulfate	1590	10	mg/L	EPA 300

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: LO-A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 286168

Client: Division 20

Date Received: 09/14/06

Project No.: 06002.01.242

SRR: 29770

Task Order: 060915-3

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	0.209	0.1	mg/L	EPA 300
Chloride	48.9	5	mg/L	EPA 300
Fluoride	0.716	0.1	mg/L	EPA 300
Nitrate-N	<0.1	0.1	mg/L	EPA 300
Nitrite-N	<5	5	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	521	5	mg/L	EPA 300

08 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: TM-A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 286169

Client: Division 20

Date Received: 09/14/06

Project No.: 06002.01.242

SRR: 29770

Task Order: 060915-3

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	2.43	0.1	mg/L	EPA 300
Chloride	631	5	mg/L	EPA 300
Fluoride	0.523	0.1	mg/L	EPA 300
Nitrate-N	<0.1	0.1	mg/L	EPA 300
Nitrite-N	<5	5	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	439	5	mg/L	EPA 300

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: HT-A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 286167

Client: Division 20

Date Received: 09/14/06

Project No.: 06002.01.242

SRR: 29770

Task Order: 060915-3

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	0.798	0.1	mg/L	EPA 300
Chloride	199	5	mg/L	EPA 300
Fluoride	1.13	0.1	mg/L	EPA 300
Nitrate-N	<0.1	0.1	mg/L	EPA 300
Nitrite-N	<5	5	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	184	5	mg/L	EPA 300

08DEC06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 1922-3A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 286156

Client: Division 20

Date Received: 09/14/06

Project No.: 06002.01.242

SRR: 29770

Task Order: 060915-3

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	8.22	0.1	mg/L	EPA 300
Chloride	3.97	0.1	mg/L	EPA 300
Fluoride	1.97	0.1	mg/L	EPA 300
Nitrate-N	1.74	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	4.04	0.1	mg/L	EPA 300
Sulfate	8.28	0.1	mg/L	EPA 300

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 1922-4A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 286157

Client: Division 20

Date Received: 09/14/06

Project No.: 06002.01.242

SRR: 29770

Task Order: 060915-3

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	8.27	0.1	mg/L	EPA 300
Chloride	4.00	0.1	mg/L	EPA 300
Fluoride	1.97	0.1	mg/L	EPA 300
Nitrate-N	1.75	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	4.02	0.1	mg/L	EPA 300
Sulfate	8.29	0.1	mg/L	EPA 300

08DEC06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
DUPLICATE SUMMARY

Sample ID: 1922-3A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 286156D

Client: Division 20

Date Received: 09/14/06

Project No.: 06002.01.242

SRR: 29770

Task Order: 060915-3

Method: IC - EPA 300			
Analysis	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD
Bromide	8.22	8.28	0.73%
Chloride	3.97	4.01	1.00%
Fluoride	1.97	1.99	1.01%
Nitrate-N	1.74	1.75	0.57%
Nitrite-N	<0.1	<0.1	0.00%
Phosphate-P	4.04	3.99	1.25%
Sulfate	8.28	8.24	0.48%

SOUTHWEST RESEARCH INSTITUTE
MATRIX SPIKE SUMMARY

Sample ID: 1922-3A

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 286156S

Client: Division 20

Date Received: 09/14/06

Project No.: 06002.01.242

SRR: 29770

Task Order: 060915-3

Method: IC - EPA 300				
Analysis	Sample Result (mg/L)	Spike Result (mg/L)	Spike Added (mg/L)	Recovery
Bromide	8.22	12.3	4.00	102%
Chloride	3.97	5.99	2.00	101%
Fluoride	1.97	2.96	1.00	99.0%
Nitrate-N	1.74	2.62	0.904	97.3%
Nitrite-N	<0.1	1.04	1.06	98.1%
Phosphate-P	4.04	5.90	1.96	94.9%
Sulfate	8.28	12.3	4.00	101%

08DEC06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
LABORATORY CONTROL SAMPLE

Sample ID
LCS

Lab Name: Southwest Research Institute
Lab Code: SwRI
Matrix: Water
Lab System ID: NA

Client: Division 20
Date Received: NA
Project No.: 06002.01.242
SRR: 29770
Task Order: 060915-3

Analysis	Sample Result	True Value	Recovery	Units
Bromide	422	400	106%	mg/L
Chloride	212	200	106%	mg/L
Fluoride	104	100	104%	mg/L
Nitrate-N	92.7	90.4	103%	mg/L
Nitrite-N	109	106	103%	mg/L
Phosphate-P	200	196	102%	mg/L
Sulfate	410	400	103%	mg/L

NA - Not Applicable

SOUTHWEST RESEARCH INSTITUTE
BLANK SUMMARY

Sample ID
PB

Lab Name: Southwest Research Institute
Lab Code: SwRI
Matrix: Water
Lab System ID: NA

Client: Division 20
Date Received: NA
Project No.: 06002.01.242
SRR: 29770
Task Order: 060915-3

Analysis	Sample Result	Reporting Limit	Units
Bromide	<0.1	0.1	mg/L
Chloride	<0.1	0.1	mg/L
Fluoride	<0.1	0.1	mg/L
Nitrate-N	<0.1	0.1	mg/L
Nitrite-N	<0.1	0.1	mg/L
Phosphate-P	<0.1	0.1	mg/L
Sulfate	<0.1	0.1	mg/L

NA - Not Applicable

08 DEC 06 CONT BAW

Table Converting QA Target Concentrations Expressed in Molecules to Elements

Species	Target Conc (~~g~~ µg/mL) BW 12-21-06	Conversion Factor (mutiplication factor)	Species	Target Conc (~~g~~ µg/mL) 12-21-06 BW
Bromide	8	na	Bromide	8
Chloride	4	na	Chloride	4
Fluoride	2	na	Fluoride	2
Nitrate as NO3	8	0.2259	Nitrate as N	1.81
Nitrite as NO2	na	na	Nitrite as N	na
Phosphate as HPO4	12	0.3227	Phospahte as P	3.87
Sulfate as SO4	8	na	Sulfate as SO4	8

N = 14.0067g/mol, NO2 = 46.0055g/mol, and NO3 = 62.0049g/mol
P = 30.974g/mol and HPO4 = 95.9793g/mol
na = not applicable
Source for target conc: 811/60

Table Comparing Anion Target and Div 01 Results for Blind QA Standard 1922-3A

Species	Target Conc (~~g~~ µg/mL) BW 12-21-06	Div 01 Conc (mg/L)	Percent Recovery
Bromide	8	8.22	103
Chloride	4	3.97	99.3
Fluoride	2	1.97	98.5
Nitrate as N	1.81	1.74	96.3
Nitrite as N	na	<0.1	na
Phospahte as P	3.87	4.04	104
Sulfate as SO4	8	8.28	104

na = not applicable
Source for target conc: 811/60 (see 811/62 for reference)
Source for Div 01 results: 830/112

Table Comparing Anion Target and Div 01 Results for Blind QA Standard 1922-4A

Species	Target Conc (~~g~~ µg/mL) 12-21-06 BW	Div 01 Conc (mg/L)	Percent Recovery
Bromide	8	8.27	103
Chloride	4	4.00	100
Fluoride	2	1.97	98.5
Nitrate as N	1.81	1.75	96.8
Nitrite as N	na	<0.1	na
Phospahte as P	3.87	4.02	104
Sulfate as SO4	8	8.29	104

na = not applicable
Source for target conc: 811/60 (see 811/62 for reference)
Source for Div 01 results: 830/112

08 DEC 06 CONT BAW

Table Comparing Anion Div 01 Results of Duplicate Blind Standards 1922-3A and 1922-4A

Species	1922-3A Conc (mg/L)	1922-4A Conc (mg/L)	Percent Difference
Bromide	8.22	8.27	0.6
Chloride	3.97	4.00	0.8
Fluoride	1.97	1.97	0.0
Nitrate as N	1.74	1.75	0.6
Nitrite as N	<0.1	<0.1	na
Phospahte as P	4.04	4.02	-0.5
Sulfate as SO4	8.28	8.29	0.1

na = not applicable
Source for Div 01 results: 830/112

Table Comparing QA Standard Reanalyses (same QA solution previously analyzed with phase 1 experiment)

Species	Phase 1 analyses		Phase 2 analyses	
	1922-5A Conc (mg/L)	1922-6A Conc (mg/L)	1922-3A Conc (mg/L)	1922-4A Conc (mg/L)
Bromide	7.96	8.13	8.22	8.27
Chloride	3.80	4.01	3.97	4.00
Fluoride	1.82	1.85	1.97	1.97
Nitrate as N	1.68	1.69	1.74	1.75
Nitrite as N	<0.1	<0.1	<0.1	<0.1
Phospahte as P	3.85	3.90	4.04	4.02
Sulfate as SO4	8.10	8.11	8.28	8.29

Source for phase 1 Div 01 results 830/77
Source for phase 2 Div 01 results 830/112

Table of Mass Data Used to Calculate Anion Dilution Factors for 19 & 22 Phase 2 Sorption Experiments

GED Sample ID	Div 01 Sample ID	Mass (g) of Empty Bottle	Mass (g) of Bottle + Sample	Mass (g) of Bottle + Sample + Water
19W-T9	19WT-9A	8.33708	13.27239	28.52252*
19W-T10	19WT-10A	8.17996	13.28418	28.54693
19WO-T9	19WOT-9A	8.21071	13.31655	28.57808
19WO-T10	19WOT10A	8.19172	13.02146	28.29223
22W-T9	22WT-9A	8.19390	13.29769	28.56176
22W-T10	22WT-10A	8.31374	13.40311	28.60829
22WO-T9	22WOT-9A	8.16607	13.23915	28.53091
22WO-T10	22WOT-10A	8.24694	13.20025	28.46150

Data Source: 811/88
* originally documented in 811/88 as 28.522252 (balance only reads to 5 decimal places)

08 DEC 06 CONT BAW

Table of Calculated Anion Dilution Factors for 19 & 22 Phase 2 Sorption Experiments

GED Sample ID	Div 01 Sample ID	Mass (g) of Sample (Exp Soln Aliquot)*1	Mass (g) of Soln (Sample + Water)*2	Dilution Factor*3
19W-T9	19WT-9A	4.93531	20.18544	4.09000
19W-T10	19WT-10A	5.10422	20.36697	3.99022
19WO-T9	19WOT-9A	5.10584	20.36737	3.98903
19WO-T10	19WOT10A	4.82974	20.10051	4.16182
22W-T9	22WT-9A	5.10379	20.36786	3.99073
22W-T10	22WT-10A	5.08937	20.29455	3.98764
22WO-T9	22WOT-9A	5.07308	20.36484	4.01430
22WO-T10	22WOT-10A	4.95331	20.21456	4.08102

*1 - Calculated by subtracting mass of bottle from mass of bottle & sample
*2 - Calculated by subtracting mass of bottle & water from mass of bottle & sample & water
*3 - Calculated by dividing mass of soln (sample + water) by the mass of sample
Source: 830/116
Note dilution factor for 19W-T9 would be 4.08995 if mass of bottle + sample + water was 28.52225 g was used (see note on 830/116)

12-13-06 BW

13 DEC 06 BAW

Table Summarizing 19 & 22 Phase 2 Div 01 Anion Results

GED Sample ID	Div 01 Sample ID	Bromide mg/L	Chloride mg/L	Fluoride mg/L	Nitrate-N mg/L	Nitrite-N mg/L	Phosphate-P mg/L	Sulfate mg/L	Diltution Factors
19W-T9	19WT-9A	<0.1	2.08	0.344	6.70	<0.1	<0.1	6.94	4.09000
19W-T10	19WT-10A	<0.1	2.00	0.349	6.80	<0.1	<0.1	7.08	3.99022
19WO-T9	19WOT-9A	<0.1	2.10	0.359	6.67	<0.1	<0.1	7.04	3.98903
19WO-T10	19WOT-10A	<0.1	1.96	0.344	6.39	<0.1	<0.1	6.84	4.16182
22W-T9	22WT-9A	<0.1	2.13	0.353	6.83	<0.1	<0.1	7.08	3.99073
22W-T10	22WT-10A	<0.1	2.14	0.355	6.79	<0.1	<0.1	7.07	3.98764
22WO-T9	22WOT-9A	<0.1	2.01	0.330	6.62	<0.1	<0.1	7.05	4.01430
22WO-T10	22WOT-10A	<0.1	2.05	0.322	6.55	<0.1	<0.1	6.94	4.08102
na (UTSA)	AD-A	1.22	262	0.333	<0.1	<5	<5	1590	1
na (UTSA)	HT-A	0.798	199	1.13	<0.1	<5	<0.1	184	1
na (UTSA)	LO-A	0.209	48.9	0.716	<0.1	<5	<0.1	521	1
na (UTSA)	TM-A	2.43	631	0.523	<0.1	<5	<0.1	439	1
QA-anion1	1922-3A	8.22	3.97	1.97	1.74	<0.1	4.04	8.28	1
QA-anion2	1922-4A	8.27	4.00	1.97	1.75	<0.1	4.02	8.29	1

Source for results: 830/106-112
Source for dilution factors: 830/117
Note: Samples (except QA & UTSA) delivered to Div 01 were diluted (830/105 also 811/88)
na = not applicable

12-13-06 BAW

13 DEC 06 CONT BAW

Table Summarizing 19 & 22 Phase 2 Anion Concentrations in Original Experimental Solns

GED Sample ID	Div 01 Sample ID	Bromide mg/L	Chloride mg/L	Fluoride mg/L	Nitrate-N mg/L	Nitrite-N mg/L	Phosphate-P mg/L	Sulfate mg/L
19W-T9	19WT-9A	<0.4	8.51	1.41	27.4	<0.4	<0.4	28.4
19W-T10	19WT-10A	<0.4	7.98	1.39	27.1	<0.4	<0.4	28.3
19WO-T9	19WOT-9A	<0.4	8.38	1.43	26.6	<0.4	<0.4	28.1
19WO-T10	19WOT-10A	<0.4	8.16	1.43	26.6	<0.4	<0.4	28.5
22W-T9	22WT-9A	<0.4	8.50	1.41	27.3	<0.4	<0.4	28.3
22W-T10	22WT-10A	<0.4	8.53	1.42	27.1	<0.4	<0.4	28.2
22WO-T9	22WOT-9A	<0.4	8.07	1.32	26.6	<0.4	<0.4	28.3
22WO-T10	22WOT-10A	<0.4	8.37	1.31	26.7	<0.4	<0.4	28.3
na (UTSA)	AD-A	1.22	262	0.333	<0.1	<5	<5	1590
na (UTSA)	HT-A	0.798	199	1.13	<0.1	<5	<0.1	184
na (UTSA)	LO-A	0.209	48.9	0.716	<0.1	<5	<0.1	521
na (UTSA)	TM-A	2.43	631	0.523	<0.1	<5	<0.1	439
QA-anion1	1922-3A	8.22	3.97	1.97	1.74	<0.1	4.04	8.28
QA-anion2	1922-4A	8.27	4.00	1.97	1.75	<0.1	4.02	8.29

Calculated by multiplying Div 01 results by dilution factor (Source: 830/118)

12-13-06 BAW

13 DEC 06 CONT BAW

Div 01 Anion Results from Sept 2006
NC-EWDP Groundwater Sampling Event

Initial Entries for Sept 2006 Sampling Event:
333/76-81 and 811/110-112

Samples: Total of 4 anion
3 groundwater samples from 1 well
- NC-EWDP-13P-0906-FA
- NC-EWDP-13P-0906-FUA
- NC-EWDP-13P-0906-4FUA
1 QA standard

Field Sample collection: 811/110-112
Div 01 Aliquot prep: 811/98
~~Sample legend: 811/98~~ BW 12/13/06
Sample ID legend: 811/98
Note: "FA" sample was preserved with nitric acid (see 811/112) so anion analyses results for nitrate for this sample will include contribution from acid preservation.

QA sample prep and target concentration: 811/99
QA aliquot prep + legend: 811/100
Delivery + Chain of Custody: 811/101-102

Following the raw data is
- QA info and recoveries
- Summary results table

14 DEC 06 BW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 0906A-1

Lab Name: Southwest Research Institute
Lab Code: SwRI
Matrix: Water
Lab System ID: 287760

Client: Division 20
Date Received: 10/05/06
Project No.: 06002.01.242
SRR: 29884
Task Order: 061005-13

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.5	0.5	mg/L	EPA 300
Chloride	15.9	0.5	mg/L	EPA 300
Fluoride	1.20	0.5	mg/L	EPA 300
Nitrate-N	287	10	mg/L	EPA 300
Nitrite-N	<0.5	0.5	mg/L	EPA 300
Phosphate-P	<0.5	0.5	mg/L	EPA 300
Sulfate	77.5	0.5	mg/L	EPA 300

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 0906A-2

Lab Name: Southwest Research Institute
Lab Code: SwRI
Matrix: Water
Lab System ID: 287761

Client: Division 20
Date Received: 10/05/06
Project No.: 06002.01.242
SRR: 29884
Task Order: 061005-13

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	16.3	0.1	mg/L	EPA 300
Fluoride	1.19	0.1	mg/L	EPA 300
Nitrate-N	2.81	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	70.8	1	mg/L	EPA 300

14 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 0906A-3

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 287762

Client: Division 20

Date Received: 10/05/06

Project No.: 06002.01.242

SRR: 29884

Task Order: 061005-13

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	15.4	0.1	mg/L	EPA 300
Fluoride	1.14	0.1	mg/L	EPA 300
Nitrate-N	2.81	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	71.7	1	mg/L	EPA 300

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 0906A-4

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 287763

Client: Division 20

Date Received: 10/05/06

Project No.: 06002.01.242

SRR: 29884

Task Order: 061005-13

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	8.22	0.1	mg/L	EPA 300
Chloride	3.95	0.1	mg/L	EPA 300
Fluoride	1.99	0.1	mg/L	EPA 300
Nitrate-N	1.75	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	3.90	0.1	mg/L	EPA 300
Sulfate	8.29	0.1	mg/L	EPA 300

14 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
DUPLICATE SUMMARY

Sample ID: 0906A-1

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 287760D

Client: Division 20

Date Received: 10/05/06

Project No.: 06002.01.242

SRR: 29884

Task Order: 061005-13

Method: IC - EPA 300			
Analysis	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD
Bromide	<0.5	<0.5	0.00%
Chloride	15.9	16.0	0.63%
Fluoride	1.20	1.20	0.00%
Nitrate-N	287	283	1.40%
Nitrite-N	<0.5	<0.5	0.00%
Phosphate-P	<0.5	<0.5	0.00%
Sulfate	77.5	77.9	0.51%

SOUTHWEST RESEARCH INSTITUTE
MATRIX SPIKE SUMMARY

Sample ID: 0906A-1

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 287760S

Client: Division 20

Date Received: 10/05/06

Project No.: 06002.01.242

SRR: 29884

Task Order: 061005-13

Method: IC - EPA 300				
Analysis	Sample Result (mg/L)	Spike Result (mg/L)	Spike Added (mg/L)	Recovery
Bromide	<0.5	22.1	20.0	111%
Chloride	15.9	26.6	10.0	107%
Fluoride	1.20	6.71	5.00	110%
Nitrate-N	287	360	90.4	80.8%
Nitrite-N	<0.5	6.15	5.30	116%
Phosphate-P	<0.5	10.9	9.80	111%
Sulfate	77.5	96.5	20.0	95.0%

14 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
LABORATORY CONTROL SAMPLE

Sample ID: LCS

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.242

SRR: 29884

Task Order: 061005-13

Analysis	Sample Result	True Value	Recovery	Units
Bromide	418	400	105%	mg/L
Chloride	209	200	105%	mg/L
Fluoride	103	100	103%	mg/L
Nitrate-N	92.1	90.4	102%	mg/L
Nitrite-N	108	106	102%	mg/L
Phosphate-P	201	196	103%	mg/L
Sulfate	412	400	103%	mg/L

SOUTHWEST RESEARCH INSTITUTE
LABORATORY CONTROL SAMPLE

Sample ID: LCS

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.242

SRR: 29884

Task Order: 061005-13

Analysis	Sample Result	True Value	Recovery	Units
Bromide	------	------	------	------
Chloride	------	------	------	------
Fluoride	------	------	------	------
Nitrate-N	------	------	------	------
Nitrite-N	------	------	------	------
Phosphate-P	------	------	------	------
Sulfate	408	400	102%	mg/L

NA - Not Applicable

14 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
BLANK SUMMARY

Sample ID: PB

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.242

SRR: 29884

Task Order: 061005-13

Analysis	Sample Result	Reporting Limit	Units
Bromide	<0.1	0.1	mg/L
Chloride	<0.1	0.1	mg/L
Fluoride	<0.1	0.1	mg/L
Nitrate-N	<0.1	0.1	mg/L
Nitrite-N	<0.1	0.1	mg/L
Phosphate-P	<0.1	0.1	mg/L
Sulfate	<0.1	0.1	mg/L

SOUTHWEST RESEARCH INSTITUTE
BLANK SUMMARY

Sample ID: PB

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.242

SRR: 29884

Task Order: 061005-13

Analysis	Sample Result	Reporting Limit	Units
Bromide	------	------	------
Chloride	------	------	------
Fluoride	------	------	------
Nitrate-N	------	------	------
Nitrite-N	------	------	------
Phosphate-P	------	------	------
Sulfate	<0.1	0.1	mg/L

NA - Not Applicable

14 DEC 06 CONT BAW

Table Converting QA Target Concentrations Expressed in Molecules to Elements

Species	Target Conc ~~(g~~ µg/mL) BW 12-21-06	Conversion Factor (mutiplication factor)	Species	Target Conc ~~(g~~ µg/mL) 12-21-06 BW
Bromide	8	na	Bromide	8
Chloride	4	na	Chloride	4
Fluoride	2	na	Fluoride	2
Nitrate as NO3	8	0.2259	Nitrate as N	1.81
Nitrite as NO2	na	na	Nitrite as N	na
Phosphate as HPO4	12	0.3227	Phospahte as P	3.87
Sulfate as SO4	8	na	Sulfate as SO4	8

N = 14.0067g/mol, NO2 = 46.0055g/mol, and NO3 = 62.0049g/mol
P = 30.974g/mol and HPO4 = 95.9793g/mol
na = not applicable
Source for target conc: 811/99

Table Comparing Anion Target and Div 01 Results for Blind QA Standard 0906A-4

Species	Target Conc ~~(g~~ µg/mL) 12-21-06 BW	Div 01 Conc (mg/L)	Percent Recovery
Bromide	8	8.22	103
Chloride	4	3.95	98.8
Fluoride	2	1.99	99.5
Nitrate as N	1.81	1.75	96.8
Nitrite as N	na	<0.1	na
Phospahte as P	3.87	3.90	101
Sulfate as SO4	8	8.29	104

na = not applicable
Source for target conc: 811/99-101
Source for Div 01 results: 830/122

Table Summarizing Div 01 Anion Results for Samples from Sept 2006 NC-EWDP Groundwater Event

GED Sample ID	Div 01 Sample ID	Bromide mg/L	Chloride mg/L	Fluoride mg/L	Nitrate-N mg/L	Nitrite-N mg/L	Phosphate-P mg/L	Sulfate mg/L
NC-EWDP-13P-0906-FA*	0906A-1	<0.5	15.9	1.20	287	<0.5	<0.5	77.5
NC-EWDP-13P-0906-FUA	0906A-2	<0.1	16.3	1.19	2.81	<0.1	<0.1	70.8
NC-EWDP-13P-0906-UFUA	0906A-3	<0.1	15.4	1.14	2.81	<0.1	<0.1	71.7
Anion Std 1006	0906A-4	8.22	3.95	1.99	1.75	<0.1	3.90	8.29

Source for results: 830/106-112
*Sample preserved with nitric acid resulted in relatively high nitrate content compared to unpreserved samples. For breakdown of treatments for each sample, see 811/110-112

19 DEC 06 ~~CONT~~ BW 12-19-06 BAW

DIV 01 Cation Results for Ref Soln 19PB-4 and Select 19PB (w+w/o calcite) and 22PC (w+w/o calcite) Phase I (testing pH repeatability) Experimental Solns

Initial Entry for sorption experiment: 811/51

Samples: Total of 20 cation
16 select (not all) exp solns (4 types - 4 per type)
- Solid using 19PB sonic core composite
- Solid using 19PB sonic core composite w/o calcite
- Solid using 22PC sonic core composite
- Solid using 22PC sonic core composite w/o calcite

3 QA solns for cations ~~(triplicate)~~ BW 12-19-06 2 dups + 1 anion QA soln
1 Ref soln: 19PB-4 (811/63)
NOTE: Ref soln 19PB-3 used for experimental solns used in this exp (811/50, 51, + 53)
For 19PB-3 cation analyses, see 812/118

Sample collection: 811/61-62
Sample ID Legend: 811/63
Note: No cation samples were diluted. Anion samples were diluted (811/61-62)
QA prep: 811/60
QA ID legend: 811/63
QA target conc: 811/60
Ref soln prep: ~~800/20~~ BW 12-19-06 800/20 based on previous prep (742/27-28) + update (812/4)
Ref soln target: 812/5
BW 12-19-06
Following ~~raw~~ raw data are Ref + QA data + recoveries

19 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE

SAMPLE ANALYSIS DATA SHEET

Sample ID: 1922-1C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285418

Method: 6010B MOD, 6020 MOD

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	<0.0500	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	13.6	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	1.22	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	2.64	0.25
Selenium	<0.100	0.1
Silicon	11.3	0.2
Silver	<0.0500	0.05
Sodium	50.8	2
Strontium	<0.0500	0.05
Sulfur	9.07	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

19 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE

SAMPLE ANALYSIS DATA SHEET

Sample ID: 1922-2C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285419

Method: 6010B MOD, 6020 MOD

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	<0.0500	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	20.2	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	21.0	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	20.6	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	18.8	1.25
Selenium	<0.100	0.1
Silicon	<0.200	0.2
Silver	<0.0500	0.05
Sodium	20.1	2
Strontium	<0.0500	0.05
Sulfur	<0.250	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

19 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
1922-3C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285420

Method: 6010B MOD, 6020 MOD

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	<0.0500	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	20.0	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	20.9	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	20.5	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	19.2	1.25
Selenium	<0.100	0.1
Silicon	<0.200	0.2
Silver	<0.0500	0.05
Sodium	21.1	2
Strontium	<0.0500	0.05
Sulfur	<0.250	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

19 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
1922-4C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285421

Method: 6010B MOD, 6020 MOD

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	<0.0500	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	<0.500	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	<0.500	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	4.01	0.2
Potassium	6.06	0.5
Selenium	<0.100	0.1
Silicon	<0.200	0.2
Silver	<0.0500	0.05
Sodium	16.1	2
Strontium	<0.0500	0.05
Sulfur	2.57	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

19 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
19WT-1C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285433

Method: 6010B MOD, 6020 MOD

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.599	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	8.43	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	0.952	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	3.06	0.25
Selenium	<0.100	0.1
Silicon	11.7	0.2
Silver	<0.0500	0.05
Sodium	56.7	2
Strontium	<0.0500	0.05
Sulfur	9.44	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

19 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
19WT-2C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285435

Method: 6010B MOD, 6020 MOD

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.442	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	8.67	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	0.923	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	3.34	0.25
Selenium	<0.100	0.1
Silicon	11.8	0.2
Silver	<0.0500	0.05
Sodium	54.1	2
Strontium	<0.0500	0.05
Sulfur	9.43	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

19 DEC 06 CONT ~~CONT~~ BW 12-19-06 BAW

SOUTHWEST RESEARCH INSTITUTE

SAMPLE ANALYSIS DATA SHEET

Sample ID: 19WT-3C

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 08/25/06

Matrix: Water

Project No.: 06002.01.242

Lab System ID: 285437

SRR: 29696

Method: 6010B MOD, 6020 MOD

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.472	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	8.18	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	0.926	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	3.01	0.25
Selenium	<0.100	0.1
Silicon	11.9	0.2
Silver	<0.0500	0.05
Sodium	57.3	2
Strontium	<0.0500	0.05
Sulfur	9.43	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

19 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE

SAMPLE ANALYSIS DATA SHEET

Sample ID: 19WT-4C

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 08/25/06

Matrix: Water

Project No.: 06002.01.242

Lab System ID: 285439

SRR: 29696

Method: 6010B MOD, 6020 MOD

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.455	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	8.20	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	0.915	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	3.23	0.25
Selenium	<0.100	0.1
Silicon	11.9	0.2
Silver	<0.0500	0.05
Sodium	58.3	2
Strontium	<0.0500	0.05
Sulfur	9.49	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

19DEC06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE

SAMPLE ANALYSIS DATA SHEET

Sample ID
19WOT-5C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285425

Method: 6010B MOD, 6020 MOD

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	1.07	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.524	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	2.16	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	0.665	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	2.17	0.25
Selenium	<0.100	0.1
Silicon	14.9	0.2
Silver	<0.0500	0.05
Sodium	73.3	2
Strontium	<0.0500	0.05
Sulfur	9.39	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

19DEC06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE

SAMPLE ANALYSIS DATA SHEET

Sample ID
19WOT-6C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285427

Method: 6010B MOD, 6020 MOD

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	0.993	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.638	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	1.85	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	0.576	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	1.99	0.25
Selenium	<0.100	0.1
Silicon	14.6	0.2
Silver	<0.0500	0.05
Sodium	74.2	2
Strontium	<0.0500	0.05
Sulfur	9.57	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

19 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
19WOT-7C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285429

Method: 6010B MOD, 6020 MOD

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	0.645	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.474	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	2.26	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	0.549	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	1.67	0.25
Selenium	<0.100	0.1
Silicon	13.9	0.2
Silver	<0.0500	0.05
Sodium	75.6	2
Strontium	<0.0500	0.05
Sulfur	9.51	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

19 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
19WOT-8C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285431

Method: 6010B MOD, 6020 MOD

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	0.526	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.492	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	2.58	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	0.520	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	1.49	0.25
Selenium	<0.100	0.1
Silicon	13.3	0.2
Silver	<0.0500	0.05
Sodium	74.2	2
Strontium	<0.0500	0.05
Sulfur	9.33	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

19DEC06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE

SAMPLE ANALYSIS DATA SHEET

Sample ID
22WT-9C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285455

Method: 6010B MOD, 6020 MOD

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.454	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	8.47	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	1.36	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	3.53	0.25
Selenium	<0.100	0.1
Silicon	11.7	0.2
Silver	<0.0500	0.05
Sodium	52.9	2
Strontium	<0.0500	0.05
Sulfur	9.54	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

19DEC06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE

SAMPLE ANALYSIS DATA SHEET

Sample ID
22WT-10C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285449

Method: 6010B MOD, 6020 MOD

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.434	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	8.48	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	1.31	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	3.56	0.25
Selenium	<0.100	0.1
Silicon	11.7	0.2
Silver	<0.0500	0.05
Sodium	53.8	2
Strontium	<0.0500	0.05
Sulfur	9.48	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

19 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE

SAMPLE ANALYSIS DATA SHEET

Sample ID: 22WT-11C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285451

Method: 6010B MOD, 6020 MOD

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.477	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	8.41	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	1.35	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	3.51	0.25
Selenium	<0.100	0.1
Silicon	11.8	0.2
Silver	<0.0500	0.05
Sodium	56.6	2
Strontium	<0.0500	0.05
Sulfur	9.32	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

19 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE

SAMPLE ANALYSIS DATA SHEET

Sample ID: 22WT-12C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285453

Method: 6010B MOD, 6020 MOD

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.471	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	8.45	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	1.33	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	3.60	0.25
Selenium	<0.100	0.1
Silicon	11.7	0.2
Silver	<0.0500	0.05
Sodium	56.5	2
Strontium	<0.0500	0.05
Sulfur	9.32	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

19 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
22WOT-13C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285441

Method: 6010B MOD, 6020 MOD

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.512	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	3.46	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	0.675	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	1.80	0.25
Selenium	<0.100	0.1
Silicon	12.6	0.2
Silver	<0.0500	0.05
Sodium	68.2	2
Strontium	<0.0500	0.05
Sulfur	9.39	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

19 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID
22WOT-14C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285443

Method: 6010B MOD, 6020 MOD

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.454	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	3.54	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	0.698	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	1.74	0.25
Selenium	<0.100	0.1
Silicon	13.0	0.2
Silver	<0.0500	0.05
Sodium	67.7	2
Strontium	<0.0500	0.05
Sulfur	9.47	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

19 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22WOT-15C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285445

Method: 6010B MOD, 6020 MOD

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.492	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	3.47	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	0.675	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	1.99	0.25
Selenium	<0.100	0.1
Silicon	12.5	0.2
Silver	<0.0500	0.05
Sodium	71.4	2
Strontium	<0.0500	0.05
Sulfur	9.45	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

19 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 22WOT-16C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285447

Method: 6010B MOD, 6020 MOD

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	0.517	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.500	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	3.00	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	0.699	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	1.91	0.25
Selenium	<0.100	0.1
Silicon	13.2	0.2
Silver	<0.0500	0.05
Sodium	72.5	2
Strontium	<0.0500	0.05
Sulfur	9.52	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	<0.0500	0.05
Zirconium	<0.0500	0.05

19 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
DUPLICATE SUMMARY

Sample ID
1922-1C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285418D

Method: 6010B MOD, 6020 MOD

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD
Aluminum	<0.500	<0.500	0.00%
Antimony	<0.100	<0.100	0.00%
Arsenic	<0.100	<0.100	0.00%
Barium	<0.0500	<0.0500	0.00%
Beryllium	<0.0500	<0.0500	0.00%
Bismuth	<0.150	<0.150	0.00%
Boron	<0.200	<0.200	0.00%
Cadmium	<0.0500	<0.0500	0.00%
Calcium	13.6	13.5	0.738%
Chromium	<0.0500	<0.0500	0.00%
Cobalt	<0.0500	<0.0500	0.00%
Copper	<0.0500	<0.0500	0.00%
Iron	<0.500	<0.500	0.00%
Lanthanum	<0.0500	<0.0500	0.00%
Lead	<0.0500	<0.0500	0.00%
Lithium	<0.0500	<0.0500	0.00%
Magnesium	1.22	1.17	4.18%
Manganese	<0.0500	<0.0500	0.00%
Molybdenum	<0.0500	<0.0500	0.00%
Nickel	<0.0500	<0.0500	0.00%
Palladium	<0.200	<0.200	0.00%
Phosphorus	<0.200	<0.200	0.00%
Potassium	2.64	2.73	3.35%
Selenium	<0.100	<0.100	0.00%
Silicon	11.3	11.3	0.00%
Silver	<0.0500	<0.0500	0.00%
Sodium	50.8	50.4	0.791%
Strontium	<0.0500	<0.0500	0.00%
Sulfur	9.07	9.09	0.220%
Thallium	<0.100	<0.100	0.00%
Thorium	<0.200	<0.200	0.00%
Tin	<0.0500	<0.0500	0.00%
Titanium	<0.0500	<0.0500	0.00%
Tungsten	<0.100	<0.100	0.00%
Uranium	<1.00	<1.00	0.00%
Vanadium	<0.0500	<0.0500	0.00%
Yttrium	<0.0500	<0.0500	0.00%
Zinc	<0.0500	<0.0500	0.00%
Zirconium	<0.0500	<0.0500	0.00%

19 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
MATRIX SPIKE SUMMARY

Sample ID
1922-1C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 285418S

Method: 6010B MOD, 6020 MOD

Client: Division 20

Date Received: 08/25/06

Project No.: 06002.01.242

SRR: 29696

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Spike Result (mg/L)	Spike Added (mg/L)	Recovery
Aluminum	-----	-----	-----	-----
Antimony	-----	-----	-----	-----
Arsenic	-----	-----	-----	-----
Barium	-----	-----	-----	-----
Beryllium	-----	-----	-----	-----
Bismuth	-----	-----	-----	-----
Boron	-----	-----	-----	-----
Cadmium	-----	-----	-----	-----
Calcium	-----	-----	-----	-----
Chromium	-----	-----	-----	-----
Cobalt	-----	-----	-----	-----
Copper	-----	-----	-----	-----
Iron	-----	-----	-----	-----
Lanthanum	-----	-----	-----	-----
Lead	-----	-----	-----	-----
Lithium	-----	-----	-----	-----
Magnesium	-----	-----	-----	-----
Manganese	-----	-----	-----	-----
Molybdenum	-----	-----	-----	-----
Nickel	-----	-----	-----	-----
Palladium	-----	-----	-----	-----
Phosphorus	-----	-----	-----	-----
Potassium	2.64	3.44	1.00	80.0%
Selenium	-----	-----	-----	-----
Silicon	-----	-----	-----	-----
Silver	-----	-----	-----	-----
Sodium	-----	-----	-----	-----
Strontium	-----	-----	-----	-----
Sulfur	-----	-----	-----	-----
Thallium	-----	-----	-----	-----
Thorium	-----	-----	-----	-----
Tin	-----	-----	-----	-----
Titanium	-----	-----	-----	-----
Tungsten	-----	-----	-----	-----
Uranium	-----	-----	-----	-----
Vanadium	-----	-----	-----	-----
Yttrium	-----	-----	-----	-----
Zinc	-----	-----	-----	-----
Zirconium	-----	-----	-----	-----

NA-Not Applicable

19 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE

MATRIX SPIKE SUMMARY

Sample ID: 1922-2C

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 08/25/06

Matrix: Water

Project No.: 06002.01.242

Lab System ID: 285419S

SRR: 29696

Method: 6010B MOD, 6020 MOD

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Spike Result (mg/L)	Spike Added (mg/L)	Recovery
Aluminum	<0.500	19.9	20.0	99.5%
Antimony	<0.100	5.03	5.00	100.6%
Arsenic	<0.100	20.6	20.0	103.0%
Barium	<0.0500	20.3	20.0	101.5%
Beryllium	<0.0500	0.498	0.500	99.6%
Bismuth	NA	NA	NA	NA
Boron	NA	NA	NA	NA
Cadmium	<0.0500	0.491	0.500	98.2%
Calcium	20.2	223	200	101.4%
Chromium	<0.0500	1.97	2.00	98.5%
Cobalt	<0.0500	5.00	5.00	100.0%
Copper	<0.0500	2.49	2.5	99.6%
Iron	21.0	30.7	10.0	97.0%
Lanthanum	NA	NA	NA	NA
Lead	<0.0500	4.91	5.00	98.2%
Lithium	<0.0500	40.2	40.0	100.5%
Magnesium	20.6	230	200	104.7%
Manganese	<0.0500	4.98	5.00	99.6%
Molybdenum	NA	NA	NA	NA
Nickel	<0.0500	4.96	5.00	99.2%
Palladium	NA	NA	NA	NA
Phosphorus	NA	NA	NA	NA
Potassium	-----	-----	-----	-----
Selenium	<0.100	20.9	20.0	104.5%
Silicon	NA	NA	NA	NA
Silver	<0.0500	0.478	0.500	95.6%
Sodium	20.1	225	200	102.5%
Strontium	NA	NA	NA	NA
Sulfur	NA	NA	NA	NA
Thallium	<0.100	20.9	20.0	104.5%
Thorium	NA	NA	NA	NA
Tin	NA	NA	NA	NA
Titanium	NA	NA	NA	NA
Tungsten	NA	NA	NA	NA
Uranium	NA	NA	NA	NA
Vanadium	<0.0500	4.90	5.00	98.0%
Yttrium	NA	NA	NA	NA
Zinc	<0.0500	4.93	5.00	98.6%
Zirconium	NA	NA	NA	NA

NA-Not Applicable

19 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE

LABORATORY CONTROL SAMPLE

Sample ID: LCS

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: NA

Matrix: Water

Project No.: 06002.01.242

Lab System ID: NA

SRR: 29696

Method: 6010B MOD, 6020 MOD

Task Order: 060828-6

Analysis	Sample Result (mg/L)	True Value (mg/L)	Recovery
Aluminum	19.6	20.0	98.0%
Antimony	4.97	5.00	99.4%
Arsenic	20.3	20.0	101.5%
Barium	20.3	20.0	101.5%
Beryllium	0.496	0.500	99.2%
Bismuth	NA	NA	NA
Boron	NA	NA	NA
Cadmium	0.491	0.500	98.2%
Calcium	202	200	101.0%
Chromium	1.95	2.00	97.5%
Cobalt	4.99	5.00	99.8%
Copper	2.46	2.50	98.4%
Iron	10.0	10.0	100.0%
Lanthanum	NA	NA	NA
Lead	4.85	5.00	97.0%
Lithium	40.1	40.0	100.3%
Magnesium	212	200	106.0%
Manganese	4.96	5.00	99.2%
Molybdenum	NA	NA	NA
Nickel	4.96	5.00	99.2%
Palladium	NA	NA	NA
Phosphorus	NA	NA	NA
Potassium	0.0196	0.02	98.0%
Selenium	20.6	20.0	103.0%
Silicon	NA	NA	NA
Silver	0.476	0.500	95.2%
Sodium	201	200	100.5%
Strontium	NA	NA	NA
Sulfur	NA	NA	NA
Thallium	20.9	20.0	104.5%
Thorium	NA	NA	NA
Tin	NA	NA	NA
Titanium	NA	NA	NA
Tungsten	NA	NA	NA
Uranium	NA	NA	NA
Vanadium	4.87	5.00	97.4%
Yttrium	NA	NA	NA
Zinc	4.92	5.00	98.4%
Zirconium	NA	NA	NA

NA- Not Applicable.

19 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE

BLANK SUMMARY

Sample ID
PB

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: NA

Matrix: Water

Project No.: 06002.01.242

Lab System ID: NA

SRR: 29696

Method: 6010B MOD, 6020 MOD

Task Order: 060828-6

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.500
Antimony	<0.100	0.100
Arsenic	<0.100	0.100
Barium	<0.0500	0.0500
Beryllium	<0.0500	0.0500
Bismuth	<0.150	0.150
Boron	<0.200	0.200
Cadmium	<0.0500	0.0500
Calcium	<0.500	0.500
Chromium	<0.0500	0.0500
Cobalt	<0.0500	0.0500
Copper	<0.0500	0.0500
Iron	<0.500	0.500
Lanthanum	<0.0500	0.0500
Lead	<0.0500	0.0500
Lithium	<0.0500	0.0500
Magnesium	<0.500	0.500
Manganese	<0.0500	0.0500
Molybdenum	<0.0500	0.0500
Nickel	<0.0500	0.0500
Palladium	<0.200	0.200
Phosphorus	<0.200	0.200
Potassium	<0.00500	0.00500
Selenium	<0.100	0.100
Silicon	<0.200	0.200
Silver	<0.0500	0.0500
Sodium	<2.00	2.00
Strontium	<0.0500	0.0500
Sulfur	<0.250	0.250
Thallium	<0.100	0.100
Thorium	<0.200	0.200
Tin	<0.0500	0.0500
Titanium	<0.0500	0.0500
Tungsten	<0.100	0.100
Uranium	<1.00	1.00
Vanadium	<0.0500	0.0500
Yttrium	<0.0500	0.0500
Zinc	<0.0500	0.0500
Zirconium	<0.0500	0.0500

NA- Not Applicable.

19 DEC 06 CONT BAW

Table Comparing Cation Target and Div 01 Results for Blind QA Standard 1922-2C

Species	Target Conc (µg/mL)	Div 01 Conc (mg/L)	Percent Recovery
Potassium	20	18.8	94.0
Calcium	20	20.2	101
Sodium	20	20.1	101
Magnesium	20	20.6	103
Iron	20	21.0	105

Source for target conc: 811/60 (see 811/61 for reference)
Iron is sometimes not included in the target values because Fe is not on our typical cation analyses short list
Source for Div 01 results: 830/129

Table Comparing Cation Target and Div 01 Results for Blind QA Standard 1922-3C

Species	Target Conc (µg/mL)	Div 01 Conc (mg/L)	Percent Recovery
Potassium	20	19.2	96.0
Calcium	20	20.0	100
Sodium	20	21.1	106
Magnesium	20	20.5	103
Iron	20	20.9	105

Source for target conc: 811/60 (see 811/61 for reference)
Iron is sometimes not included in the target values because Fe is not on our typical cation analyses short list
Source for Div 01 results: 830/130

Table Comparing Cation Div 01 Results of Duplicate Blind Standards 1922-2C and 1922-3C

Species	1922-2C Conc (mg/L)	1922-3C Conc (mg/L)	Percent Difference
Potassium	18.8	19.2	2.13
Calcium	20.2	20.0	-0.990
Sodium	20.1	21.1	4.98
Magnesium	20.6	20.5	-0.485
Iron	21.0	20.9	-0.476

Source for Div 01 results: 830/129-130

Table comparing cation analyses (phosphorus) with anion analyses (phosphate as P - done in duplicate) of aliquots of the same anion QA standard (811/60)

Division 01 Analyses	Cation	Anion	Anion
Analyte	Phosphorus	Phosphate as P	Phosphate as P
Sample	1922-4C	1922-5A	1922-6A (dup)
Reference for result	830/131	830/77	830/77
Results (mg/L)	4.01	3.85	3.90

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Table Comparing Cation Target and Div 01 Results (1922-1C)
for Reference Solution 19PB-4 Simulated Groundwater with Calcium

Species	Target Conc ~~(g~~ Mg/mL)	Div 01 Conc (mg/L)	Percent Recovery
Potassium	3.00	2.64	88.0
Calcium BW	14.0	13.6	97.1
Sodium 12-21-06	51.8	50.8	98.1
Magnesium	1.22	1.22	100
Silicon	12.0	11.3	94.2

Sulfur also detected at 9.07 ppm
Source for target conc: 811/65 reference to 742/27-28 updated at 812/4-5 for target conc
Source for Div 01 results 830/128

12-21-06 BW

21 DEC 06 CONT BAW

Div01 CATION Results for Select 19PB (w+w/o calcite) and 22PC (w+w/o calcite) Phase 2 (adjusting initial ref soln pH) Experimental Solns

Initial Entry for sorption experiment: 811/77-78

Samples: Total of 14 cation
8 select (not all) experimental solutions
- 2 using 19PB sonic core composite
- 2 using 19PB sonic core composite w/o calcite
- 2 using 22PC sonic core composite
- 2 using 22PC sonic core composite w/o calcite
4 UTSA samples
2 Cation QA samples (dups)

CNWRA Sample Collection: 811/85-6
Sample ID Legend (ALL): 811/87
Note ALL cations and anions (except CNWRA anion samples) were not diluted (811/85-6)
QA sample prep and target concentration: 811/60
Note: QA soln previously analyzed (in duplicate) with phase 1 experiment - see 830/153
~~Delivery~~ BW 12-21-06 BW 12-22-06
QA ID legend 811/~~63~~ 87 and ref: 811/85
Delivery, chain of custody: 811/89-91

Following the raw data is
+ QA data comparing
- duplicate samples to each other
- samples to target concentrations
- reanalyses results (some QA soln previously analyzed with phase 1 experiment

21 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19WT-9C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 286175

Method: 6010B MOD, 6020 MOD

Client: Division 20

Date Received: 09/14/06

Project No.: 06002.01.242

SRR: 29771

Task Order: 060915-4

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.434	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	13.2	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	1.13	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	3.61	0.25
Selenium	<0.100	0.1
Silicon	12.0	0.2
Silver	<0.0500	0.05
Sodium	54.4	2
Strontium	<0.0500	0.05
Sulfur	9.24	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	0.0534	0.05
Zirconium	<0.0500	0.05

21 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19WT-10C

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 286174

Method: 6010B MOD, 6020 MOD

Client: Division 20

Date Received: 09/14/06

Project No.: 06002.01.242

SRR: 29771

Task Order: 060915-4

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.423	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	13.1	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	1.18	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	3.20	0.25
Selenium	<0.100	0.1
Silicon	11.9	0.2
Silver	<0.0500	0.05
Sodium	52.7	2
Strontium	<0.0500	0.05
Sulfur	9.24	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	0.071	0.05
Zirconium	<0.0500	0.05

21 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19WOT-9C

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 09/14/06

Matrix: Water

Project No.: 06002.01.242

Lab System ID: 286173

SRR: 29771

Method: 6010B MOD, 6020 MOD

Task Order: 060915-4

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.423	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	6.13	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	0.783	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	1.87	0.25
Selenium	<0.100	0.1
Silicon	12.6	0.2
Silver	<0.0500	0.05
Sodium	69.9	2
Strontium	<0.0500	0.05
Sulfur	9.18	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	0.0898	0.05
Zirconium	<0.0500	0.05

21 DEC 06 CONT BAW

SOUTHWEST RESEARCH INSTITUTE
SAMPLE ANALYSIS DATA SHEET

Sample ID: 19WOT-10C

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 09/14/06

Matrix: Water

Project No.: 06002.01.242

Lab System ID: 286172

SRR: 29771

Method: 6010B MOD, 6020 MOD

Task Order: 060915-4

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.500	0.5
Antimony	<0.100	0.1
Arsenic	<0.100	0.1
Barium	0.415	0.05
Beryllium	<0.0500	0.05
Bismuth	<0.150	0.15
Boron	<0.200	0.2
Cadmium	<0.0500	0.05
Calcium	6.32	0.5
Chromium	<0.0500	0.05
Cobalt	<0.0500	0.05
Copper	<0.0500	0.05
Iron	<0.500	0.5
Lanthanum	<0.0500	0.05
Lead	<0.0500	0.05
Lithium	<0.0500	0.05
Magnesium	0.757	0.5
Manganese	<0.0500	0.05
Molybdenum	<0.0500	0.05
Nickel	<0.0500	0.05
Palladium	<0.200	0.2
Phosphorus	<0.200	0.2
Potassium	1.91	0.25
Selenium	<0.100	0.1
Silicon	12.5	0.2
Silver	<0.0500	0.05
Sodium	69.2	2
Strontium	<0.0500	0.05
Sulfur	9.22	0.25
Thallium	<0.100	0.1
Thorium	<0.200	0.2
Tin	<0.0500	0.05
Titanium	<0.0500	0.05
Tungsten	<0.100	0.1
Uranium	<1.00	1
Vanadium	<0.0500	0.05
Yttrium	<0.0500	0.05
Zinc	0.0674	0.05
Zirconium	<0.0500	0.05

04 JAN 07 BAW

END OF SCIENTIFIC NOTEBOOK 830

ENTRIES CONTINUED IN SN 838