Level C Data Package Deliverables

Wet Chemistry

Applied P & Ch Laboratory

Applied P & Ch Laboratory

Wet Analysis Results for Method 7196

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Anal. Method	7196
Project ID:	JPL	Service ID:	35772	Collected by:	JR

Component Name: Chromium (VI)
CAS No: 1333-82-0

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-5772-1	EB-1-10-22-03	Water	10/22/03	10/22/03	10/22/03	03W4935	mg/L	0.01	<0.01	U
03-5772-2	MW-11-1	Water	10/22/03	10/22/03	10/22/03	03W4935	mg/L	0.01	<0.01	U
03-5772-3	MW-11-2	Water	10/22/03	10/22/03	10/22/03	03W4935	mg/L	0.01	<0.01	U
03-5772-4	MW-11-3	Water	10/22/03	10/22/03	10/22/03	03W4935	mg/L	0.01	<0.01	U
03-5772-5	MW-11-4	Water	10/22/03	10/22/03	10/22/03	03W4935	mg/L	0.01	<0.01	U
03-5772-6	MW-11-5	Water	10/22/03	10/22/03	10/22/03	03W4935	mg/L	0.01	<0.01	U
03-5772-7	MW-22-1	Water	10/22/03	10/22/03	10/22/03	03W4935	mg/L	0.01	<0.01	U
03-5772-8	MW-22-2	Water	10/22/03	10/22/03	10/22/03	03W4935	mg/L	0.01	<0.01	U
03-5772-9	MW-22-3	Water	10/22/03	10/22/03	10/22/03	03W4935	mg/L	0.01	<0.01	U
03-5772-10	MW-22-4	Water	10/22/03	10/22/03	10/22/03	03W4935	mg/L	0.01	<0.01	U
03-5772-11	MW-22-5	Water	10/22/03	10/22/03	10/22/03	03W4935	mg/L	0.01	<0.01	U
03W4935-MB-01	03W4935-MB-01	Water	10/22/03	10/22/03	10/22/03	03W4935	mg/L	0.01	<0.01	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

Applied P & Ch Laboratory

Wet Analysis Results for Method 314.0

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Anal. Method	314.0
Project ID:	JPL	Service ID:	35772	Collected by:	JR

Component Name: Perchlorate
CAS No:

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-5772-1	EB-1-10-22-03	Water	10/22/03	10/22/03	10/23/03	03W4946	μg/L	4	<4	U
03-5772-2	MW-11-1	Water	10/22/03	10/22/03	10/23/03	03W4946	μg/L	4	<4	U
03-5772-3	MW-11-2	Water	10/22/03	10/22/03	10/23/03	03W4946	μg/L	4	<4	U
03-5772-4	MW-11-3	Water	10/22/03	10/22/03	10/23/03	03W4946	μg/L	4	<4	U
03-5772-5	MW-11-4	Water	10/22/03	10/22/03	10/23/03	03W4946	μg/L	4	<4	U
03-5772-6	MW-11-5	Water	10/22/03	10/22/03	10/23/03	03W4946	μg/L	4	<4	U
03-5772-7	MW-22-1	Water	10/22/03	10/22/03	10/23/03	03W4946	μg/L	4	2.2	B
03-5772-8	MW-22-2	Water	10/22/03	10/22/03	10/23/03	03W4946	μg/L	4	2.4	B
03-5772-9	MW-22-3	Water	10/22/03	10/22/03	10/23/03	03W4946	μg/L	4	2.6	B
03-5772-10	MW-22-4	Water	10/22/03	10/22/03	10/23/03	03W4946	μg/L	4	<4	U
03-5772-11	MW-22-5	Water	10/22/03	10/22/03	10/23/03	03W4946	μg/L	4	<4	U
03W4946-MB-01	03W4946-MB-01	Water	10/23/03	10/23/03	10/23/03	03W4946	μg/L	4	<4	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

FORM-3

Applied P & Ch Laboratory

Lab Control Spike/Lab Control Spike Duplicate Recovery for Method 314.0

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	35772
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W4946		
LCS Filename:	-	Date Analyzed:	102303	Time Analyzed:	
LCSD Filename:	-	Date Analyzed:	102303	Time Analyzed:	

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
PERCHLORATE	μg/L	25	0	26.6	106	80-120
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	LCSD Concentration	LCSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
PERCHLORATE	μg/L	25	27.5	110	4	20	80-120
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

* – Values outside of contract required QC Limits D – Spiked components diluted out

Comments: _____

FORM-3

Applied P & Ch Laboratory

Matrix Spike/Matrix Spike Duplicate Recovery for Method 314.0

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	35772
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W4946		
MS Filename:	-	Date Analyzed:	102303	Time Analyzed:	
MSD Filename:	-	Date Analyzed:	102303	Time Analyzed:	
MS Sample No:	**MW-23-2**	Sample Lab ID:	03-5792-9		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
PERCHLORATE	μg/L	25	5.4	33.9	114	75-125
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
PERCHLORATE	μg/L	25	34.1	115	1	20	75-125
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

* – Values outside of contract required QC Limits D – Spiked components diluted out

Comments: _____

FORM-3

Applied P & Ch Laboratory

Lab Control Spike/Lab Control Spike Duplicate Recovery for Method 7196

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	35772
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W4935		
LCS Filename:	-	Date Analyzed:	102203	Time Analyzed:	15:25
LCSD Filename:	-	Date Analyzed:	102203	Time Analyzed:	15:25

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
CHROMIUM (VI)	mg/L	0.25	0	0.239	96	80-115
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	LCSD Concentration	LCSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
CHROMIUM (VI)	mg/L	0.25	0.238	95	1	19	80-115
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

* – Values outside of contract required QC Limits D – Spiked components diluted out

Comments: _____

FORM-3

Applied P & Ch Laboratory

Matrix Spike/Matrix Spike Duplicate Recovery for Method 7196

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	35772
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W4935		
MS Filename:	-	Date Analyzed:	102203	Time Analyzed:	15:25
MSD Filename:	-	Date Analyzed:	102203	Time Analyzed:	15:25
MS Sample No:	**MW-11-1**	Sample Lab ID:	03-5772-2		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
CHROMIUM (VI)	mg/L	0.25	0	0.232	93	78-115
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
CHROMIUM (VI)	mg/L	0.25	0.227	91	2	19	78-115
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

* – Values outside of contract required QC Limits D – Spiked components diluted out

Comments: _____

6A

INITIAL CALIBRATION DATA

Lab Name: Applied P & Ch Lab Contract: 35772

Analysis: Chromium (VI) Calibration Date: 07/28/2003

Concentration (mg/L)	0.000	0.0125	0.025	0.125	0.250	0.50
Absorbance	0.000	0.007	0.017	0.107	0.212	0.420

A=-0.001+ 0.846C

A=Absorbance

C=Concentration (mg/L)

r= 0.9999

FORM-7

Applied P & Ch Laboratory

CCV Recovery for Wet Analysis

Client Name:	GEOFON, Inc.	Contract No.:		Lab Code:	APCL
Case No:		SAS No.:		Service ID:	35772
Project ID:	JPL	Project No.:	04-4428.10		

#	Component Name	Method	Batch No.	Unit	Expe-cted	Test Result	Rec. %	Dev. %	Flag	Control Limit, %	Test Date
1	Perchlorate	314.0	03W4946	μg/L	50	55.8	112	12	√	85-115	10/23/2003
	Perchlorate	314.0	03W4946	μg/L	50	56.7	113	13	√	85-115	10/23/2003
	Perchlorate	314.0	03W4946	μg/L	50	56.7	113	13	√	85-115	10/23/2003
	Perchlorate	314.0	03W4946	μg/L	50	57.2	114	14	√	85-115	10/23/2003
2	Chromium (VI)	7196	03W4935	mg/L	0.25	0.253	101	1	√	90-110	10/22/2003
	Chromium (VI)	7196	03W4935	mg/L	0.25	0.247	99	-1	√	90-110	10/22/2003

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Tel: (909) 590-1828 Fax: (909) 590-1498

Chromium (VI) (7196) Worksheet

Batch # P2 Matrix: W & S [Holding Time: 24 hours!!] Test Date: 7/28/03 Analyst: [illegible]

Lot #: Reagent Water _____ Diphenylcazide solution _____ Test Time: _____ SOP: G

Calibration	STD Lot #	$C_{std} \times V_{std}/V_f = C_i$	A_i	$RF_i = A_i/C_i$	Calibration results	Note
STD-1	W-7257	× / =0.00 mg/L	0.000		Least Square [RF]=	Cal. Code:
STD-2	W-	× / =0.005 mg/L	0.007		Average $\bar{RF}$=	
STD-3	W-	× / 0.075 =0.050 mg/L	0.017		C.C.=0.999 (≥ 0.995)	
STD-4	W-	× / =0.125 mg/L	0.107		RSD= % (≤ 15%)	
STD-5	W-	× / =0.250 mg/L	0.212		Ref. page	
STD-6	W-	× / =0.500 mg/L	0.420		A=-0.001+0.846C	

Analysis Type	Sample ID or Lot #	Samp. Amnt X_0 (g or mL)	Dilu./Ext $X/X_0=f_1$	Treat. Ratio $V/X=f_2$	540 nm A	Concentration $C'=A/\bar{RF}$	C (Sample) $C=f_1 f_2 C'$	Anom: Note
CCV	Lot: W-7853	Expected Conc.:	×	/ =0.25 mg/L	0.218	0.259 mg/L	REC. %	90-110
Method Blank	Bl. Lot:		/X_0 =	95.0/ =	0.000	0.000 mg/L	ppm	
LCS1	Bl. Lot:		/X_0 =	95.0/ =	0.210	0.250 mg/L	ppm	
Sample-1	4177-37	1ml→100ml	/X_0 = 1	95.0/ = 2	0.290	0.689 mg/L	ppm	
MS on S-1	37	0.5ml→100ml	/X_0 =	95.0/ = 2	0.287	0.682 mg/L	ppm	report
MSD on S-1	4175-15	10.0g	50.0mL/X_0 = 5	95.0/ = 10	0.050	3.04 mg/L	ppm	
Sample 2	15	Y	/X_0 =	95.0/ = 2	0.247	2.94 mg/L	ppm	report
Sample 3			/X_0 =	95.0/ =		mg/L	ppm	
Sample 4			/X_0 =	95.0/ =		mg/L	ppm	
Sample 5			/X_0 =	95.0/ =		mg/L	ppm	
Sample 6			/X_0 =	95.0/ =		mg/L	ppm	
Sample 7			/X_0 =	95.0/ =		mg/L	ppm	
Sample 8			/X_0 =	95.0/ =		mg/L	ppm	
Sample 9			/X_0 =	95.0/ =		mg/L	ppm	
Sample 10			/X_0 =	95.0/ =		mg/L	ppm	
Blank	Lot:		/X_0 =	95.0/ =		mg/L	ppm	
LCS2	Bl. Lot:		/X_0 =	95.0/ =		mg/L	ppm	
Sample 11			/X_0 =	95.0/ =		mg/L	ppm	
Sample 12			/X_0 =	95.0/ =		mg/L	ppm	
Sample 13			/X_0 =	95.0/ =		mg/L	ppm	
Sample 14			/X_0 =	95.0/ =		mg/L	ppm	
Sample 15			/X_0 =	95.0/ =		mg/L	ppm	
Sample 16			/X_0 =	95.0/ =		mg/L	ppm	
Sample 17			/X_0 =	95.0/ =		mg/L	ppm	
Sample 18			/X_0 =	95.0/ =		mg/L	ppm	
Sample 19			/X_0 =	95.0/ =		mg/L	ppm	
Sample 20			/X_0 =	95.0/ =		mg/L	ppm	
MTX Dup.	doling 0.25mg		/X_0 =	95.0/ =	0.218	0.259 mg/L	ppm	

Type	STD Lot #	$C_{STD}(\mu g/mL) \times V_{STD}(mL)/X(g \text{ or } mL) = T$	Spike Rec.	Ctl Limit (W/S)
MS	W-	× / = ppm	%	80-120 %/80-120 %
MSD	W-	× / = ppm	%	.. ..
LCS	W-	× / = ppm	%	80-120 %/80-120 %
LCSD	W-	× / = ppm	%	.. ..

PQL/MDL (in ppm)	
PQL(w)	0.01
PQL(s)	0.05
MDL(w)	0.005
MDL(s)	0.025

APCL form 5-155 May 08, 1996. Ver. 3.1 No pencil. Use blue pen for record. Use red pen for correction.
File:[CUST.DOC.WET]CR6.TEX Root-file: CR6_ROOT.TEX 1-Page-File: CR61.TEX
Control limits are subjected to change. The updated values are given in the latest version of APCL Technical Handbook Vol. 2

Magnolia Ave. Chino CA 91710
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Chromium (VI) (7196) Worksheet

Batch # 03W4955 Matrix: W [Holding Time: 24 hours!!] Test Date: 10/22/03 Analyst: [illegible]

Lot #: Reagent Water _____ Diphenylcazide solution _____ Test Time: 15:25 SOP: G-22

Calibration	STD Lot #	$C_{std} \times V_{std} / V_f = C_i$	A_i	$RF_i = A_i / C_i$	Calibration results	Note
STD-1	W-	× / = mg/L			Least Square [RF]=	Cal. Code:
STD-2	W-	× / = mg/L			Average $\bar{RF}$=	
STD-3	W-	× / = mg/L			C.C.=0.9999 (≥ 0.995)	
STD-4	W-	× / = mg/L			RSD= % (≤ 15%)	
STD-5	W-	× / = mg/L			Ref. page	
STD-6	W-	× / = mg/L			A = -0.001 + 0.8460	

Analysis Type	Sample ID or Lot #	Samp. Amnt X_0 (g or mL)	Dilu./Ext $X/X_0 = f_1$	Treat. Ratio $V/X = f_2$	540 nm A	Concentration $C' = A/\bar{RF}$	C (Sample) $C = f_1 f_2 C'$	Anomaly Note
CCV	Lot: W-7757	Expected Conc.:	×	/ = 0.25 mg/L	0.213	0.253 mg/L	REC. %	90-110 %
Method Blank	Bl. Lot: T1118		$/X_0$ = 1	95.0/ =	0.000	mg/L	0.001 ppm	
LCS1	Bl. Lot: "		$/X_0$ = 1	95.0/ =	0.201	mg/L	0.239 ppm	
Sample-1	5772 1		$/X_0$ = 1	95.0/ =	0.001	mg/L	0.002 ppm	
MS on S-1	2		$/X_0$ = 1	95.0/ =	0.195	mg/L	0.232 ppm	
MSD on S-1	2		$/X_0$ = 1	95.0/ =	0.191	mg/L	0.227 ppm	
Sample 2	2		$/X_0$ = 1	95.0/ =	0.001	mg/L	0.002 ppm	
Sample 3	3		$/X_0$ = 1	95.0/ =	0.004	mg/L	0.006 ppm	
Sample 4	4		$/X_0$ = 1	95.0/ =	0.004	mg/L	0.006 ppm	
Sample 5	5		$/X_0$ = 1	95.0/ =	0.004	mg/L	0.006 ppm	
Sample 6	6		$/X_0$ = 1	95.0/ =	0.005	mg/L	0.007 ppm	
Sample 7	7		$/X_0$ = 1	95.0/ =	0.004	mg/L	0.006 ppm	
Sample 8	8		$/X_0$ = 1	95.0/ =	0.004	mg/L	0.006 ppm	
Sample 9	9		$/X_0$ = 1	95.0/ =	0.003	mg/L	0.005 ppm	
Sample 10	10		$/X_0$ = 1	95.0/ =	0.003	mg/L	0.004 ppm	
Blank	Lot: T1118		$/X_0$ = 1	95.0/ =	0.000	mg/L	0.001 ppm	
LCS2	Bl. Lot: "		$/X_0$ = 1	95.0/ =	0.200	mg/L	0.238 ppm	
Sample 11	11		$/X_0$ = 1	95.0/ =	0.003	mg/L	0.005 ppm	
Sample 12			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 13			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 14			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 15			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 16			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 17			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 18			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 19			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 20			$/X_0$ =	95.0/ =		mg/L	ppm	
MTX Dup.	closing 0.25 mg/L		$/X_0$ =	95.0/ =	0.208	0.247 mg/L	ppm	

[illegible] 10/22/03

Type	STD Lot #	$C_{STD}(\mu g/mL) \times V_{STD}(mL) / X(g \text{ or } mL) = T$	Spike Rec.	Ctl Limit (W/S)
MS	W-7757	× / = 0.25 ppm	%	80-120 %/80-120 %
MSD	W- "	× / = ppm	%	.. ..
LCS	W-7853	× / = ppm	%	80-120 %/80-120 %
LCSD	W- "	× / = ppm	%	.. ..

PQL/MDL (in ppm)	
PQL(w)	0.01
PQL(s)	0.05
MDL(w)	0.005
MDL(s)	0.025

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Control limits are subjected to change. The updated values are given in the latest version of APCL Technical Handbook Vol. 2

Line	Sample	Sample Type	Level	Method	Data File	Volume	Dilution	Weight
1	##03w4946k ipc 25ppb w8032	Sample		e314-011.met	c:\data\03w4946k\w4946k ipc25ppb	1	1	1
2	ccv 50ppb w8082	Sample		e314-011.met	c:\data\03w4946k\w4946k q01	1	1	1
3	lcs 25ppb w8087	Sample		e314-011.met	c:\data\03w4946k\w4946k l01	1	1	1
4	Lcsd 25PPB W8033a	Sample		e314-011.met	c:\data\03w4946k\w4946k j01	1	1	1
5	ICCS 4ppb w8088	Sample		e314-011.met	c:\data\03w4946k\w4946k iccs 4ppb	1	1	1
6	mb	Sample		e314-011.met	c:\data\03w4946k\w4946k k01	1	1	1
7	5778-01 f=1	Sample		e314-011.met	c:\data\03w4946k\5778-01	1	1	1
8	5772-01 f=1	Sample		e314-011.met	c:\data\03w4946k\5772-01	1	1	1
9	5772-02 f=1	Sample		e314-011.met	c:\data\03w4946k\5772-02	1	1	1
10	5772-03 f=1	Sample		e314-011.met	c:\data\03w4946k\5772-03	1	1	1
11	5772-04 f=1	Sample		e314-011.met	c:\data\03w4946k\5772-04	1	1	1
12	5772-05 f=1	Sample		e314-011.met	c:\data\03w4946k\5772-05	1	1	1
13	ccv 50ppb w8082	Sample		e314-011.met	c:\data\03w4946k\w4946k q02	1	1	1
14	ccb	Sample		e314-011.met	c:\data\03w4946k\w4946k ccb	1	1	1
15	5772-06 F=1	Sample		e314-011.met	c:\data\03w4946k\5772-06	1	1	1
16	5772-07 F=1	Sample		e314-011.met	c:\data\03w4946k\5772-07	1	1	1
17	5772-08 F=1	Sample		e314-011.met	c:\data\03w4946k\5772-08	1	1	1
18	5772-09 F=1	Sample		e314-011.met	c:\data\03w4946k\5772-09	1	1	1
19	5772-10 F=1	Sample		e314-011.met	c:\data\03w4946k\5772-10	1	1	1
20	5772-11 F=1	Sample		e314-011.met	c:\data\03w4946k\5772-11	1	1	1
21	5792-09 F=1	Sample		e314-011.met	c:\data\03w4946k\5792-09	1	1	1
22	5792-09 MS 25PPB F=1W8033B	Sample		e314-011.met	c:\data\03w4946k\w4946k m01	1	1	1
23	5792-09 MSD 25PPB F=1W8033B	Sample		e314-011.met	c:\data\03w4946k\w4946k n01	1	1	1
24	ccv 50ppb w8082	Sample		e314-011.met	c:\data\03w4946k\w4946k q03	1	1	1
25	CCB	Sample		e314-011.met	c:\data\03w4946k\w4946k ccb	1	1	1
26	5792-01 F=1	Sample		e314-011.met	c:\data\03w4946k\5792-01	1	1	1
27	5792-06 F=1	Sample		e314-011.met	c:\data\03w4946k\5792-06	1	1	1
28	5792-02 F=1	Sample		e314-011.met	c:\data\03w4946k\5792-02	1	1	1
29	5792-03 F=1	Sample		e314-011.met	c:\data\03w4946k\5792-03	1	1	1
30	5792-04 F=1	Sample		e314-011.met	c:\data\03w4946k\5792-04	1	1	1
31	5792-05 F=1	Sample		e314-011.met	c:\data\03w4946k\5792-05	1	1	1
32	5792-07 F=1	Sample		e314-011.met	c:\data\03w4946k\5792-07	1	1	1
33	LCSD 25PPB W8033A	Sample		e314-011.met	c:\data\03w4946k\w4946k j01	1	1	1
34	CCV 50PPB W8082	Sample		e314-011.met	c:\data\03w4946k\w4946k q04	1	1	1
35		Sample		aastopcl.met		1	1	1

Analyst W. W

Date 10/23/03

Instrument Ic-k

Line	Int. Std.	Comment
1	1	
2	1	
3	1	
4	1	
5	1	
6	1	
7	1	
8	1	
9	1	
10	1	
11	1	
12	1	
13	1	
14	1	
15	1	
16	1	
17	1	
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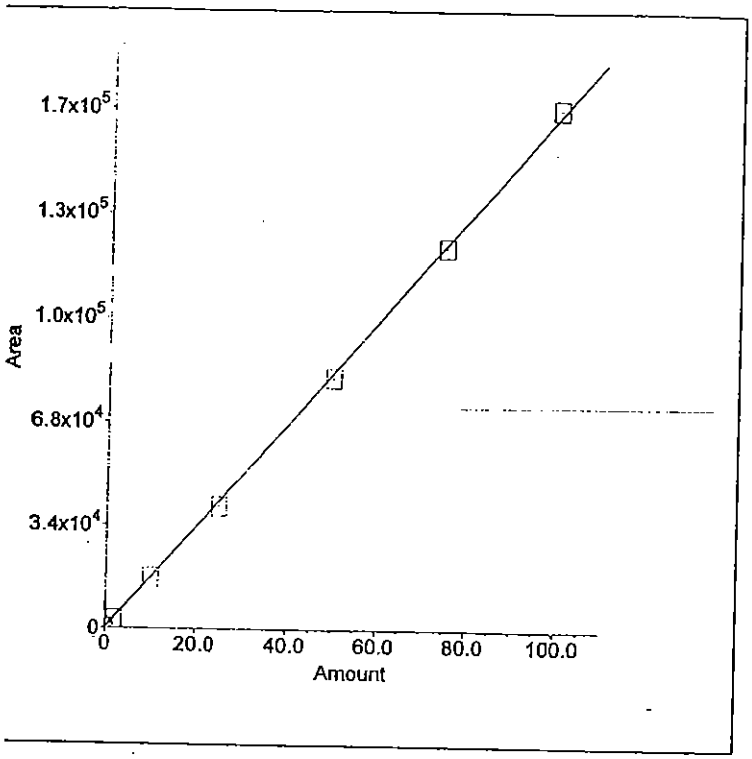
24	1	
25	1	
26	1	
27	1	
28	1	
29	1	
30	1	
31	1	
32	1	
33	1	
34	1	
35	1	

Default Method Path: C:\PEAKNET\METHOD
Default Data Path: C:\DATA\03W4560K
Comment:

ethod:C:\PEAKNET\METHOD\E314-011.MET Updated:03/13/2003 10:39:48 AM Total:1

Component:perchlorate
tandard:External Fit Type:Linear
rigin:Force Calibration:Area
^{2}=0.999492
mt=0.0005893*Resp+0



Calibration : 7 points , 0, 2, 10, 25, 50, 75, 100 ppb

Analyst C. W
Date 03/12/03
Instrument IC-1C

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APCL Perchlorate Analysis Report

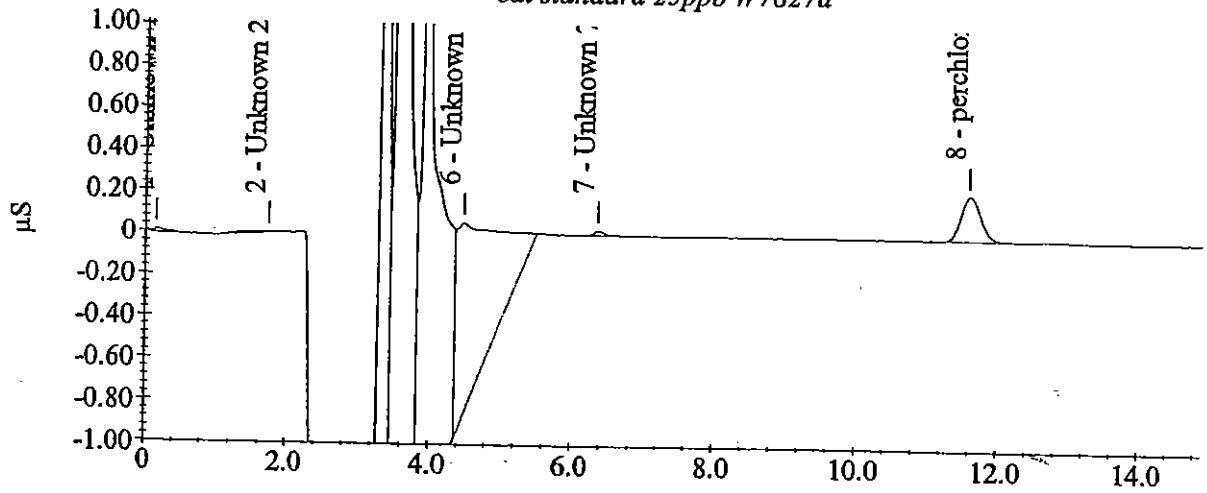
Sample Name : cal standard 25ppb W7827d
Data File Name : C:\DATA\E314-011\std-25pb_005.DXD

Method File Name : C:\PEAKNET\METHOD\e314-011.met
Date Time Collected : 03/12/2003 7:05:54 PM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
8	perchlorate	11.60	26.84	40702	2125

cal standard 25ppb W7827d



APCL Perchlorate Analysis Report

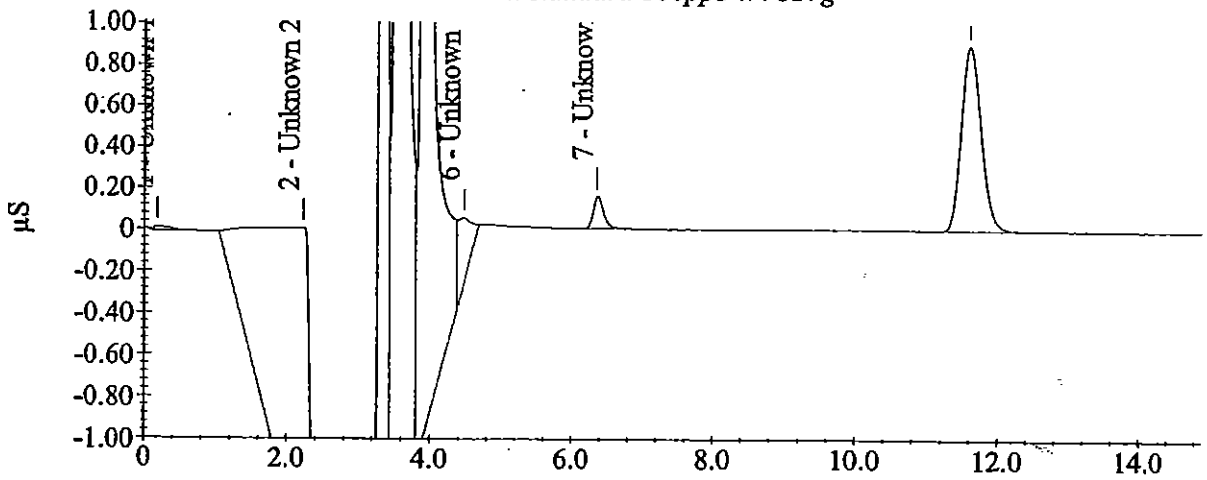
Sample Name : cal standard 100ppb W7827g
Data File Name : C:\DATA\E314-011\std-100pb_008.DXD

Method File Name : C:\PEAKNET\METHOD\e314-011.met
Date Time Collected : 03/12/2003 7:58:39 PM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
8	perchlorate	11.62	113.21	171686	8927[illegible]

cal standard 100ppb W7827g



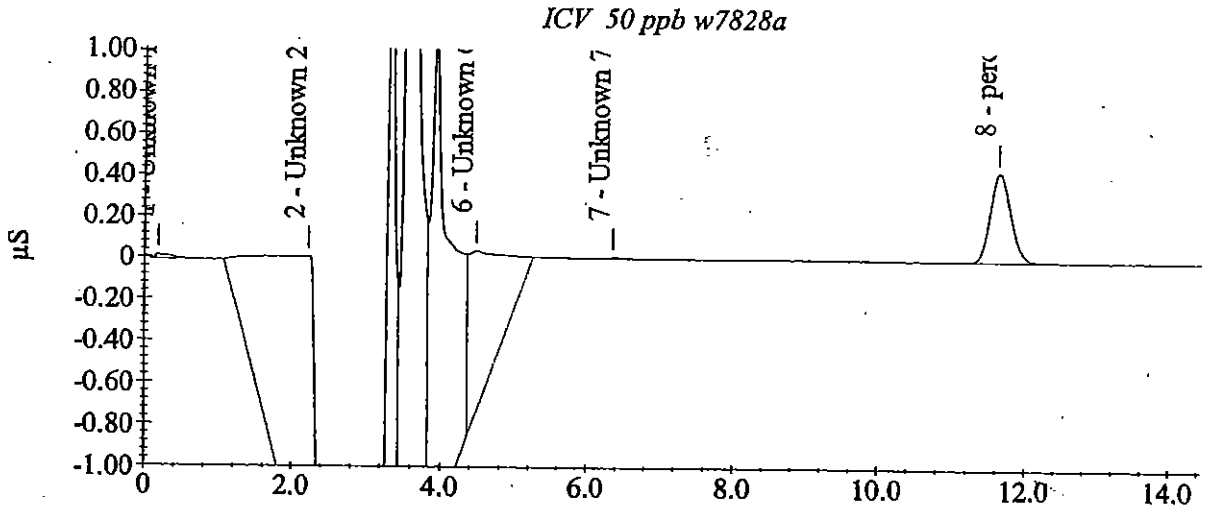
APCL Perchlorate Analysis Report

Sample Name : ICV 50 ppb w7828a
Data File Name : C:\DATA\E314-011\icv-50pb_009.DXD

Method File Name : C:\PEAKNET\METHOD\E314-011.met
Date Time Collected : 03/12/2003 8:16:15 PM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
8	perchlorate	11.65	49.49	83990	4321



APCL Perchlorate Analysis Report

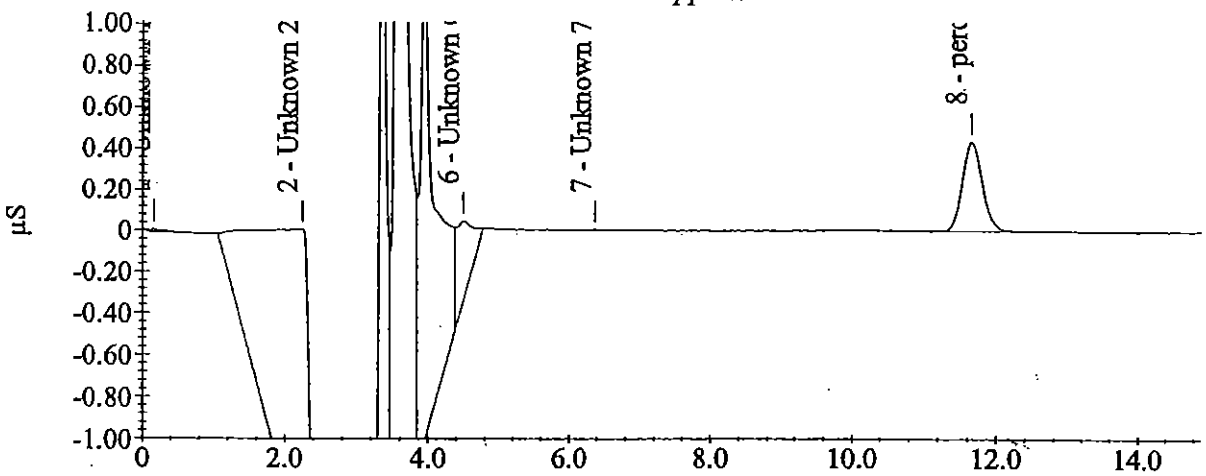
Sample Name : cal standard 50ppb W7827e
Data File Name : C:\DATA\E314-011\std-50pb_006.DXD

Method File Name : C:\PEAKNET\METHOD\e314-011.met
Date Time Collected : 03/12/2003 7:23:30 PM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
8	perchlorate	11.67	54.89	83240	4320

cal standard 50ppb W7827e



APCL Perchlorate Analysis Report

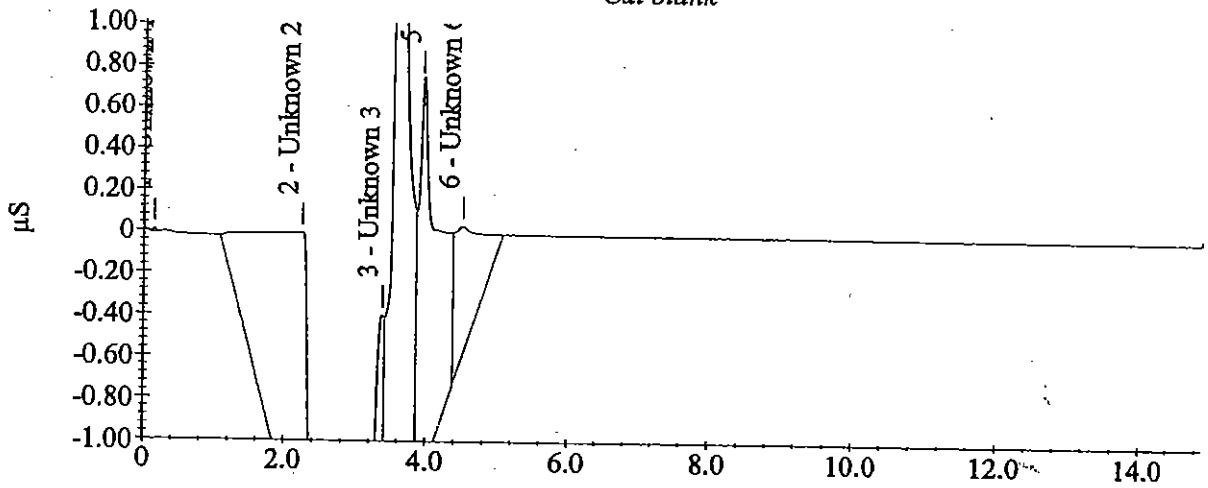
Sample Name : Cal blank
Data File Name : C:\data\E314-011\Mb_001.DXD

Method File Name : c:\peaknet\method\e314-011.met
Date Time Collected : 03/12/2003 5:55:39 PM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height

Cal blank



APCL Perchlorate Analysis Report

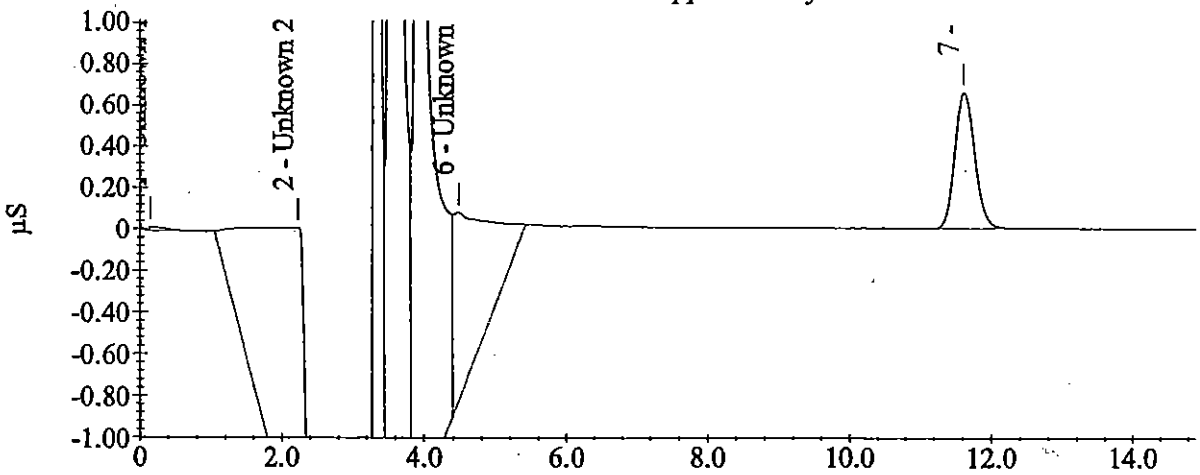
Sample Name : cal standard 75ppb W7827f
Data File Name : C:\DATA\E314-011\std-75pb_007.DXD

Method File Name : C:\PEAKNET\METHOD\e314-011.met
Date Time Collected : 03/12/2003 7:41:05 PM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
7	perchlorate	11.62	83.23	126224	6553

cal standard 75ppb W7827f



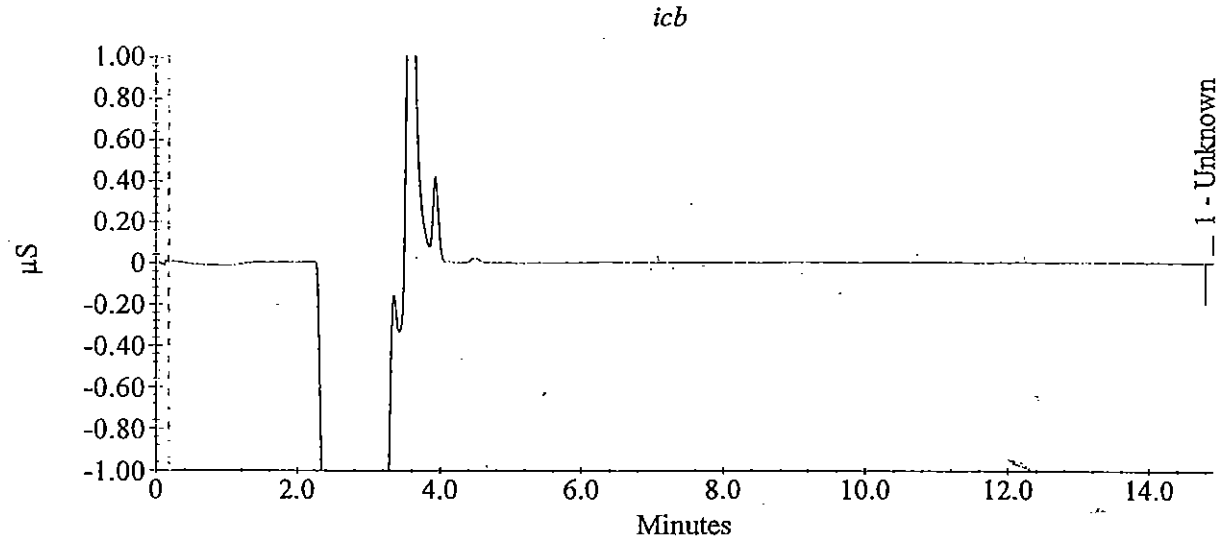
APCL Perchlorate Analysis Report

Sample Name : icb
Data File Name : C:\DATA\E314-011\ICB_010.DXD

Method File Name : c:\PeakNet\method\E314-011.met
Date Time Collected : 03/12/2003 8:33:51 PM
System Operator : wei wang
~~Dilution Factor : 1.00~~

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height



APCL Perchlorate Analysis Report

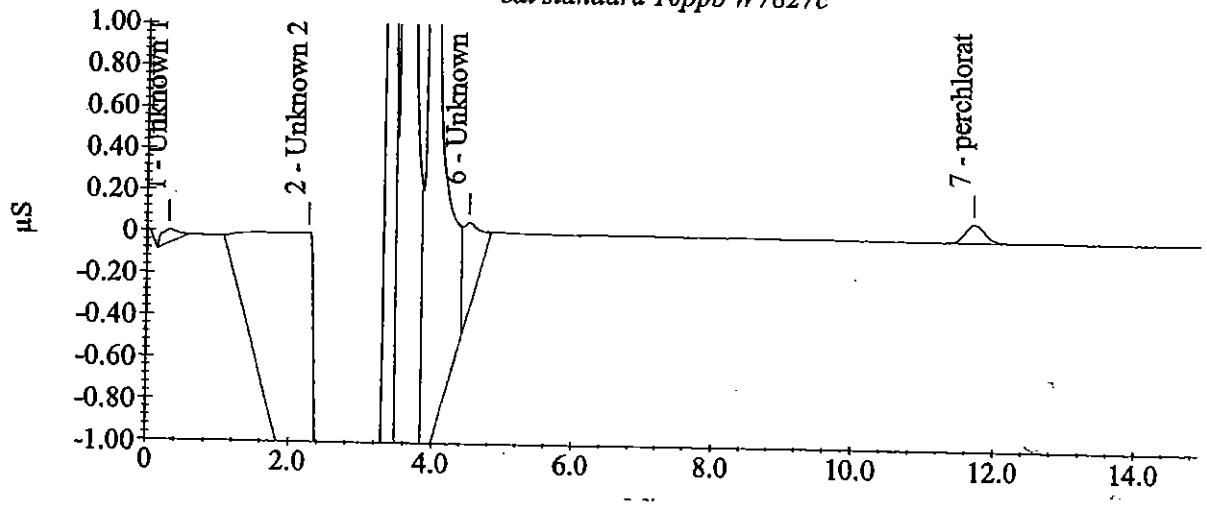
Sample Name : cal standard 10ppb W7827c
Data File Name : C:\DATA\E314-011\std-10pb_004.DXD

Method File Name : C:\PEAKNET\METHOD\e314-011.met
Date Time Collected : 03/12/2003 6:48:21 PM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
7	perchlorate	11.70	11.16	16917	879

cal standard 10ppb W7827c



APCL Perchlorate Analysis Report

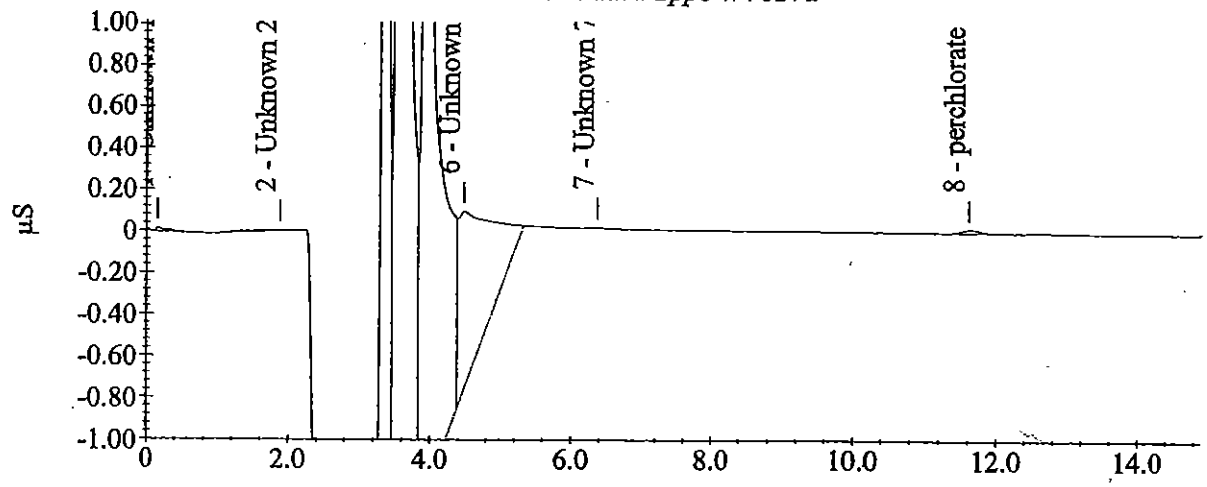
Sample Name : cal standard 2ppb W7827a
Data File Name : C:\DATA\E314-011\std-2pb_002.DXD

Method File Name : C:\PEAKNET\METHOD\e314-011.met
Date Time Collected : 03/12/2003 6:13:12 PM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
8	perchlorate	11.62	1.92	2910	164

cal standard 2ppb W7827a



Schedule File: C:\PeakNet\schedule\E314-011.sch

Line	Sample	Sample Type	Level	Method	Data File	Volume	Dilution
1	Cal blank	Sample		e314-011.met	c:\data\e314-011\mb_001.dxd	1	1
2	cal standard 2ppb W7827a	Sample		e314-011.met	c:\data\e314-011\std-2pb_002.dxd	1	1
3	cal standard 4ppb W7827b	Sample		e314-011.met	c:\data\e314-011\std-4pb_003.dxd	1	1
4	cal standard 10ppb W7827c	Sample		e314-011.met	c:\data\e314-011\std-10pb_004.dxd	1	1
5	cal standard 25ppb W7827d	Sample		e314-011.met	c:\data\e314-011\std-25pb_005.dxd	1	1
6	cal standard 50ppb W7827e	Sample		e314-011.met	c:\data\e314-011\std-50pb_006.dxd	1	1
7	cal standard 75ppb W7827f	Sample		e314-011.met	c:\data\e314-011\std-75pb_007.dxd	1	1
8	cal standard 100ppb W7827g	Sample		e314-011.met	c:\data\e314-011\std-100pb_008.dxd	1	1
9	ICV 50 ppb w7828a	Sample		e314-011.met	c:\data\e314-011\icv-50pb_009.dxd	1	1
10	icb	Sample		e314-011.met	c:\data\e314-011\icb_010.dxd	1	1
11	anion 100pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-100_011.dxd	1	1
12	anion 200pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-200_012.dxd	1	1
13	anion 300pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-300_013.dxd	1	1
14	anion 400pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-400_014.dxd	1	1
15	anion 500pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-500_015.dxd	1	1
16	anion 600pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-600_016.dxd	1	1
17	anion 800pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-800_017.dxd	1	1
18	anion 1000pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-1000_018.dxd	1	1
19	anion 400pm each 2pb	Sample		e314-011.met	c:\data\e314-011\ipc-2pb_019.dxd	1	1
20	anion 400pm each 4pb	Sample		e314-011.met	c:\data\e314-011\ipc-4pb_020.dxd	1	1
21	anion 400pm each 25pb	Sample		e314-011.met	c:\data\e314-011\ipc-25pb_021.dxd	1	1
22	ICV 50 ppb	Sample		e314-011.met	c:\data\e314-011\ccv-50pb	1	1
23	MDL 4pb	Sample		e314-011.met	c:\data\e314-011\mdl-02_023.dxd	1	1
24	MDL 4pb	Sample		e314-011.met	c:\data\e314-011\mdl-03_024.dxd	1	1
25	MDL 4pb	Sample		e314-011.met	c:\data\e314-011\mdl-04	1	1
26	MDL 4pb	Sample		e314-011.met	c:\data\e314-011\mdl-05	1	1
27	MDL 4pb	Sample		e314-011.met	c:\data\e314-011\mdl-06	1	1
28	MDL 4pb	Sample		e314-011.met	c:\data\e314-011\mdl-07	1	1
29	MDL 4pb	Sample		e314-011.met	c:\data\e314-011\mdl-08	1	1
30	IDP and IDA 25pb	Sample		e314-011.met	c:\data\e314-011\idap-25pb	1	1
31	IDP and IDA 25pb	Sample		e314-011.met	c:\data\e314-011\idap-25pb	1	1
32	IDP and IDA 25pb	Sample		e314-011.met	c:\data\e314-011\idap-25pb	1	1
33	IDP and IDA 25pb	Sample		e314-011.met	c:\data\e314-011\idap-25pb	1	1
34	IDP and IDA 25pb	Sample		e314-011.met	c:\data\e314-011\idap-25pb	1	1
35	IDP and IDA 25pb	Sample		e314-011.met	c:\data\e314-011\idap-25pb	1	1
36	IDP and IDA 25pb	Sample		e314-011.met	c:\data\e314-011\idap-25pb	1	1
37	MCT anion 800pm each, 25pbCLO4	Sample		e314-011.met	c:\data\e314-011\ipc-25pb	1	1
38	MCT anion 800pm each, 25pbCLO4	Sample		e314-011.met	c:\data\e314-011\ipc-25pb	1	1
39	MCT anion 800pm each, 4pbCLO4	Sample		e314-011.met	c:\data\e314-011\ipc-4pb	1	1
40	MCT anion 800pm each, 4pbCLO4	Sample		e314-011.met	c:\data\e314-011\ipc-4pb	1	1
41	MDL 20pb soil	Sample		e314-011.met	c:\data\e314-011\mdl-s01	1	5
42	MDL 20pb soil	Sample		e314-011.met	c:\data\e314-011\mdl-s02	1	5
43	MDL 20pb soil	Sample		e314-011.met	c:\data\e314-011\mdl-s03	1	5
44	MDL 20pb soil	Sample		e314-011.met	c:\data\e314-011\mdl-s04	1	5
45	MDL 20pb soil	Sample		e314-011.met	c:\data\e314-011\mdl-s05	1	5
46	MDL 20pb soil	Sample		e314-011.met	c:\data\e314-011\mdl-s06	1	5
47	MDL 20pb soil	Sample		e314-011.met	c:\data\e314-011\mdl-s07	1	5
48	standard 25ppb W7827d	Sample		e314-011.met	c:\data\e314-011\std-25pb	1	1
49	anion 100pm each,4pb CLO4	Sample		e314-011.met	c:\data\e314-011\am-100-4pb	1	1
50	anion 200pm each ,4pb CLO4	Sample		e314-011.met	c:\data\e314-011\am-200-4pb	1	1
51	anion 300pm each ,4pb CLO4	Sample		e314-011.met	c:\data\e314-011\am-300-4pb	1	1
52	anion 100pm each,2pb CLO4	Sample		e314-011.met	c:\data\e314-011\am-100-2pb	1	1
53	anion 200pm each,2pb CLO4	Sample		e314-011.met	c:\data\e314-011\am-200-2pb	1	1
54	anion 300pm each,2pb CLO4	Sample		e314-011.met	c:\data\e314-011\am-300-2pb	1	1
55	1982-01 B S.C 4450us/cm	Sample		e314-011.met	c:\data\e314-011\1982-01	1	1
56	1982-01 B S.C 4450us/cm	Sample		e314-011.met	c:\data\e314-011\1982-01	1	2
57	1982-02 f=10	Sample		e314-011.met	c:\data\e314-011\1982-02_057.dxd	1	10
58		Sample		aastopcl.met		1	1

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Default Method Path: C:\PEAKNET\METHOD
Default Data Path: C:\DATA\03W1286K
Comment:
Remark:

Condition information:

1. Column

Separator column: AS16 4mm

Guard column: AS16 4mm

2. Eluent : NaOH 38mM

3. Flow rate: 1.2mL/min

4. Suppressor: ASRS-ULTRA 4mm

5.Detector: CD20

6.Analyst: Charles Wu and Wei Wang

7.Date: 03 / 12 / 2003

8.Instrument: IC-K DX-500 Dionex

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
GEOFON, Inc.
Attention: Brad Shojaee
22632 Golden Spring Dr Ste 270
Diamond Bar 91765
Tel: (909)396-7662 Fax: (909)396-1455

Service ID #: 801-035802
Collected by: JR
Collected on: 10/23/03

Received: 10/23/03
Extracted: N/A
Tested: N/A
Reported: 11/13/03

Sample Description: Water
Project Description: 04.4428.10 JPL

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result			
				Dupe-4-4-Q03 03-05802-1	EB-2-10-23-03 03-05802-2	MW-12-1 03-05802-3	MW-12-2 03-05802-4
CHROMIUM [a]							

Component Analyzed	Method	Unit	PQL	Analysis Result			
				MW-12-3 03-05802-5	MW-12-4 03-05802-6	MW-12-5 03-05802-7	MW-23-1 03-05802-8
CHROMIUM [a]							

Component Analyzed	Method	Unit	PQL	Analysis Result			
				MW-23-2 03-05802-9	MW-23-3 03-05802-10	MW-23-4 03-05802-11	MW-23-5 03-05802-12
CHROMIUM [a]							

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0
[a] Subcontracted to Advanced Technology Laboratories Inc. See attached.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

0026/

GEOFON INCORPORATED

22632 GOLDEN SPRINGS DR., SUITE 270
DIAMOND BAR, CA 91765 • (909) 396-7662 • FAX (909) 396-1455

CHAIN-OF-CUSTODY RECORD

LABORATORY COPY

MW-12

GEOFON's LAB COORDINATOR: Scott Buchmer	LAB COORDINATOR'S PHONE: 909 396 7662	LAB COORDINATOR'S FAX: 909 396 1455	LABORATORY SERVICE ID:	LABORATORY CONTACT: Kenny Chan	MAIL REPORT (COMPANY NAME): Geofon
PROJECT NAME: SPL GW Mon-4Q03	PROJECT LOCATION: MW-12	PROJECT NUMBER: 04.4428.10	LABORATORY PHONE: 909 590 1828	LABORATORY FAX: 909 590 1498	RECIPIENT NAME: Tony Ford
PROJECT CONTACT: Brad Shojaee	PROJECT PHONE NUMBER: 909-396 7662	PROJECT FAX: 909 396 1455	LABORATORY ADDRESS: 13760 Magnolia Ave.		ADDRESS: 22632 Golden Springs Dr. Ste 270
PROJECT ADDRESS: 4800 Oak Grove Dr.	CITY, STATE AND ZIPCODE: Pasadena, CA 909 396 7662	CLIENT: US Navy SWDIV	CITY, STATE AND ZIPCODE: Chino, CA 91710		CITY, STATE AND ZIPCODE: Diamond Bar, CA 91765
PROJECT MANAGER: Tony Ford	PROJECT MANAGER'S PHONE: 909 396 7662	PROJECT MANAGER'S FAX: 909 396 1455			

5802

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont	QC Level	T.A.T	Analyses: 200.8 (Cu)	7196 (Cr VI)	527.0 (VOC)	314.0 (ClO4)					Comments
1	MW-12-5	W	10/23/03	1049	HNO3 HCl None	5 4	III	Normal	X	X	X	X					
2	MW-12-4	↓	↓	1113	↓	5 4	III	↓	X	X	X	X					
3	MW-12-3	↓	↓	1132	↓	↓	↓	↓	X	X	X	X					
4	MW-12-2	↓	↓	1150	↓	↓	↓	↓	X	X	X	X					
5	MW-12-1	↓	↓	1216	↓	↓	↓	↓	X	X	X	X					
6	Dupe-4-4-Q03	↓	↓	1241	↓	↓	IV	↓	X	X	X	X					
7																	
8																	
9																	
10																	

9 — 10.23.03

SAMPLES COLLECTED BY: JR

COURIER AND AIR BILL NUMBER:

COOLER TEMPERATURE UPON RECEIPT

SAMPLE'S CONDITION UPON RECEIPT

RELINQUISHED BY	RECEIVED BY	DATE	TIME
[signature]	[signature]	10-23-03	13:15
[signature]	[signature]	10-23-03	14:25

Distribution: White - Laboratory (To be returned with Analytical Report); Goldenrod - Project File; Yellow - Project Data Manager

0067

GEOFON INCORPORATED

22632 GOLDEN SPRINGS DR., SUITE 270
DIAMOND BAR, CA 91765 • (909) 396-7662 • FAX (909) 396-1455

CHAIN-OF-CUSTODY RECORD

LABORATORY COPY

MW-23

GEOFON's LAB COORDINATOR: Scott Buhmer	LAB COORDINATOR'S PHONE: 909 396 7662	LAB COORDINATOR'S FAX: 909 396 1455	LABORATORY SERVICE ID	LABORATORY CONTACT: Kenny Chan	MAIL REPORT (COMPANY NAME): Geofon
PROJECT NAME: JPL GW Mon-4Q03	PROJECT LOCATION: MW-23	PROJECT NUMBER: 04-4428.10	LABORATORY PHONE: 909 590 1828	LABORATORY FAX: 909 590 1498	RECIPIENT NAME: Tony Ford
PROJECT CONTACT: Brad Shojaee	PROJECT PHONE NUMBER: 909 396 7662	PROJECT FAX: 909 396 1455	LABORATORY ADDRESS: 13760 Magnolia Ave.		ADDRESS: 22632 Golden Springs Dr. Ste 270
PROJECT ADDRESS: 4800 Oak Grove Dr.	CITY, STATE AND ZIPCODE: Pasadena, CA	CLIENT: US NAVY, SWDIV	CITY, STATE AND ZIPCODE: Chino, CA 91710		CITY, STATE AND ZIPCODE: Diamond Bar, CA 91765
PROJECT MANAGER: Tony Ford	PROJECT MANAGER'S PHONE: 909 396 7662	PROJECT MANAGER'S FAX: 909 396 1455			

5802

Item	Sample Identifier	Matrix	Date	Time	# of Cont. / Preservative / Initials / Date	QC Level	T.A.T	Analyses: 524.2 (VOCs)	1,4-Dioxane (8140)	200.8 (Cu)	7196A (Cr VI)				Comments
1	MW-23-5	W	10/23/03	0712	4 / HCl, HNO3, None / 10-23-03	III	Normal	X	X	X	X				
2	MW-23-4			0734	5 / 10-23-03			X	X	X	X	10.23.03			MS/MSD -- 10.23.03
3	MW-23-3			0754				X	X	X	X				
4	MW-23-2			0824				X	X	X	X				MS/MSD
5	MW-23-1			0901				X	X	X	X				
6	TB-2-10-23-03			—	2 / HCl			X							
7	EB-2-10-23-03			0855	5 / HCl, HNO3, None			X	X	X	X				
8															
9						10.23.03									
10															

SAMPLES COLLECTED BY: JK

COURIER AND AIR BILL NUMBER:

COOLER TEMPERATURE UPON RECEIPT

SAMPLE'S CONDITION UPON RECEIPT

RELINQUISHED BY	RECEIVED BY	DATE	TIME
[signature]	[signature]	10-23-03	13:15
		10-23-03	14:25

Distribution: White - Laboratory (To be returned with Analytical Report); Goldenrod - Project File; Yellow - Project Data Manager

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Sample Login: Check List

03-05802 (0470_ 177) (2202777_ 177)

10/24/03

Part 1: General Information

☐ Company Information	Name:	*GEOFON, Inc.*
	Address:	*22632 Golden Spring Dr Ste 270 ,Diamond Bar ,CA 91765*
☐ Project Information	Project Description:	*JPL*
	Project #:	*04.4428.10*
☐ Billing Information	P.O. #:	
	Bill Address:	*22632 Golden Spring Dr Ste 270 ,Diamond Bar ,CA 91765*
	Lab Project ID:	
	Client Database #:	*3*
☐ Receiving Information	Who Received Sample?	*Kenny Chan*
	Receiving Date/Time:	*10/23/03 1425*
	COC No.	*0061 0067*
☐ Shipping Information	Shipping Company	*APCL pick up*
	Packing Information:	*Cooler/Ice Chester*
	Cooler Temperature:	*3.6 °C*
☐ Container Information	Container Provider:	*Client*
☐ Sampling Information	Sampling Person:	*JR*
	Sampling Company:	*Client*
☐ Turn-Around-Time Option:		*Normal*
☐ QC Option:		*NEESA C*
☐ Disposal Option:		*Not specify*

Part 2: Sample Information

Seq. #	Sample ID (on COC)	Sample Sub-ID	APCL Sample ID	Matrix	Cont-tainer	Preser-vative	Vol, ml Am. g	# of Replica	Condition G, L, B	Collected mmddyy	Hold ?	Composite Group	TAT Days	
1	MW-12-5	Cr	03-05802-7	W	P	N	500	1	G	102303	N	0	9	☐
2	MW-12-4	Cr	03-05802-6	W	P	N	500	1	G	102303	N	0	9	☐
3	MW-12-3	Cr	03-05802-5	W	P	N	500	1	G	102303	N	0	9	☐
4	MW-12-2	Cr	03-05802-4	W	P	N	500	1	G	102303	N	0	9	☐
5	MW-12-1	Cr	03-05802-3	W	P	N	500	1	G	102303	N	0	9	☐
6	Dupe-4-4-Q03	Cr	03-05802-1	W	P	N	500	1	G	102303	N	0	9	☐
7	MW-23-5	Cr	03-05802-12	W	P	N	500	1	G	102303	N	0	9	☐
8	MW-23-4	Cr	03-05802-11	W	P	N	500	1	G	102303	N	0	9	☐
9	MW-23-3	Cr	03-05802-10	W	P	N	500	1	G	102303	N	0	9	☐
10	MW-23-2	Cr	03-05802-9	W	P	N	500	2	G	102303	N	0	9	☐
11	MW-23-1	Cr	03-05802-8	W	P	N	500	1	G	102303	N	0	9	☐
12	EB-2-10-23-03	Cr	03-05802-2	W	P	N	500	1	G	102303	N	0	9	☐

Part 3: Analysis Information

Test Items: ☐ *200.7/6010B* Chromium, Cr, by ICP

Seq. #	Client"s Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	CR	
1	MW-12-5	Cr	03-05802-7	W	X	☐
2	MW-12-4	Cr	03-05802-6	W	X	☐
3	MW-12-3	Cr	03-05802-5	W	X	☐
4	MW-12-2	Cr	03-05802-4	W	X	☐
5	MW-12-1	Cr	03-05802-3	W	X	☐
6	Dupe-4-4-Q03	Cr	03-05802-1	W	X	☐
7	MW-23-5	Cr	03-05802-12	W	X	☐
8	MW-23-4	Cr	03-05802-11	W	X	☐
9	MW-23-3	Cr	03-05802-10	W	X	☐
10	MW-23-2	Cr	03-05802-9	W	X	☐
11	MW-23-1	Cr	03-05802-8	W	X	☐
12	EB-2-10-23-03	Cr	03-05802-2	W	X	☐

☐ Client"s Requirement: **PERFORM MS/MSD ON SAMPLE #** 9

Login By JASON M. NARIO

Check By MK

Applied P & Ch Laboratory
13760 Magnolia Ave., Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Sample Receiving Checklist

APCL ServiceID 5802 **Client Name/Project:** Geosen JPL

1. Sample Arrival

Date/Time Received 10/23/03 1425 Date/Time Opened 10/23/03 1425 By (name): Kenny Chen

Custody Transfer: ☐ Client ☐ Golden State ☐ UPS ☐ US Mail ☐ FedEx ☑ APCL Emp: Scott B.

2. Chain-of-Custody (CoC)

☑ With Samples? ☐ Faxed? ☑ Client has Copy? ☐ Signed, dated? By:
☑ Project ID? ☑ Analyses Clear? ☐ Hold Samples? #on Hold # Received 13
☑ CoC/Docs Zip-Locked under lid? ☐ Compos.#: ☑ #Samples OK?
☐ Discrepancies? ☐ Client notified? ☐ Response (attach docs):

3. Shipping Container/Cooler

☑ Cooler Used? # of 1 Cooled by: ☑ Ice ☐ Blue Ice ☐ Dry Ice ☐ None
Temp °C 3.6
(Cooler temperature measured from temp blank if present, otherwise measured from the cooler).
Cooler Custody Seal? ☐ Absent ☐ Intact ☐ Tampered?

4. Sample Preservation

☐ **pH <2** ☐ pH >12
If Not, pH = ____ Preserved by: ☐ Client ☐ APCL ☐ Third Party

5. Holding-time Requirements

☐ pH 24hr ☐ BACT 6/24hr ☑ Cr^{VI} 24hr ☐ NO_3^- 48hr ☐ BOD 48hr
☐ Cl_2 ASAP ☐ Turbidity 48hr ☐ DO ASAP ☐ Fe(II) ASAP
☐ HT Expired? ☐ Client notified?

6. Sample Container Condition

☑ Intact? ☐ Broken? ☐ Documented? Number:
Type: ☑ plastic ☑ glass ☐ Tube: brass/SS ☐ Tedlar Bag
☑ Quantity OK? ☐ Leaking? ☐ Anomaly?
☑ Caps tight? ☐ Air Bubbles? ☐ Anomaly?
Labels: ☑ Unique ID? ☑ Date/Time ☐ Preserved?

7. Turn Around Time

☐ RUSH TAT: ____ ☑ Std (7-10 days) ☐ Not Marked

8. Sample Matrix

☐ Drinking H_2O ☐ Other Liq ☐ Soil ☐ Wipe ☐ Polymer ☐ Air ☐ Other:
☑ Ground H_2O ☐ Sludge ☐ Filter ☐ Oil/Petro ☐ Paint ☐ W. Water ☐ Extract ☐ Unknown

9. Pre-Login Check List Completed & OK?

☑ ALL OK? (if not, attach docs) ☐ Client Contact? (Name:_____)Date/Time:_____

Received/Checked by: [signature] Printed: 23 Oct 2003 7:22 a.m.

*HT: Samples must be analyzed for results to reflect total concentrations. Results generated outside required of holding times are considered minimal values and may be used to define waste as hazardous but not as non-hazardous.

DocumentFile: [neal.texfiles]smprcl.tex.

Applied P & Ch Laboratories
Project: JPL GW Mon-4Q03, 04.4428.10

ATL Work Order: 065631

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Table of Contents

ATL Work Order: 065631

Item	Pages
Cover Letter	0001-0004
Sample Receiving Items	0005-0006
Analytical Result Reports	0007-0018
Quality Control Reports	0019-0020
Raw Data:	
Method 200.8	0021-0080

Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *19-Nov-03*

CLIENT: Applied P & Ch Laboratories
Project: JPL GW Mon-4Q03, 04.4428.10
Lab Order: 065631

CASE NARRATIVE

Results were J-Flag. "J" is used to flag those results that are between the PQL (Practical Quantitation Limit) and the calculated MDL (Method Detection Limit). Results that are "J" flagged are estimated values since it becomes difficult to accurately quantitate the analyte near the MDL.

QC Batch R32297 (EPA 200.8)

Matrix Spike (MS) and /or Matrix Spike Duplicate (MSD) are outside recovery criteria; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Advanced Technology Laboratories *3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040*

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Subcontract Chain of Custody

Please Print in pen

Subcontract Lab: ATL
Contact: Puri
Tel #: (562) 989-4045 Fax #: (562) 989-4040
Address: 3275 Walnut Avenue
City: Signal Hill
State: CA
Zip code: 90807
APCL Client: #5802
APCL Contact: Kenny Chan
Project Name/Code JPL GW Mon-4Q03
Job # 04.4428.10
BILL TO APCL
Sub Quotation # —
Due Date: ☒ regular ☐ rush: ___ days ___ hours
Sampled by: JR

Field Sample ID No.	Sample Description ID	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Analysis Items: Cr by 200.0												Remarks
	MW-12-5	102303	1049	W	HNO_3	1	X												Level 4 pkg and EDD.
	MW-12-4	102303	1113	W	HNO_3	1	X												
	MW-12-3	102303	1132	W	HNO_3	1	X												
	MW-12-2	102303	1150	W	HNO_3	1	X												
	MW-12-1	102303	1216	W	HNO_3	1	X												
	Dupe-4-4-Q03	102303	1241	W	HNO_3	1	X												
	MW-23-5	102303	0712	W	HNO_3	1	X												
	MW-23-4	102303	0734	W	HNO_3	1	X												
	MW-23-3	102303	0754	W	HNO_3	1	X												
	MW-23-2	102303	0824	W	HNO_3	2	X												← MS/MSD
	MW-23-1	102303	0901	W	HNO_3	1	X												
	EB-2-10-23-03	102303	0855	W	HNO_3	1	X												

White – With report
Yellow – Lab copy
Pink – Originator

QC Requirement: ☐ Regular; ☐ QA/QC Report; ☐ WIP; ☐ Raw Data; ☐ Extended Raw Data ☐ CLP; ☐ ACE ☐ AFCEE ☒ NEESA D (E, C or D); ☑ Other EDD (Please specify)

Sample Disposal: ☐ Return ☐ Disposal by APCL ☐ Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: ☑ Intact; ☐ Broken. Cooler Seal: ☑ Intact; ☐ Broken; ☐ None. Tag # _____ Temperature: ☐ Room ☑ Cold (2.8 °C).

Relinquished by [signature] Date/Time 10/24/3 1080 Received by [signature] Date/Time 10/31/03 / 1940

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients understand that all terms described in the proposals, quotations for this project, and/or the general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate its service or withhold delivery of any reports, if in APCL's sole discretion the terms of the project have been breach

Advanced Technology Laboratories

Date: *10-Nov-03*

CLIENT: Applied P & Ch Laboratories
Project: JPL GW Mon-4Q03, 04.4428.10
Lab Order: 065631
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
065631-001A	MW-12-5	Water	10/23/2003	10/31/2003	11/10/2003
065631-002A	MW-12-4	Water	10/23/2003	10/31/2003	11/10/2003
065631-003A	MW-12-3	Water	10/23/2003	10/31/2003	11/10/2003
065631-004A	MW-12-2	Water	10/23/2003	10/31/2003	11/10/2003
065631-005A	MW-12-1	Water	10/23/2003	10/31/2003	11/10/2003
065631-006A	Dupe-4-4-Q03	Water	10/23/2003	10/31/2003	11/10/2003
065631-007A	MW-23-5	Water	10/23/2003	10/31/2003	11/10/2003
065631-008A	MW-23-4	Water	10/23/2003	10/31/2003	11/10/2003
065631-009A	MW-23-3	Water	10/23/2003	10/31/2003	11/10/2003
065631-010A	MW-23-2	Water	10/23/2003	10/31/2003	11/10/2003
065631-011A	MW-23-1	Water	10/23/2003	10/31/2003	11/10/2003
065631-012A	EB-2-10-23-03	Water	10/23/2003	10/31/2003	11/10/2003

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *10-Nov-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-12-5
Lab Order:	065631		
Project:	JPL GW Mon-4Q03, 04.4428.10	**Collection Date:**	10/23/2003 10:49:00 AM
Lab ID:	065631-001A	**Matrix:**	WATER

Analyte	Result	Qual	MDL	PQL	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**				Analyst: **NS**
RunID: ICP4_031105A QC Bach: R32297			PrepDate:				
Chromium	4.7		0.11	1.0	µg/L	1	11/5/2003 12:33:35 P

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H-Samples exceed holding time

Results are wet unless otherwise specified

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *10-Nov-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-12-4
Lab Order:	065631		
Project:	JPL GW Mon-4Q03, 04.4428.10	**Collection Date:**	10/23/2003 11:13:00 AM
Lab ID:	065631-002A	**Matrix:**	WATER

Analyte	Result	Qual	MDL	PQL	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**				Analyst: **NS**
RunID: ICP4_031105A QC Bach: R32297			PrepDate:				
Chromium	2.8		0.11	1.0	µg/L	1	11/5/2003 12:36:04 P

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H-Samples exceed holding time

Results are wet unless otherwise specified

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *10-Nov-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-12-3
Lab Order:	065631		
Project:	JPL GW Mon-4Q03, 04.4428.10	**Collection Date:**	10/23/2003 11:32:00 AM
Lab ID:	065631-003A	**Matrix:**	WATER

Analyte	Result	Qual	MDL	PQL	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**				Analyst: **NS**
RunID: ICP4_031105A QC Bach: R32297			PrepDate:				
Chromium	1.6		0.11	1.0	µg/L	1	11/5/2003 12:38:34 P

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H-Samples exceed holding time

Results are wet unless otherwise specified

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *10-Nov-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-12-2
Lab Order:	065631		
Project:	JPL GW Mon-4Q03, 04.4428.10	**Collection Date:**	10/23/2003 11:50:00 AM
Lab ID:	065631-004A	**Matrix:**	WATER

Analyte	Result	Qual	MDL	PQL	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**				Analyst: **NS**
RunID: ICP4_031105A QC Bach: R32297			PrepDate:				
Chromium	2.9		0.11	1.0	µg/L	1	11/5/2003 12:41:03 P

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H-Samples exceed holding time

Results are wet unless otherwise specified

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *10-Nov-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-12-1
Lab Order:	065631		
Project:	JPL GW Mon-4Q03, 04.4428.10	**Collection Date:**	10/23/2003 12:16:00 PM
Lab ID:	065631-005A	**Matrix:**	WATER

Analyte	Result	Qual	MDL	PQL	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**				Analyst: **NS**
RunID: ICP4_031105A QC Bach: R32297			PrepDate:				
Chromium	8.1		0.11	1.0	µg/L	1	11/5/2003 12:43:34 P

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H-Samples exceed holding time

Results are wet unless otherwise specified

Advanced Technology Laboratories *3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040*

Advanced Technology Laboratories

Date: *10-Nov-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	Dupe-4-4-Q03
Lab Order:	065631		
Project:	JPL GW Mon-4Q03, 04.4428.10	**Collection Date:**	10/23/2003 12:41:00 PM
Lab ID:	065631-006A	**Matrix:**	WATER

Analyte	Result	Qual	MDL	PQL	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**				Analyst: **NS**
RunID: ICP4_031105A QC Bach: R32297			PrepDate:				
Chromium	8.4		0.11	1.0	µg/L	1	11/5/2003 12:46:05 P

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H-Samples exceed holding time

Results are wet unless otherwise specified

Advanced Technology Laboratories *3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040*

Advanced Technology Laboratories

Date: *10-Nov-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-23-5
Lab Order:	065631		
Project:	JPL GW Mon-4Q03, 04.4428.10	**Collection Date:**	10/23/2003 7:12:00 AM
Lab ID:	065631-007A	**Matrix:**	WATER

Analyte	Result	Qual	MDL	PQL	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**				Analyst: **NS**
RunID: ICP4_031105A QC Bach: R32297			PrepDate:				
Chromium	1.8		0.11	1.0	µg/L	1	11/5/2003 12:48:36 P

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H-Samples exceed holding time

Results are wet unless otherwise specified

Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *10-Nov-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-23-4
Lab Order:	065631		
Project:	JPL GW Mon-4Q03, 04.4428.10	**Collection Date:**	10/23/2003 7:34:00 AM
Lab ID:	065631-008A	**Matrix:**	WATER

Analyte	Result	Qual	MDL	PQL	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**				Analyst: **NS**
RunID: ICP4_031105A	QC Bach: R32297		PrepDate:				
Chromium	2.6		0.11	1.0	µg/L	1	11/5/2003 12:51:08 P

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H-Samples exceed holding time

Results are wet unless otherwise specified

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *10-Nov-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-23-3
Lab Order:	065631		
Project:	JPL GW Mon-4Q03, 04.4428.10	**Collection Date:**	10/23/2003 7:54:00 AM
Lab ID:	065631-009A	**Matrix:**	WATER

Analyte	Result	Qual	MDL	PQL	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**				Analyst: **NS**
RunID: ICP4_031105A QC Bach: R32297			PrepDate:				
Chromium	4.2		0.11	1.0	µg/L	1	11/5/2003 12:58:49 P

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H-Samples exceed holding time

Results are wet unless otherwise specified

Advanced Technology Laboratories *3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040*

Advanced Technology Laboratories

Date: *10-Nov-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-23-2
Lab Order:	065631		
Project:	JPL GW Mon-4Q03, 04.4428.10	**Collection Date:**	10/23/2003 8:24:00 AM
Lab ID:	065631-010A	**Matrix:**	WATER

Analyte	Result	Qual	MDL	PQL	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**				Analyst: **NS**
RunID: ICP4_031105A QC Bach: R32297			PrepDate:				
Chromium	3.5		0.11	1.0	µg/L	1	11/5/2003 1:01:22 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H-Samples exceed holding time

Results are wet unless otherwise specified

Advanced Technology Laboratories *3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040*

Advanced Technology Laboratories

Date: *10-Nov-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-23-1
Lab Order:	065631		
Project:	JPL GW Mon-4Q03, 04.4428.10	**Collection Date:**	10/23/2003 9:01:00 AM
Lab ID:	065631-011A	**Matrix:**	WATER

Analyte	Result	Qual	MDL	PQL	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**				Analyst: **NS**
RunID: ICP4_031105A QC Bach: R32297			PrepDate:				
Chromium	4.6		0.11	1.0	µg/L	1	11/5/2003 1:06:25 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H-Samples exceed holding time

Results are wet unless otherwise specified

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *10-Nov-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	EB-2-10-23-03
Lab Order:	065631		
Project:	JPL GW Mon-4Q03, 04.4428.10	**Collection Date:**	10/23/2003 8:55:00 AM
Lab ID:	065631-012A	**Matrix:**	WATER

Analyte	Result	Qual	MDL	PQL	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**				Analyst: **NS**
RunID: ICP4_031105A QC Bach: R32297			PrepDate:				
Chromium	ND		0.11	1.0	µg/L	1	11/5/2003 1:08:52 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H-Samples exceed holding time

Results are wet unless otherwise specified

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *10-Nov-03*

CLIENT: Applied P & Ch Laboratories
Work Order: 065631
Project: JPL GW Mon-4Q03, 04.4428.10

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID: **MB-R32297** SampType: **MBLK** TestCode: **200.8_W** Units: **µg/L** Prep Date: Run ID: **ICP4_031105A**
Client ID: **ZZZZZ** Batch ID: **R32297** TestNo: **EPA 200.8** Analysis Date: **11/5/2003** SeqNo: **480785**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID: **LCS-R32297** SampType: **LCS** TestCode: **200.8_W** Units: **µg/L** Prep Date: Run ID: **ICP4_031105A**
Client ID: **ZZZZZ** Batch ID: **R32297** TestNo: **EPA 200.8** Analysis Date: **11/5/2003** SeqNo: **480784**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.4	1.0	10	0	104	85	115	0	0		

Sample ID: **065631-010AMS** SampType: **MS** TestCode: **200.8_W** Units: **µg/L** Prep Date: Run ID: **ICP4_031105A**
Client ID: **MW-23-2** Batch ID: **R32297** TestNo: **EPA 200.8** Analysis Date: **11/5/2003** SeqNo: **480780**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.3	1.0	10	3.494	78	80	120	0	0		S

Sample ID: **065631-010AMSD** SampType: **MSD** TestCode: **200.8_W** Units: **µg/L** Prep Date: Run ID: **ICP4_031105A**
Client ID: **MW-23-2** Batch ID: **R32297** TestNo: **EPA 200.8** Analysis Date: **11/5/2003** SeqNo: **480781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.26	1.0	10	3.494	77.7	80	120	11.3	0.301	20	S

Sample ID: **065631-010ADUP** SampType: **DUP** TestCode: **200.8_W** Units: **µg/L** Prep Date: Run ID: **ICP4_031105A**
Client ID: **MW-23-2** Batch ID: **R32297** TestNo: **EPA 200.8** Analysis Date: **11/5/2003** SeqNo: **480786**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	3.313	1.0	0	0	0	0	0	3.494	5.32	30	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
Calculations are based on raw values
DO- Surrogate dilute out
H - Sample exceeded holding time

0019

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Applied P & Ch Laboratories
Work Order: 065631
Project: JPL GW Mon-4Q03, 04.4428.10

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID: **065631-012ADUP** SampType: **DUP** TestCode: **200.8_W** Units: **µg/L** Prep Date: Run ID: **ICP4_031105A**
Client ID: **EB-2-10-23-03** Batch ID: **R32297** TestNo: **EPA 200.8** Analysis Date: **11/5/2003** SeqNo: **480787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0	0	0	0	0	0	0	0	30	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
Calculations are based on raw values
DO- Surrogate dilute out
H - Sample exceeded holding time

Method 200.8

ATL Number:	065631

(EPA 200.8) - INITIAL CALIBRATION

Instrument ID: ICP4

Date(s) Analyzed: 11/05/03

Initial Calibration:

		INTENSITY			
COMPOUND	STD1	STD2	STD3	STD4	r2
CHROMIUM	14950	54673	97728	185764	0.999963

Standard Concentratic	0.5 ppb	5 ppb	10 ppb	20 ppb
Standard ID:	MST031105E	MST031105D	MST031105C	MST031105B

Calibration Acceptance Criteria: > 0.995 Correlation

Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

(EPA 200.8) BLANK *

Instrument ID: ICP 4
Date Digested: 11/5/03
Digestion Method: 7/18/00

QC Batch Number: MB-R32297

Dilution Factor: 1
Matrix: Water
Date Analyzed: 11/5/03

Analyte	DLR	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank MB-R32297	C	M
Chromium	1	0.190		0.123		0.231		0.400		0.041		

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(EPA 200.8) INITIAL AND CONTINUING CALIBRATION VERIFICATION

(EXTERNAL REFERENCE STANDARD)

Instrument ID: ICP4

Date Analyzed: 11/5/03

	Source:	Standard Code:
Initial Calibration Verification:	LEEMAN LABS	MST031105G
Continuing Calibration Verification:	LEEMAN LABS	MST031105G

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found CCV4	Continuing Calibration %R(1)	Continuing Calibration Found CCV5	Continuing Calibration %R(1)	
Chromium	10.0	10.117	101	10.0	10.357	104	10.238	102	

ICV Limits: 90 -110%

CCV Limits: 85 -115%

Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

(EPA 200.8) INITIAL AND CONTINUING CALIBRATION VERIFICATION

(EXTERNAL REFERENCE STANDARD)

Instrument ID: ICP4

Date Analyzed: 11/5/03

	Source:	Standard Code:
Initial Calibration Verification:	LEEMAN LABS	MST031105G
Continuing Calibration Verification:	LEEMAN LABS	MST031105G

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found CCV6	Continuing Calibration %R(1)	Found	%R(1)	
Chromium	10.0	10.117	101	10.0	10.344	103			

ICV Limits: 90 -110%

CCV Limits: 85 -115%

Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

ATL Number: 065631

Instrument ID: ICP4 Internal Standard ID: MST031104A

Date Analyzed: 11/05/2003 Standard Concentration: 50 ug/L

QC Batch: R32297

		Lithium		Sc		Ge		In		Terbium	
		Intensity	% Rec	Intensity	% Rec	Intensity	% Rec	Intensity	% Rec	Intensity	% Rec
Calibration Blank			---	616968	---		---		---		---
Lab ID	Sample Description										
MB-R32297				566330	92						
LCS-R32297				569606	92						
065631-001A				652346	106						
065631-002A				653813	106						
065631-003A				610881	99						
065631-004A				624328	101						
065631-005A				613775	99						
065631-006A				616979	100						
065631-007A				578550	94						
065631-008A				620996	101						
065631-009A				627756	102						
065631-010A				642077	104						
065631-010ADUP				638264	103						
065631-011A				640372	104						
065631-012A				575357	93						
065631-012ADUP				566743	92						
065631-010AMS				710514	115						
065631-010AMSD				706490	115						

* Outside Acceptance Criteria

Acceptance Criteria: 60 - 125%

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

ICP-MS : Turbidity Check and Sample Preparation Log

QC Number: R32297

Date Read / Digested: 11-5-03

Method (Circle one):	Turb. Calibration	Matrix (Circle one):		Acid Lot #
1) 200.8	100 NTU: 10 NTU	1) Drinking Water	4) Soil	Hydrochloric N/A
2) 3010A	Std Code: SCR-0029	2) Ground Water	5) Solid	Nitric N/A
3) 3050B	Initials: NJ	3) Liquid	6) Other water	
4) 3051				

	Sample ID	Turbidity Result *	Sample Wt./Vol.	Spike / LCS Amt. Added	Spike / LCS Conc. (ppm)	Spike Code	Final Vol (ml)	Initials	Comments
	MS 065631-010A	0.12	10	0.10ml	1 ppm	MST031105A	10	NJ	
	MSD ↓	↓	↓	↓	↓	↓	↓	↓	
	Method Blank	—	↓	—	—	—	↓	↓	
	LCS	—	↓	0.10ml	1 ppm	MST031105F	↓	↓	
	Blank MS								
	Blank MSD								
1	065631-001A	-0.02	10				10	NJ	
2	-002	0.15	↓				↓	↓	
3	-003	-0.01	↓				↓	↓	
4	-004	0.07	↓				↓	↓	
5	-005	0.06	↓				↓	↓	
6	-006	0.03	↓				↓	↓	
7	-007	0.93	↓				↓	↓	
8	-008	0.10	↓				↓	↓	
9	-009	0.03	↓				↓	↓	
10	-010	0.12	↓				↓	↓	
11	-011	0.11	↓				↓	↓	
12	-012	-0.09	↓				↓	↓	
13									
14									
15									
16									
17									
18									
19									
20									
DUP	065631-010A 065631-012A	-0.06 -0.09	10				10	NJ	

* Turbidity <1 NTU **DOES NOT** need sample preparation.

Advanced Technology Laboratories, Logbook # 6

Sample/Batch Report

User Name: Nancy
Computer Name: ICPMS PE 6100
Sample File: D:\ELAN\Elandata03Sept\Sample\2003\November\110503.sam
Report Date/Time: Wednesday, November 05, 2003 15:36:00

A/S Loc.	Batch ID	Sample ID	Description	Sample Type	Init. Quant.	Prep. Vol.	Aliquot Vol.	Diluted Vol.	Solids Ratio
7		ICV							
1		ICB							
9		MB- > R322298 NS 11/6/03							
10		LCS-							
11		065632-022A							
12		065632-023A							
13		065632-024A							
14		065632-025A							
15		065632-026A							
16		065632-027A							
17		065632-028A							
18		065632-029A							
7		CCV 1							
8		CCB							
19		065632-030A							
20		065632-030ADUP							
21		065632-031A							
22		065632-032A							
23		065632-033A							
24		065632-034A							
25		065632-035A							
26		065632-036A							
27		065632-036ADUP							
28		065632-037A							
7		CCV 2							
8		CCB							
29		065632-038A							
30		065632-039A							
31		065632-040A							
32		065632-036AMS							
33		065632-036AMSD							
7		CCV 3							
8		CCB							
34		MB- > R32300							
35		LCS-							
36		065632-020A							
37		065632-042A							
38		065632-043A							
39		065632-043ADUP							
40		065632-043AMS							
41		065632-043AMSD							
7		CCV 4							
8		CCB							
42		MB- > R322297 NS 11/6/03							
43		LCS-							
44		065631-001A							
45		065631-002A							
46		065631-003A							
47		065631-004A							

CAL: MST031105 B/20
C/10
D/5
E/0.5

ICV/CCV: MST031105 G
LCS: MST031105 F
MS/MSD: MST031105 A

15669 { LCS: MSP030220A
MS/MSD: MSP030414Q

ICP4
NS 11/6/03

0028

48	065631-005A
49	065631-006A
50	065631-007A
51	065631-008A
7	CCV
8	CCB
52	065631-009A
53	065631-010A
54	065631-010ADUP
55	065631-011A
56	065631-012A
57	065631-012ADUP
58	065631-010AMS
59	065631-010AMSD
7	CCV 6
8	CCB
60	MB-15669
61	LCS-15669
62	065632-021A
63	065632-021ADUP
64	065632-021AMS
65	065632-021AMSD
7	CCV 7
8	CCB

0029

Instrument Tuning Report

File Name: 110503.tun
File Path: D:\ELAN\Elandata03Sept\TUNING\2003\November

Analyte	Exact Mass	Meas. Mass	Mass DAC	Res. DAC	Meas. Pk. Width	Custom Res.
Be	9.012	8.977	2045	2040	0.716	
Mg	23.985	23.979	5698	2020	0.721	
Rh	102.905	102.879	24965	1965	0.728	
Ce	139.905	139.879	33963	2025	0.730	
Pb	207.977	207.978	50416	2270	0.754	
U	238.050	238.024	57622	2435	0.770	

ELAN Instrument Control Session

File Edit Analysis Options Window Help

Data Only Method - c:\elandata\Method\ATL Methods 030317\ATL-TUNING250.mth

Timing | Processing | Equation | Calibration | Sampling | De

Sweeps / Reading: 35
Readings / Replicate: 1
Replicates: 6
Tuning File: default.tun Select...
Optimization File: default.dac Select... Enable Short

Est. Reading Time: 0:00:28.175
Est. Replicate Time: 0:00:28.175
Est. Sample Time: 0:02:49.050

	Analyte [1]	Begin Mass [amu]	End Mass [amu]	Scan Mode [1]	MCA Channels	Dwell Time per AMU [ms]	Int Tim
1		5	10	Scanning	20	20	22 ms
2		22	26	Scanning	20	20	[illegible]
3		102	104	Scanning	20	20	[illegible]
4		139	141	Scanning	20	20	[illegible]
5		206	209	Scanning	20	20	[illegible]

Tuning - D:\ELAN\Elandata03Sept\TUNING\2003\November\110503.tun

Tune Mass Spec | Peak Width Only

Peak Search Window [amu]: 1 Resolution DAC: 2040 for Analyte: B

	Analyte	Mass [amu]	Measured Mass [amu]	Mass Calibration DAC Value	Resolution DAC Value	Meas Wid
1	Be	9.0122	8.977	2045	2040	[illegible]
2	Mg	23.985	23.9787	5698	2020	[illegible]
3	Rh	102.905	102.879	24965	1965	[illegible]
4	Ce	139.905	139.879	33963	2025	[illegible]
5	Pb	207.977	207.978	50416	2270	
6	U	238.05	238.024	57622	2435	

Daily Performance Report

Sample ID: 110503-daily
Sample Date/Time: Wednesday, November 05, 2003 09:48:41
Sample Description:
Method File: c:\elandata\Method\Daily.mth
Dataset File: d:\elan\elandata03sept\daily performance\2003\november\110503-daily.002
Tuning File: c:\elandata\Tuning\default.tun
Optimization File: c:\elandata\Optimize\default.dac
Dual Detector Mode: Pulse
Acq. Dead Time(ns): 35
Current Dead Time (ns): 35

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD
	Mg	24.0	40406.1	40406.081	1042.389	2.6
	Rh	102.9	207802.5	207802.454	302.755	0.1
	In	114.9	265952.7	265952.736	5351.347	2.0
	Pb	208.0	158265.5	158265.495	2903.462	1.8
⌈>	Ba	137.9	221410.1	221410.132	1895.886	0.9
⌊	Ba++	69.0	3404.4	0.015	0.000	0.8
⌈>	Ce	139.9	257212.9	257212.887	7.199	0.0
⌊	CeO	155.9	7349.0	0.029	0.000	0.3
	Bkgd	220.0	7.5	7.500	3.536	47.1

Current Optimization File Data

Current Value	Description
0.84	Nebulizer Gas Flow
10.00	Lens Voltage
1100.00	ICP RF Power
-1925.00	Analog Stage Voltage
1925.00	Pulse Stage Voltage
85.00	Discriminator Threshold
-1.50	AC Rod Offset
60.00	Service DAC 1
0.00	Quadrupole Rod Offset

Current Autolens Data

Analyte	Mass	Num of Pts	DAC Value	Maximum Intensity
Be	9	9	9.0	6983.7
Co	59	9	10.0	94863.9
In	115	9	11.5	192753.7

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 10:07:02
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\Blank.001
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: Blank
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7		90829	2.6			ug/L	%
	Ge	72		129518	0.6			ug/L	%
>	**Sc-1**	45		616968	0.7			ug/L	%
	Cr	52		9272	4.2			ug/L	%
	In	115		1301215	0.7			ug/L	%
	Tb	159		1575022	1.1			ug/L	%
	Sc	45		616968	0.7			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 10:09:31
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\Standard 1.002
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: Standard 1
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	87683	1.5			ug/L	%
	Ge	72	129518	129380	0.8			ug/L	%
>	**Sc-1**	45	616968	611825	0.7			ug/L	%
	Cr	52	9272	14950	0.9	**0.500**	0.019	ug/L	3.9 %
	In	115	1301215	1319168	0.4			ug/L	%
	Tb	159	1575022	1565698	0.8			ug/L	%
	Sc	45	616968	611825	0.7			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 10:12:15
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\Standard 2.003
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: Standard 2
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	86402	1.6			ug/L	%
	Ge	72	129518	127004	0.5			ug/L	%
>	**Sc-1**	45	616968	609610	0.9			ug/L	%
	Cr	52	9272	54673	0.7	**4.987**	0.019	ug/L	0.4 %
	In	115	1301215	1291222	0.8			ug/L	%
	Tb	159	1575022	1542319	0.4			ug/L	%
	Sc	45	616968	609610	0.9			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 10:15:01
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\Standard 3.004
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: Standard 3
Sample Type:

Summary

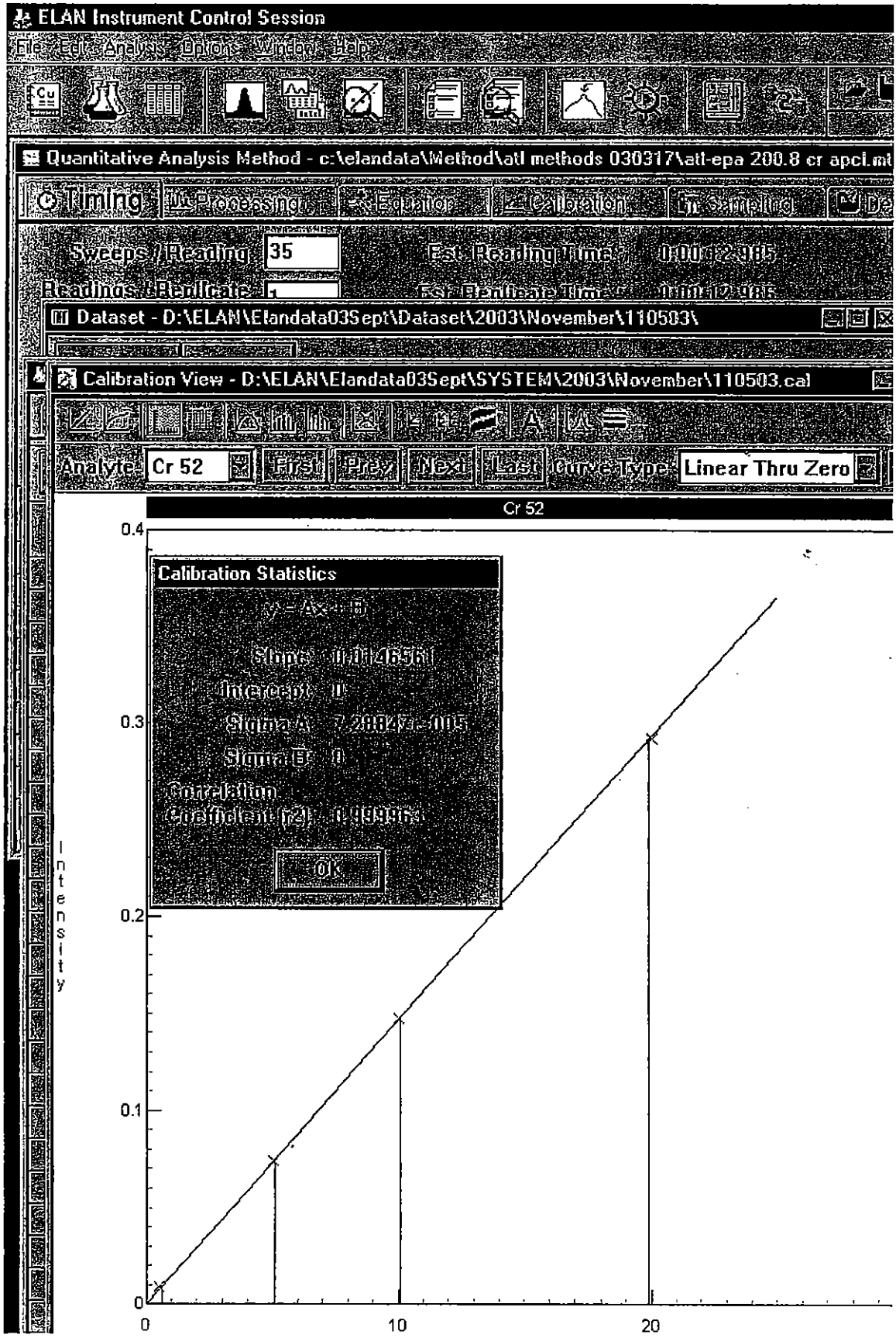
	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	87953	1.6			ug/L	%
	Ge	72	129518	126333	0.8			ug/L	%
>	**Sc-1**	45	616968	600657	0.4			ug/L	%
	Cr	52	9272	97728	0.9	**9.972**	0.068	ug/L	0.7 %
	In	115	1301215	1267321	1.0			ug/L	%
	Tb	159	1575022	1524276	0.4			ug/L	%
	Sc	45	616968	600657	0.4			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 10:17:48
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\Standard 4.005
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: Standard 4
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	**Conc. Mean**	Conc. SD		Conc. RSD
	Li	7	90829	90115	1.0			ug/L	%
	Ge	72	129518	127667	0.7			ug/L	%
[>	**Sc-1**	45	616968	604749	1.0			ug/L	%
[	**Cr**	52	9272	185764	0.5	**19.935**	0.247	ug/L	1.2 %
	In	115	1301215	1280189	0.8			ug/L	%
	Tb	159	1575022	1522969	0.7			ug/L	%
	Sc	45	616968	604749	1.0			ug/L	%


ELAN Instrument Control Session
File Edit Analysis Options Window Help
Quantitative Analysis Method - c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mt
Timing
Processing
Equation
Calibration
Sampling
Sweeps / Reading 35
Readings / Replicate
Dataset - D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\
Calibration View - D:\ELAN\Elandata03Sept\SYSTEM\2003\November\110503.cal
Analyte Cr 52
First
Prev
Next
Last
Curve Type Linear Thru Zero
Cr 52
Calibration Statistics
Y = Ax + B
Slope
Intercept 0
Sigma A
Sigma B 0
Correlation
Coefficient (r2)
OK
Intensity
0.4
0.3
0.2
0.1
0
0
10
20

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 10:20:36
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\ICV.006
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: ICV
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	88787	1.4			ug/L	%
	Ge	72	129518	126153	0.4			ug/L	%
>	Sc-1	45	616968	597446	1.0			ug/L	%
	Cr	52	9272	97561	1.4	**10.117**	0.152	ug/L	1.5 %
	In	115	1301215	1252997	0.4			ug/L	%
	Tb	159	1575022	1507170	0.3			ug/L	%
	Sc	45	616968	597446	1.0			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 10:23:07
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\ICB.007
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: ICB
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	89323	1.1			ug/L	%
	Ge	72	129518	126458	1.4			ug/L	%
>	**Sc-1**	45	616968	598152	0.9			ug/L	%
	Cr	52	9272	10653	2.0	**0.190**	0.030	ug/L	16.0 %
	In	115	1301215	1255560	1.3			ug/L	%
	Tb	159	1575022	1503616	1.5			ug/L	%
	Sc	45	616968	598152	0.9			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 12:13:52
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\CCV.047
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: CCV
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	67562	2.4			ug/L	%
	Ge	72	129518	116941	1.5			ug/L	%
[>	**Sc-1**	45	616968	557930	1.7			ug/L	%
[	**Cr**	52	9272	93070	1.6	**10.357**	0.013	ug/L	0.1 %
	In	115	1301215	1231420	1.2			ug/L	%
	Tb	159	1575022	1446463	1.6			ug/L	%
	Sc	45	616968	557930	1.7			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 12:16:26
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\CCB.048
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: CCB
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	68280	1.5			ug/L	%
	Ge	72	129518	117295	0.1			ug/L	%
[>	**Sc-1**	45	616968	563829	0.7			ug/L	%
[	**Cr**	52	9272	9492	1.7	**0.123**	0.028	ug/L	22.5 %
	In	115	1301215	1239307	0.4			ug/L	%
	Tb	159	1575022	1466025	0.5			ug/L	%
	Sc	45	616968	563829	0.7			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 12:28:38
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\MB-.049
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: MB- R32297 NS 11/6/03
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	71789	2.5			ug/L	%
	Ge	72	129518	118706	0.8			ug/L	%
[>	**Sc-1**	45	616968	566330	0.3			ug/L	%
[	**Cr**	52	9272	8854	3.1	**0.041**	0.036	ug/L	85.7 %
	In	115	1301215	1237440	0.9			ug/L	%
	Tb	159	1575022	1476733	1.4			ug/L	%
	Sc	45	616968	566330	0.3			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 12:31:06
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\LCS-.050
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: LCS- R32207 NS 11/6/03
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	72381	1.0			ug/L	%
	Ge	72	129518	118293	1.8			ug/L	%
>	Sc-1	45	616968	569606	1.5			ug/L	%
	Cr	52	9272	95332	0.7	**10.396**	0.168	ug/L	1.6 %
	In	115	1301215	1242892	0.3			ug/L	%
	Tb	159	1575022	1491543	1.0			ug/L	%
	Sc	45	616968	569606	1.5			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 12:33:35
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\065631-001A.051
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: 065631-001A
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	70538	0.3			ug/L	%
	Ge	72	129518	124013	0.9			ug/L	%
⌈>	Sc-1	45	616968	652346	0.9			ug/L	%
L	Cr	52	9272	54619	1.9	4.688	0.159	ug/L	3.4 %
	In	115	1301215	1286717	0.3			ug/L	%
	Tb	159	1575022	1506791	1.2			ug/L	%
	Sc	45	616968	652346	0.9			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 12:36:04
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\065631-002A.052
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: 065631-002A
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	71109	1.9			ug/L	%
	Ge	72	129518	125465	0.7			ug/L	%
>	**Sc-1**	45	616968	653813	1.4			ug/L	%
	Cr	52	9272	36376	2.1	**2.771**	0.031	ug/L	1.1 %
	In	115	1301215	1299190	0.5			ug/L	%
	Tb	159	1575022	1506678	1.0			ug/L	%
	Sc	45	616968	653813	1.4			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 12:38:34
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\065631-003A.053
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: 065631-003A
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	69310	3.3			ug/L	%
	Ge	72	129518	121846	0.2			ug/L	%
[>	**Sc-1**	45	616968	610881	0.5			ug/L	%
[	**Cr**	52	9272	23849	0.9	**1.638**	0.012	ug/L	0.7 %
	In	115	1301215	1249534	1.1			ug/L	%
	Tb	159	1575022	1470768	0.2			ug/L	%
	Sc	45	616968	610881	0.5			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 12:41:03
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\065631-004A.054
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: 065631-004A
Sample Type:

Summary

Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
Li	7	90829	69651	0.7			ug/L	%
Ge	72	129518	119758	0.2			ug/L	%
Sc-1	45	616968	624328	0.5			ug/L	%
Cr	52	9272	35955	2.0	2.904	0.082	ug/L	2.8 %
In	115	1301215	1232507	0.3			ug/L	%
Tb	159	1575022	1447318	1.0			ug/L	%
Sc	45	616968	624328	0.5			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 12:43:34
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\065631-005A.055
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: 065631-005A
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	**Conc. Mean**	Conc. SD		Conc. RSD
	Li	7	90829	71519	2.3			ug/L	%
	Ge	72	129518	118482	1.1			ug/L	%
[>	**Sc-1**	45	616968	613775	0.1			ug/L	%
[	**Cr**	52	9272	81737	1.3	**8.061**	0.119	ug/L	1.5 %
	In	115	1301215	1227141	0.8			ug/L	%
	Tb	159	1575022	1436207	0.5			ug/L	%
	Sc	45	616968	613775	0.1			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 12:46:05
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\065631-006A.056
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: 065631-006A
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	**Conc. Mean**	Conc. SD		Conc. RSD
	Li	7	90829	73545	0.8			ug/L	%
	Ge	72	129518	118886	1.0			ug/L	%
>	**Sc-1**	45	616968	616979	1.1			ug/L	%
	Cr	52	9272	85334	1.7	**8.412**	0.122	ug/L	1.5 %
	In	115	1301215	1247624	0.4			ug/L	%
	Tb	159	1575022	1456493	0.2			ug/L	%
	Sc	45	616968	616979	1.1			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 12:48:36
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\065631-007A.057
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: 065631-007A
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	66535	0.4			ug/L	%
	Ge	72	129518	120107	0.5			ug/L	%
>	**Sc-1**	45	616968	578550	0.2			ug/L	%
	Cr	52	9272	24165	0.6	**1.825**	0.017	ug/L	0.9 %
	In	115	1301215	1205800	0.7			ug/L	%
	Tb	159	1575022	1442820	0.6			ug/L	%
	Sc	45	616968	578550	0.2			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 12:51:08
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\065631-008A.058
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: 065631-008A
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	67533	1.4			ug/L	%
	Ge	72	129518	119141	0.2			ug/L	%
[>	**Sc-1**	45	616968	620996	0.6			ug/L	%
[	**Cr**	52	9272	33203	0.7	**2.623**	0.049	ug/L	1.9 %
	In	115	1301215	1226982	0.6			ug/L	%
	Tb	159	1575022	1432720	0.6			ug/L	%
	Sc	45	616968	620996	0.6			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 12:53:41
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\CCV.059
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: CCV
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	69867	2.6			ug/L	%
	Ge	72	129518	113168	0.7			ug/L	%
>	**Sc-1**	45	616968	546609	0.3			ug/L	%
	Cr	52	9272	90233	1.1	**10.238**	0.158	ug/L	1.5 %
	In	115	1301215	1176808	0.7			ug/L	%
	Tb	159	1575022	1398509	0.7			ug/L	%
	Sc	45	616968	546609	0.3			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 12:56:16
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\CCB.060
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: CCB
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	68006	4.7			ug/L	%
	Ge	72	129518	113897	1.2			ug/L	%
[>	**Sc-1**	45	616968	538248	1.2			ug/L	%
[	**Cr**	52	9272	9911	1.4	**0.231**	0.033	ug/L	14.1 %
	In	115	1301215	1183925	1.3			ug/L	%
	Tb	159	1575022	1406897	1.0			ug/L	%
	Sc	45	616968	538248	1.2			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 12:58:49
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\065631-009A.061
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: 065631-009A
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	66515	0.8			ug/L	%
	Ge	72	129518	118727	0.2			ug/L	%
>	**Sc-1**	45	616968	627756	0.8			ug/L	%
	Cr	52	9272	48305	0.3	**4.225**	0.058	ug/L	1.4 %
	In	115	1301215	1227885	0.3			ug/L	%
	Tb	159	1575022	1431882	0.5			ug/L	%
	Sc	45	616968	627756	0.8			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 13:01:22
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\065631-010A.062
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: 065631-010A
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	67039	1.6			ug/L	%
	Ge	72	129518	115871	0.6			ug/L	%
>	Sc-1	45	616968	642077	1.7			ug/L	%
	Cr	52	9272	42528	1.1	3.494	0.048	ug/L	1.4 %
	In	115	1301215	1177837	1.0			ug/L	%
	Tb	159	1575022	1392113	0.8			ug/L	%
	Sc	45	616968	642077	1.7			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 13:03:56
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\065631-010ADUP.063
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: 065631-010ADUP
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	67895	0.9			ug/L	%
	Ge	72	129518	114733	0.9			ug/L	%
[>	**Sc-1**	45	616968	638264	1.3			ug/L	%
[	**Cr**	52	9272	40575	0.4	**3.313**	0.040	ug/L	1.2 %
	In	115	1301215	1179851	1.0			ug/L	%
	Tb	159	1575022	1388872	0.1			ug/L	%
	Sc	45	616968	638264	1.3			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 13:06:25
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\065631-011A.064
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: 065631-011A
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	69672	2.1			ug/L	%
	Ge	72	129518	112887	1.2			ug/L	%
>	**Sc-1**	45	616968	640372	1.6			ug/L	%
	Cr	52	9272	53068	1.7	**4.629**	0.090	ug/L	1.9 %
	In	115	1301215	1165684	0.9			ug/L	%
	Tb	159	1575022	1382707	1.1			ug/L	%
	Sc	45	616968	640372	1.6			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 13:08:52
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\065631-012A.065
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: 065631-012A
Sample Type:

Summary

Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
Li	7	90829	72795	1.4			ug/L	%
Ge	72	129518	122254	0.7			ug/L	%
> **Sc-1**	45	616968	575357	1.3			ug/L	%
Cr	52	9272	7461	1.0	-0.141	0.008	ug/L	6.0 %
In	115	1301215	1317364	1.8			ug/L	%
Tb	159	1575022	1546637	1.1			ug/L	%
Sc	45	616968	575357	1.3			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 13:11:19
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\065631-012ADUP.066
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: 065631-012ADUP
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	70748	0.6			ug/L	%
	Ge	72	129518	119576	1.4			ug/L	%
>	**Sc-1**	45	616968	566743	1.1			ug/L	%
	Cr	52	9272	6537	2.1	**-0.238**	0.012	ug/L	4.9 %
	In	115	1301215	1297175	1.1			ug/L	%
	Tb	159	1575022	1521852	0.3			ug/L	%
	Sc	45	616968	566743	1.1			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 13:13:46
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\065631-010AMS.067
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: 065631-010AMS
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	**Conc. Mean**	Conc. SD		Conc. RSD
	Li	7	90829	76358	0.7			ug/L	%
	Ge	72	129518	123039	0.8			ug/L	%
>	**Sc-1**	45	616968	710514	1.1			ug/L	%
	Cr	52	9272	128302	1.0	**11.296**	0.025	ug/L	0.2 %
	In	115	1301215	1315605	0.7			ug/L	%
	Tb	159	1575022	1557804	1.1			ug/L	%
	Sc	45	616968	710514	1.1			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 13:16:14
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\065631-010AMSD.068
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: 065631-010AMSD
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	76722	0.5			ug/L	%
	Ge	72	129518	122807	0.3			ug/L	%
[>	**Sc-1**	45	616968	706490	0.4			ug/L	%
[	**Cr**	52	9272	127227	0.6	**11.262**	0.094	ug/L	0.8 %
	In	115	1301215	1311994	0.2			ug/L	%
	Tb	159	1575022	1556362	1.6			ug/L	%
	Sc	45	616968	706490	0.4			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 13:18:45
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\CCV.069
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: CCV
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	75879	0.7			ug/L	%
	Ge	72	129518	120944	0.4			ug/L	%
>	Sc-1	45	616968	585567	0.8			ug/L	%
	Cr	52	9272	97576	0.9	**10.344**	0.010	ug/L	0.1 %
	In	115	1301215	1311206	0.6			ug/L	%
	Tb	159	1575022	1533488	0.7			ug/L	%
	Sc	45	616968	585567	0.8			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 13:21:19
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\CCB.070
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: CCB
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	73325	2.2			ug/L	%
	Ge	72	129518	119222	0.8			ug/L	%
>	Sc-1	45	616968	585275	0.2			ug/L	%
	Cr	52	9272	12228	3.2	**0.400**	0.049	ug/L	12.2 %
	In	115	1301215	1303078	1.4			ug/L	%
	Tb	159	1575022	1550370	0.6			ug/L	%
	Sc	45	616968	585275	0.2			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 14:23:28
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\MB-15669.071
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: MB-15669
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	69843	1.5			ug/L	%
	Ge	72	129518	122315	0.3			ug/L	%
>	**Sc-1**	45	616968	583164	0.4			ug/L	%
	Cr	52	9272	10007	1.7	**0.146**	0.024	ug/L	16.6 %
	In	115	1301215	1333441	0.9			ug/L	%
	Tb	159	1575022	1586036	1.3			ug/L	%
	Sc	45	616968	583164	0.4			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 14:25:57
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\LCS-15669.072
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: LCS-15669
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	**Conc. Mean**	Conc. SD		Conc. RSD
	Li	7	90829	70086	3.9			ug/L	%
	Ge	72	129518	121684	0.9			ug/L	%
>	**Sc-1**	45	616968	580555	0.3			ug/L	%
	Cr	52	9272	79689	0.9	**8.340**	0.090	ug/L	1.1 %
	In	115	1301215	1321528	0.5			ug/L	%
	Tb	159	1575022	1580849	0.3			ug/L	%
	Sc	45	616968	580555	0.3			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 14:28:26
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\065632-021A.073
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: 065632-021A
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	72408	3.3			ug/L	%
	Ge	72	129518	126666	0.5			ug/L	%
>	**Sc-1**	45	616968	624439	2.0			ug/L	%
	Cr	52	9272	12036	0.4	**0.290**	0.028	ug/L	9.5 %
	In	115	1301215	1379250	0.8			ug/L	%
	Tb	159	1575022	1638901	2.0			ug/L	%
	Sc	45	616968	624439	2.0			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 14:30:56
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\065632-021ADUP.074
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: 065632-021ADUP
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	70020	1.2			ug/L	%
	Ge	72	129518	124657	0.5			ug/L	%
>	Sc-1	45	616968	612642	0.6			ug/L	%
	Cr	52	9272	9606	3.0	**0.045**	0.038	ug/L	85.8 %
	In	115	1301215	1346703	1.8			ug/L	%
	Tb	159	1575022	1619035	1.3			ug/L	%
	Sc	45	616968	612642	0.6			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 14:33:26
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\065632-021AMS.075
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: 065632-021AMS
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	72333	2.0			ug/L	%
	Ge	72	129518	127263	0.9			ug/L	%
⌈>	**Sc-1**	45	616968	622343	2.8			ug/L	%
⌊	**Cr**	52	9272	81190	1.5	**7.878**	0.156	ug/L	2.0 %
	In	115	1301215	1379095	0.9			ug/L	%
	Tb	159	1575022	1652446	1.5			ug/L	%
	Sc	45	616968	622343	2.8			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 14:35:57
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\065632-021AMSD.076
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: 065632-021AMSD
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	73070	0.9			ug/L	%
	Ge	72	129518	127716	0.7			ug/L	%
>	**Sc-1**	45	616968	634833	0.9			ug/L	%
	Cr	52	9272	83213	0.3	**7.919**	0.060	ug/L	0.8 %
	In	115	1301215	1369402	0.9			ug/L	%
	Tb	159	1575022	1641729	0.3			ug/L	%
	Sc	45	616968	634833	0.9			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 14:38:29
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\CCV.077
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: CCV
Sample Type:

Summary

	Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
	Li	7	90829	73583	1.3			ug/L	%
	Ge	72	129518	129930	0.4			ug/L	%
>	**Sc-1**	45	616968	626874	0.8			ug/L	%
	Cr	52	9272	105238	0.7	**10.429**	0.104	ug/L	1.0 %
	In	115	1301215	1423693	0.5			ug/L	%
	Tb	159	1575022	1686951	0.4			ug/L	%
	Sc	45	616968	626874	0.8			ug/L	%

Quantitative Analysis Summary

Sample Date/Time: Wednesday, November 05, 2003 14:41:04
Dataset File: D:\ELAN\Elandata03Sept\Dataset\2003\November\110503\CCB.078
Method File: c:\elandata\Method\atl methods 030317\atl-epa 200.8 cr apcl.mth
Optimization File: c:\elandata\Optimize\default.dac
Number of Replicates: 3
Sample ID: CCB
Sample Type:

Summary

Analyte	Mass	Blank Intensity	Meas. Intensity	Int. RSD	Conc. Mean	Conc. SD		Conc. RSD
Li	7	90829	75558	1.5			ug/L	%
Ge	72	129518	131121	0.5			ug/L	%
> **Sc-1**	45	616968	635208	1.3			ug/L	%
Cr	52	9272	11375	2.8	**0.197**	0.035	ug/L	18.0 %
In	115	1301215	1441855	0.8			ug/L	%
Tb	159	1575022	1703766	0.4			ug/L	%
Sc	45	616968	635208	1.3			ug/L	%

Metals Working Standard Prep Log

Date	Standard Name	Working Std Code	Stock Info: Stock Std Code	Preparation: Stock Concentration	Preparation: Amount Taken from Stock
10-31-03	ICP12 - ICV/CCV @10	MST031031G	MST031031F	1 ppm	0.5
11-4-03	ICPMS - Internal Std.	MST031104A	MST030247A Li	1000 ppm	1
			B Ge		
			C Tb		
			D Sc		
			E In		
			F Tm		
	ICPMS - STD1	MST031104B	MST030402A	10 ppm	5
	- 20	C	MST031104B	1 ppm	1
	- 10	D	C	20 ppb	25
	- 5	E	D	10 ppb	25
	- 0.5	F	E	5 ppb	5
	ICPMS - LCS1	G	MST021216D	10 ppm	5
	ICV/CCV @10	H	MST031104	1 ppm	0.5
11-5-03	ICPMS - STD1	MST031105A	MST030402A	10 ppm	5
	- 20	B	MST031105A	1 ppm	1
	- 10	C	B	20 ppb	25
	- 5	D	C	10 ppb	25
	- 0.5	E	D	5 ppb	5
	ICPMS - LCS1	F	MST021216D	10 ppm	5

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Metals Working Standard Prep Log

Preparation			Expiration Dates			
			Exp Date			
Final Vol. (ml)	Final Conc. (ug/ml)	Diluent Matrix (ie H_2O)	Working STD *	Manufacturer	Comments	Initials
50	10 ppb	DI H_2O + 1% HNO_3	01-29-04	Leeman		WJ
100	10 ppm	DI H_2O + 1% HNO_3	02-02-04	High Purity		WJ
50	1 ppm	DI H_2O + 1% HNO_3	02-02-04	Leeman		WJ
	20 ppb					
	10 ppb					
	5 ppb					
	0.5 ppb					
	1 ppm			Leeman		
	10 ppb					
50	1 ppm	DI H_2O + 1% HNO_3	02-03-04	Leeman		WJ
	20 ppb					
	10 ppb					
	5 ppb					
	0.5 ppb					
	1 ppm			Leeman		

* Check working std versus all manufacturer's

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Metals Working Standard Prep Log

			Stock Info	Preparation	
Date	Standard Name	Working Std Code	Stock Std Code	Stock Concentration	Amount Taken from Stock
11-5-03	ICPMS-IW/KCW @10	MST031105G	MST031105F	1 ppm	0.5

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Metals Working Standard Prep Log

	Preparation			Expiration Dates			
	Final Vol. (ml)	Final Conc. (ug/ml)	Diluent Matrix (ie H_2O)	Exp Date: Working STD *	Exp Date: Manufacturer	Comments	Initials
1	50	10 ppb	DI H_2O + 1% HNO_3	02-07-04	Lemon		NJ
5							
10							
15							
20							

* Check working std versus all manufacturer's

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Metals Working Standard Prep Log

Date	Standard Name	Working Std Code	Stock Info: Stock Std Code	Preparation: Stock Concentration	Preparation: Amount Taken from Stock
10-21-03	ICPMS - 500	MST031021 H	MST031021 G	1000 ppb	25
↓	↓ - 100	↓ I	↓ H	500 ppb	10
↓	ICPMS - ICS/CCV @ 500	↓ J	↓ E	1 ppm / 10 ppm	2.5
10-17-03	ICPMS - Tuning Stock Soln	MST031017 L	MST-010523E Mg	1000 ppm	0.5
↓	↓	↓	MST030414H Cu	↓	↓
			MST030217 J Rh		
			MST030414E Cd		
			↓ C Ba		
			MST030217 G Ce		
			MST030414P Pb		
			↓ D Be		
			↓ G Co		
			MST030217 H Tl		
			↓ I U		
	↓	↓	↓ E In	↓	↓
↓	10 ppb Tuning Solution	MST031017 M	MST031017 L	1 ppm	5
10-23-03	ICPMS - STD 1	MST031023 A	MST030402 A MST030402 B	10 ppm 1000 ppm	5 0.05
↓	↓ - 20	↓ B	MST031023 A	1 ppm	1
	↓ - 10	↓ C	↓ B	20 ppb	25
↓	↓ - 5	↓ D	↓ C	10 ppb	25

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Metals Working Standard Prep Log

	Preparation			Expiration Dates			
	Final Vol. (ml)	Final Conc. (ug/ml)	Diluent Matrix (ie H_2O)	Exp Date: Working STD *	Exp Date: Manufacturer	Comments	Initials
1	50	500 ppb	DI H_2O + 1% HNO_3	01-19-04	Leeman	Ca, Mg	NS
		100 ppb					
		500 ppb					
	500	1 ppm	DI H_2O + 1% HNO_3	01-15-04	Ultra Scientific		NS
5					High Purity		
10							
15							
	10	10 ppb			Ultra Scientific High Purity		
		1 ppm	DI H_2O + 1% HNO_3	01-21-04	Leeman		NS
		20 ppb					
		10 ppb					
20		5 ppb					

* Check working std versus all manufacturer's

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Standard LOG

Standard ID:	MST030402A		
Standard Name	CHECKMATE STANDARD 1	Type:	Stock
Date Prepared		BY:	Nancy Sibucao
Date Expires:	3/24/04		
Department	ICPMS_PR	Status:	New
Vendor:	LEEMAN LABS		
Lot Number:	573501a		

Comments:

Final Volume: 500 mL

Stock Source		**Base Units**		**Amount Added**
Analytes		**CAS**	Conc:	**µg/mL**
A	ALUMINUM			10.02
A	ANTIMONY			10.02
A	ARSENIC			10.02
A	BARIUM			10.02
A	BERYLLIUM			10.02
A	BORON			10.02
A	CADMIUM			10.02
A	CALCIUM			100.1
A	CHROMIUM			10.02
A	COBALT			10.02
A	COPPER			10.02
A	IRON			10.07
A	LEAD			10.03
A	MAGNESIUM			100.1
A	MANGANESE			10.03
A	MOLYBDENUM			10.04
A	NICKEL			10.02
A	POTASSIUM			100
A	SELENIUM			10.02
A	SILICON			10.04
A	SODIUM			100.1
A	THALLIUM			10.02
A	VANADIUM			10.03
A	ZINC			10.02

Advanced Technology Laboratories

Standard LOG

Standard ID:	MST021216D		
Standard Name	Check Mate Standard 1	Type:	Stock
Date Prepared		BY:	Nancy Sibucao
Date Expires:	11/29/03		
Department	ICPMS_PR	Status:	New
Vendor:	LEEMAN LABS		
Lot Number:	549701		

Comments:

Final Volume: 500 mL

Stock Source		Base Units		Amount Added
Analytes		**CAS**	Conc:	**µg/mL**
A	ALUMINUM			10
A	ANTIMONY			10
A	ARSENIC			10
A	BARIUM			10
A	BERYLLIUM			10
A	BORON			10
A	CADMIUM			10
A	CALCIUM			100
A	CHROMIUM			10
A	COBALT			10
A	COPPER			10
A	IRON			10.05
A	LEAD			10.01
A	MAGNESIUM			99.99
A	MANGANESE			10.01
A	MOLYBDENUM			10.02
A	NICKEL			10
A	POTASSIUM			100
A	SELENIUM			10
A	SILICON			10.02
A	SODIUM			100.3
A	THALLIUM			10
A	VANADIUM			10.01
A	ZINC			10