

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 ID: JPL

Project No: 04-4428.10
Service ID: 31402

Anal. Method 7196
Collected by:

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
03-1402-1	DUPE-1-1Q03	Water	01/30/03	01/30/03	01/30/03	03W1308	mg/L	0.01	<0.01	U
03-1402-2	EB-2-1/30/03	Water	01/30/03	01/30/03	01/30/03	03W1308	mg/L	0.01	<0.01	U
03-1402-3	MW-20-1	Water	01/30/03	01/30/03	01/30/03	03W1308	mg/L	0.01	<0.01	U
03-1402-4	MW-20-2	Water	01/30/03	01/30/03	01/30/03	03W1308	mg/L	0.01	<0.01	U
03-1402-5	MW-20-3	Water	01/30/03	01/30/03	01/30/03	03W1308	mg/L	0.01	<0.01	U
03-1402-6	MW-20-4	Water	01/30/03	01/30/03	01/30/03	03W1308	mg/L	0.01	<0.01	U
03-1402-7	MW-20-5	Water	01/30/03	01/30/03	01/30/03	03W1308	mg/L	0.01	<0.01	U
03W1308-MB-01	03W1308-MB-01	Water	01/30/03	01/30/03	01/30/03	03W1308	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 ID: JPL

Project No: 04-4428.10
Service ID: 31402

Anal. Method 314.0
Collected by:

Component Name: Perchlorate
CAS No:

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-1402-1	DUPE-1-1Q03	Water	01/30/03	01/30/03	02/03/03	03W1345	µg/L	4	< 4	U
03-1402-2	EB-2-1/30/03	Water	01/30/03	01/30/03	02/10/03	03W1424	µg/L	4	< 4	U
03-1402-3	MW-20-1	Water	01/30/03	01/30/03	02/03/03	03W1345	µg/L	4	< 4	U
03-1402-4	MW-20-2	Water	01/30/03	01/30/03	02/03/03	03W1345	µg/L	4	< 4	U
03-1402-5	MW-20-3	Water	01/30/03	01/30/03	02/03/03	03W1345	µg/L	4	< 4	U
03-1402-6	MW-20-4	Water	01/30/03	01/30/03	02/10/03	03W1424	µg/L	4	< 4	U
03-1402-7	MW-20-5	Water	01/30/03	01/30/03	02/03/03	03W1345	µg/L	4	< 4	U
03W1345-MB-01	03W1345-MB-01	Water	02/03/03	02/03/03	02/03/03	03W1345	µg/L	4	< 4	U
03W1424-MB-01	03W1424-MB-01	Water	02/10/03	02/10/03	02/10/03	03W1424	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.

APCL Perchlorate Analysis Report

Sample Name : 1402-01 f=1

Data File Name : C:\DATA\03W1345K\1402-01_007.DXD

Method File Name : c:\peaknet\method\314.0-9.met

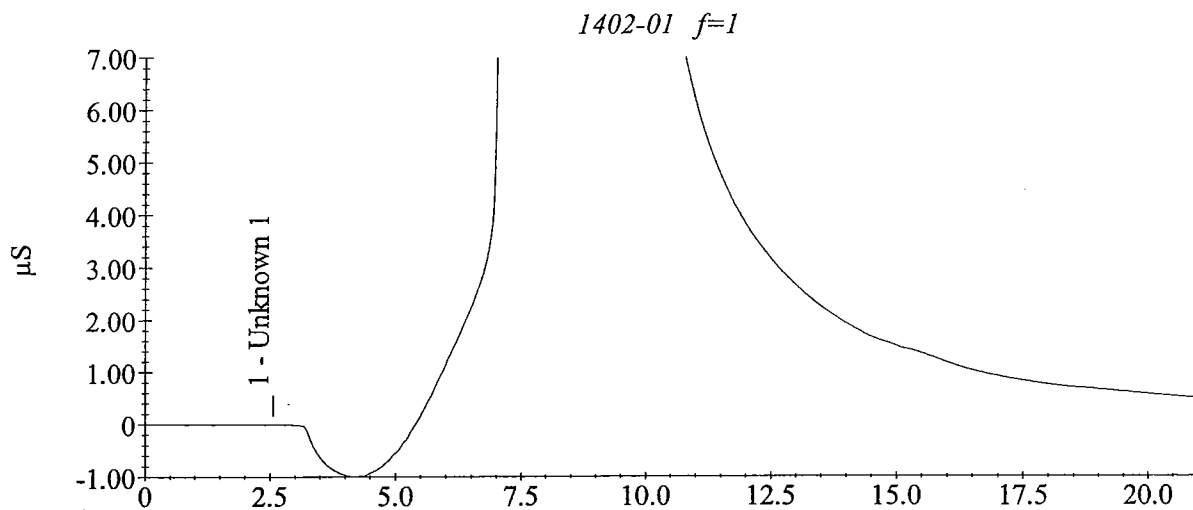
Date Time Collected : 02/03/2003 1:40:49 PM

System Operator : wei wang

Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
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APCL Perchlorate Analysis Report

Sample Name : MB

Data File Name : C:\DATA\03W1345K\W1345K K01_002.DXD

Method File Name : c:\peaknet\method\314.0-9.met

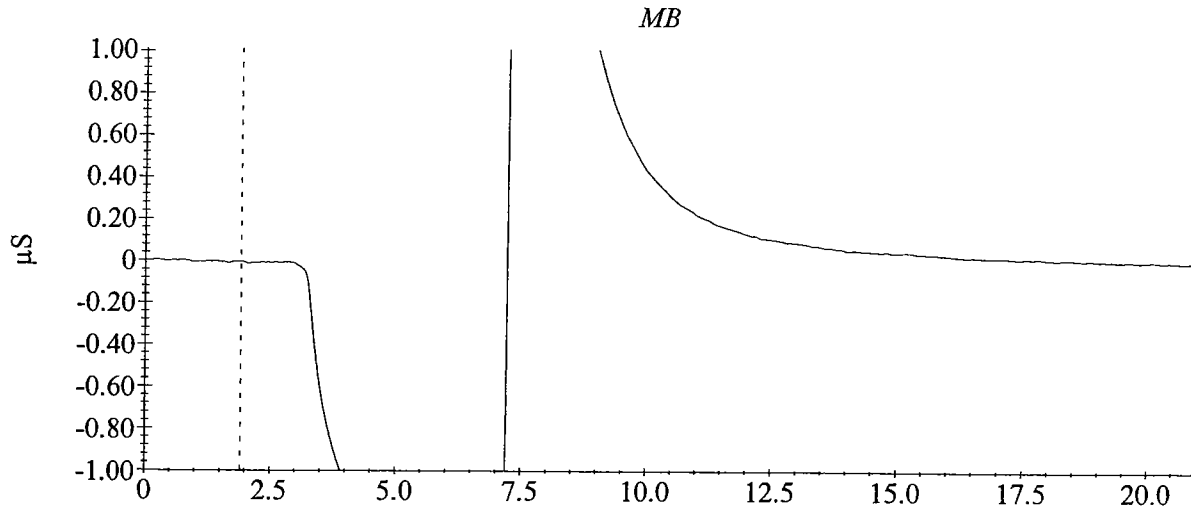
Date Time Collected : 02/03/2003 11:42:33 AM

System Operator : wei wang

Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
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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: 31402

Project ID: JPL

Project No: 04-4428.10

Sample Matrix: Water

Batch No: 03W1345

LCS Filename: -

Date Analyzed: 020303

Time Analyzed: 12:30

LCSD Filename: -

Date Analyzed: -

Time Analyzed: -

Spiked Components	Unit	Spike Added	Concentration		LCS Rec% #	QC Limit, % REC
			Unspiked	LCS		
PERCHLORATE	µg/L	25	0	24.6	98	80-120
# of Out-of-control					0	

Column to be used to flag recovery and RPD values:

* – Values outside of contract required QC Limits

D – Spiked components diluted out

Comments: _____

APCL Perchlorate Analysis Report

Sample Name : lcs 25ppb w7373C

Data File Name : C:\DATA\03W1345K\W1345K L01_004.DXD

Method File Name : c:\peaknet\method\c314.0-9.met

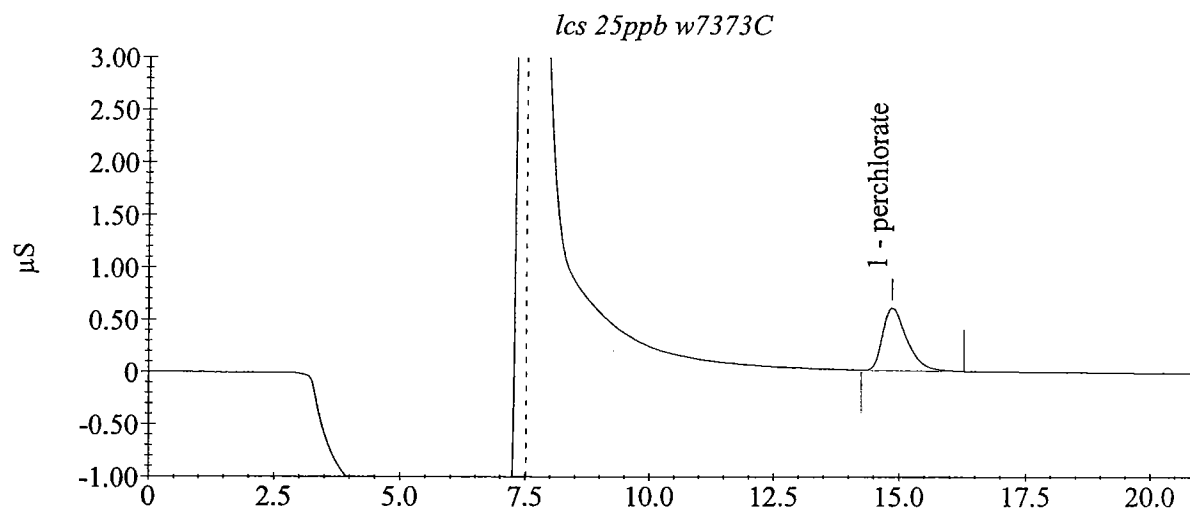
Date Time Collected : 02/03/2003 12:30:02 PM

System Operator : wei wang

Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
1	perchlorate	14.85	24.58	199096	6008



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: 31402

Project ID: JPL

Project No: 04-4428.10

Sample Matrix: Water

Batch No: 03W1345

MS Filename: -

Date Analyzed: 020303

Time Analyzed: 17:12

MSD Filename: -

Date Analyzed: 020303

Time Analyzed: 17:36

MS Sample No: MW-20-3

Sample Lab ID: 03-1402-5

Spiked Components	Unit	Spike Added	Concentration		MS Rec% #	QC Limit, % REC
			Unspiked	MS		
PERCHLORATE	µg/L	50.0	0	44.0	88	75-125
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, %	
						RPD	REC
PERCHLORATE	µg/L	50.0	43.0	86	2	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: _____

APCL Perchlorate Analysis Report

Sample Name : 1402-05 ms f=1

Data File Name : C:\DATA\03W1345K\W1345K M01_016.DXD

Method File Name : c:\peaknet\method\314.0-9.met

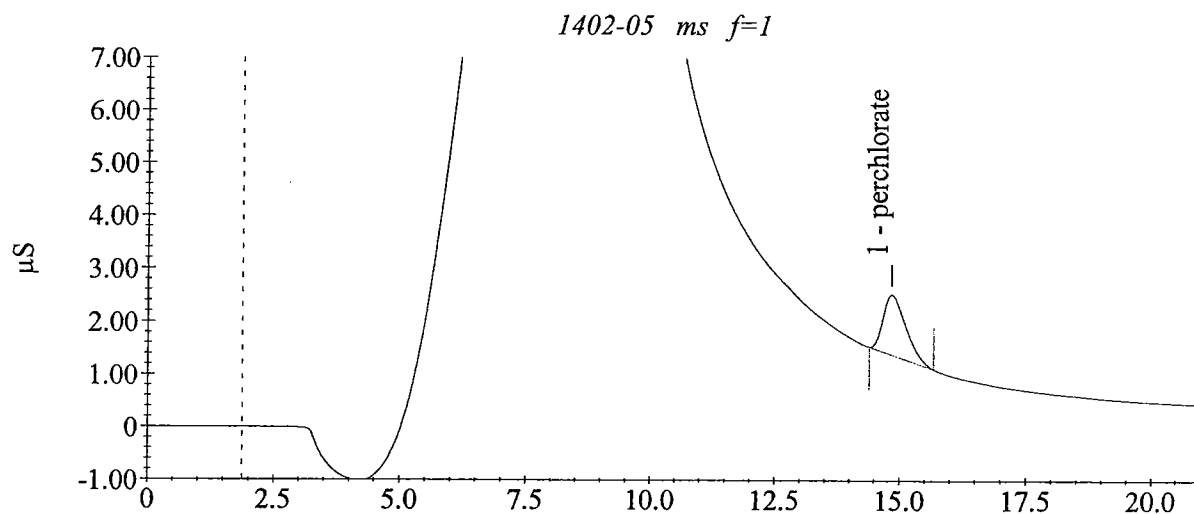
Date Time Collected : 02/03/2003 5:12:45 PM

System Operator : wei wang

Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
1	perchlorate	14.83	44.01	356439	11310



Rec 88.027



APCL Perchlorate Analysis Report

Sample Name : 1402-05 msd f=1

Data File Name : C:\DATA\03W1345K\W1345K N01_017.DXD

Method File Name : c:\peaknet\method\314.0-9.met

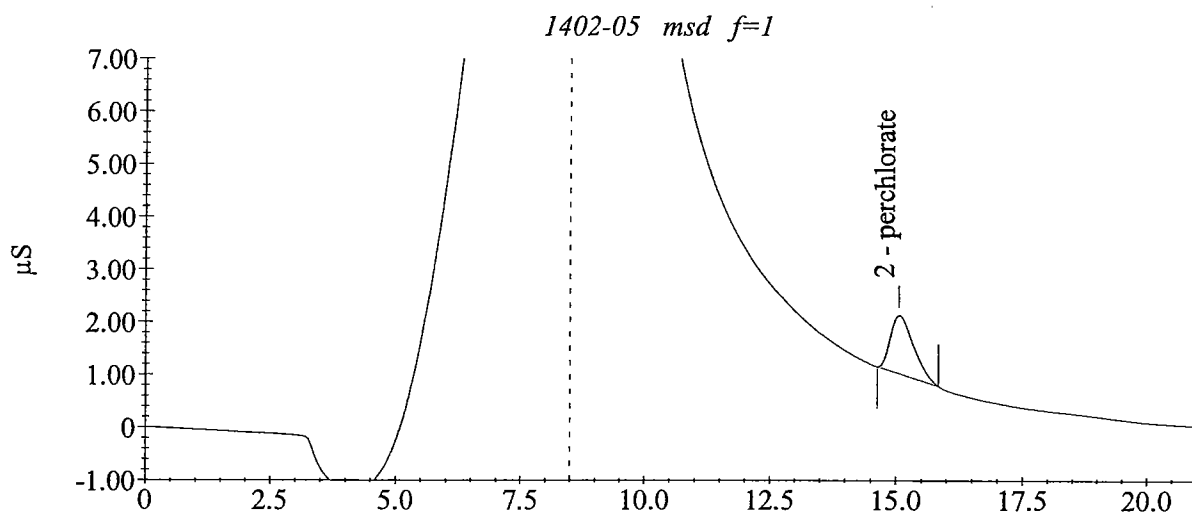
Date Time Collected : 02/03/2003 5:36:20 PM

System Operator : wei wang

Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
2	perchlorate	15.05	43.01	348354	11001



Rec 86.02



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: 31402

Project ID: JPL

Project No: 04-4428.10

Sample Matrix: Water

Batch No: 03W1308

LCS Filename: -

Date Analyzed: 013003

Time Analyzed: 17:39

LCSD Filename: -

Date Analyzed: 013003

Time Analyzed: 17:39

Spiked Components	Unit	Spike Added	Concentration		LCS Rec% #	QC Limit, % REC
			Unspiked	LCS		
CHROMIUM (VI)	mg/L	0.25	0	0.243	97	80-115
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	LCSD Concentration	LCSD Rec% #	RPD% #	QC Limit, % RPD REC
CHROMIUM (VI)	mg/L	0.25	0.248	99	2	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: 31402

Project ID: JPL

Project No: 04-4428.10

Sample Matrix: Water

Batch No: 03W1308

MS Filename: -

Date Analyzed: 013003

Time Analyzed: 17:39

MSD Filename: -

Date Analyzed: 013003

Time Analyzed: 17:39

MS Sample No: MW-20-3

Sample Lab ID: 03-1402-5

Spiked Components	Unit	Spike Added	Concentration		MS Rec% #	QC Limit, % REC
			Unspiked	MS		
CHROMIUM (VI)	mg/L	0.25	0	0.238	95	78-115
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, %	
						RPD	REC
CHROMIUM (VI)	mg/L	0.25	0.243	97	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: _____

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: 31402

Project ID: JPL

Project No: 04-4428.10

Sample Matrix: Water

Batch No: 03W1424

LCS Filename: -

Date Analyzed: 021003

Time Analyzed: 13:39

LCSD Filename: -

Date Analyzed: -

Time Analyzed: -

Spiked Components	Unit	Spike Added	Concentration		LCS Rec% #	QC Limit, % REC
			Unspiked	LCS		
PERCHLORATE	µg/L	25	0	24.0	96	80-120
# of Out-of-control					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: 31402

Project ID: JPL

Project No: 04-4428.10

Sample Matrix: Water

Batch No: 03W1424

MS Filename: -

Date Analyzed: 021103

Time Analyzed: 00:52

MSD Filename: -

Date Analyzed: 021103

Time Analyzed: 01:16

MS Sample No: MW-4-1

Sample Lab ID: 03-1501-2

Spiked Components	Unit	Spike Added	Concentration		MS Rec% #	QC Limit, % REC
			Unspiked	MS		
PERCHLORATE	µg/L	50.0	2.9	46.1	86	75-125
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, %	
						RPD	REC
PERCHLORATE	µg/L	50.0	47.1	88	2	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: _____

6A

INITIAL CALIBRATION DATA

Lab Name: Applied P & Ch Lab Contract: 03-1402

Analysis: Chromium (VI) Calibration Date: 01/29/2003

Concentration (mg/L)	0.000	0.0125	0.050	0.125	0.250	0.50
Absorbance	0.000	0.006	0.041	0.109	0.214	0.415

$$A = 0.000 + 0.836C$$

A=Absorbance

C=Concentration (mg/L)

$$r = 0.9997$$

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: 31402

Project ID: JPL

Project No.: 04-4428.10

#	Component Name	Method	Batch No.	Unit	Expected	Test Result	Rec. %	Dev. %	Flag	Control Limit, %	Test Date
1	Perchlorate	314.0	03W1345	ug/L	50	50.2	100	0	✓	90-110	02/03/2003
	Perchlorate	314.0	03W1345	ug/L	50	49.4	99	-1	✓	90-110	02/03/2003
2	Chromium (VI)	7196	03W1308	mg/L	0.25	0.256	102	2	✓	90-110	01/30/2003
	Chromium (VI)	7196	03W1308	mg/L	0.25	0.245	98	-2	✓	90-110	01/30/2003
3	Perchlorate	314.0	03W1424	ug/L	50	49.5	99	-1	✓	90-110	02/10/2003
	Perchlorate	314.0	03W1424	ug/L	50	47.8	96	-4	✓	90-110	02/10/2003
	Perchlorate	314.0	03W1424	ug/L	50	48.1	96	-4	✓	90-110	02/10/2003

APCL Perchlorate Analysis Report

Sample Name : ccv 50ppb w7685c

Data File Name : C:\DATA\03W1345K\W1345K Q01_003.DXD

Method File Name : c:\peaknet\method\314.0-9.met

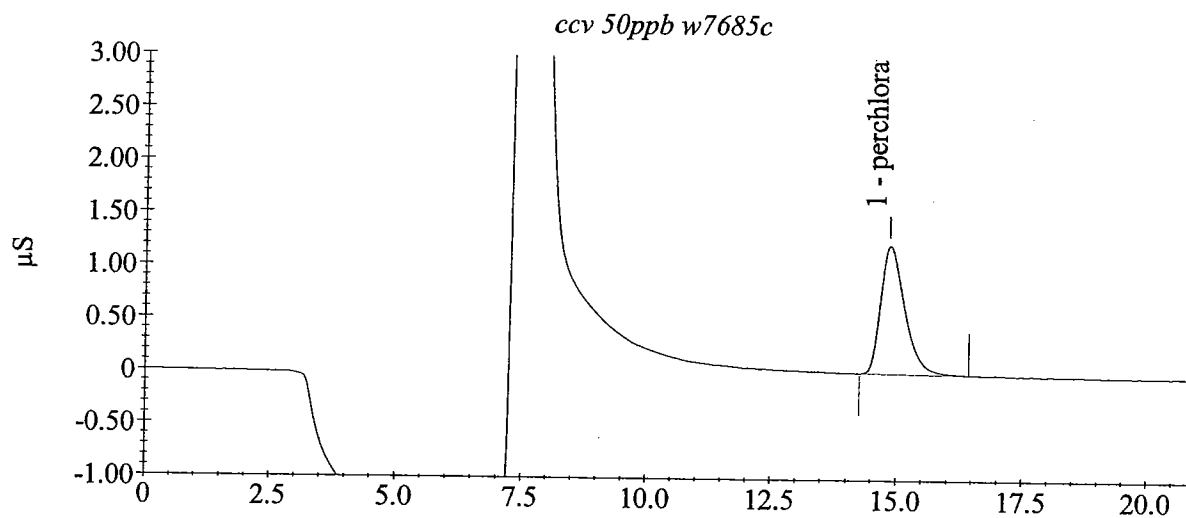
Date Time Collected : 02/03/2003 12:06:17 PM

System Operator : wei wang

Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
1	perchlorate	14.83	50.16	406234	12172



APCL Perchlorate Analysis Report

Sample Name : ccv 50ppb w7685c

Data File Name : C:\DATA\03W1345K\W1345K Q02_014.DXD

Method File Name : c:\peaknet\method\314.0-9.met

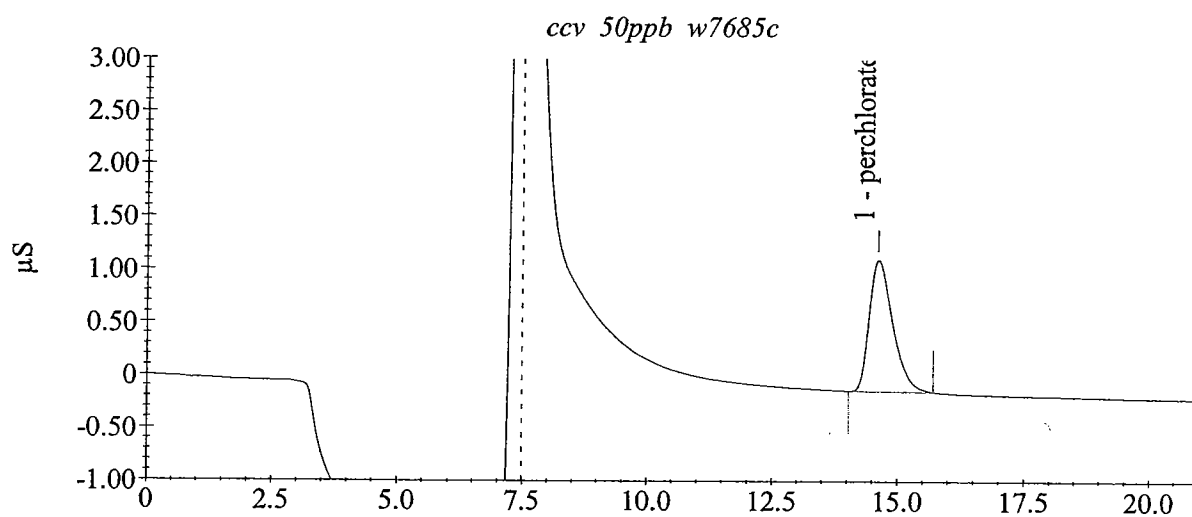
Date Time Collected : 02/03/2003 4:25:41 PM

System Operator : wei wang

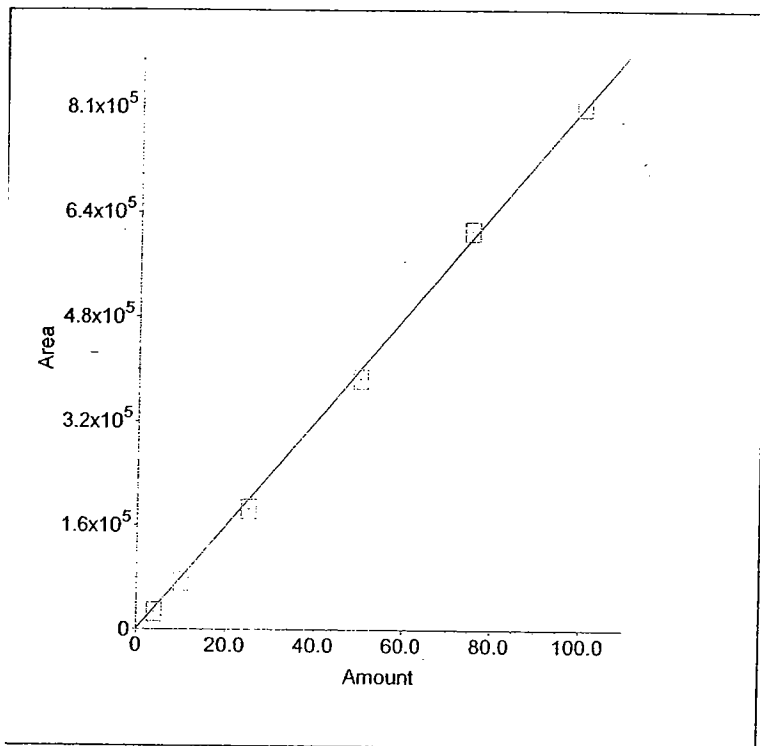
Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
1	perchlorate	14.60	49.42	400301	12440



1. Component: perchlorate
Standard: External Fit Type: Linear
Origin: Force Calibration: Area
 $r^2 = 0.998635$
Amt = $0.0001235 * \text{Resp} + 0$



Analyst Wei Wang
Date 07/31/02
Instrument ICE

Calibration Update Report

Sample Name : std1 4ppb w7373a

Data File Name : C:\DATA\E314.0-9\STD1_002.DXD

Method File Name : C:\PeakNet\method\E314.0-9.met

Schedule File Name : c:\peaknet\schedule\schedule.sch

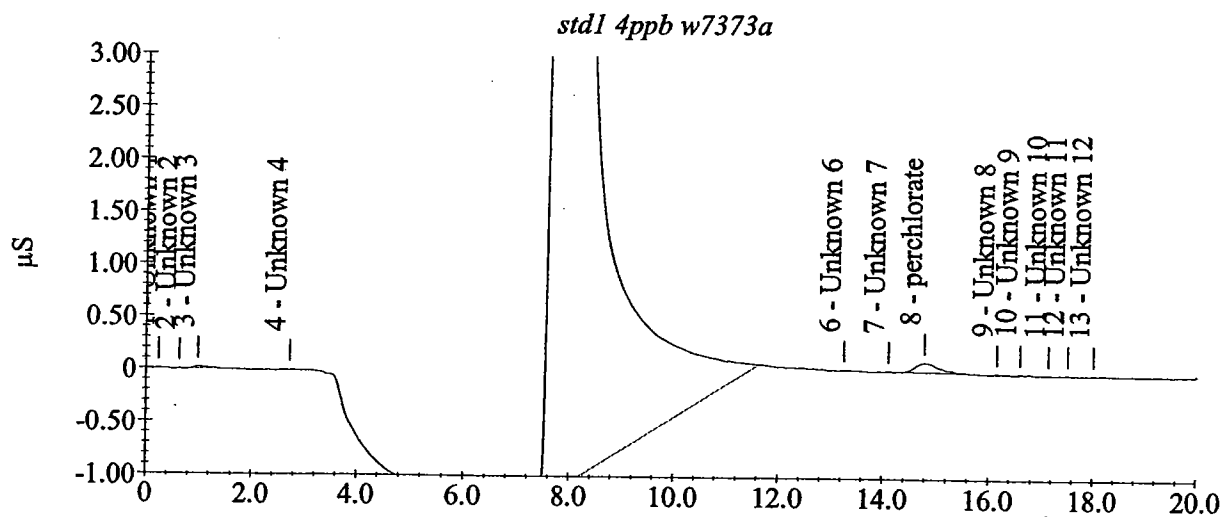
Date Time Collected : 07/31/2002 10:28:49 AM

Calibration Date : 07/31/2002 2:38:26 PM

System Operator : wei wang

Peak Information : All Components

Peak #	Component Name	Retention Time	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
8	perchlorate	14.78	3926	26934	26934



Calibration Update Report

Sample Name : std2 10ppb w7373b

Data File Name : C:\DATA\E314.0-9\STD2_003.DXD

Method File Name : C:\PeakNet\method\E314.0-9.met

Schedule File Name : c:\peaknet\schedule\schedule.sch

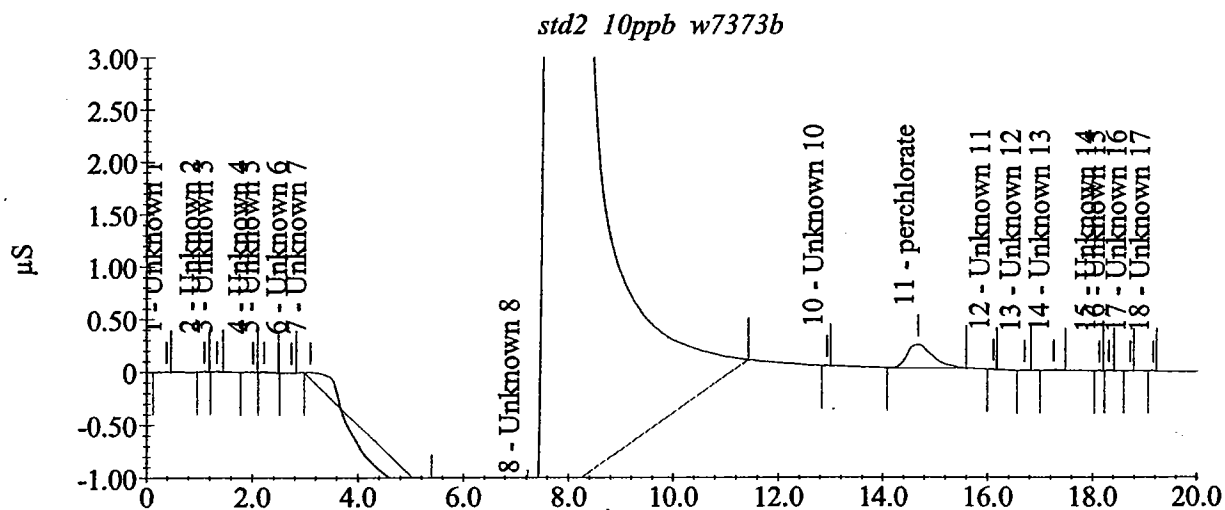
Date Time Collected : 07/31/2002 10:51:14 AM

Calibration Date : 07/31/2002 2:36:36 PM

System Operator : wei wang

Peak Information : All Components

Peak #	Component Name	Refention Time	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
11	perchlorate	14.68	21766	75031	75031



Calibration Update Report

Sample Name : std3 25ppb w7373c

Data File Name : C:\DATA\E314.0-9\STD3_004.DXD

Method File Name : C:\PeakNet\method\E314.0-9.met

Schedule File Name : c:\peaknet\schedule\schedule.sch

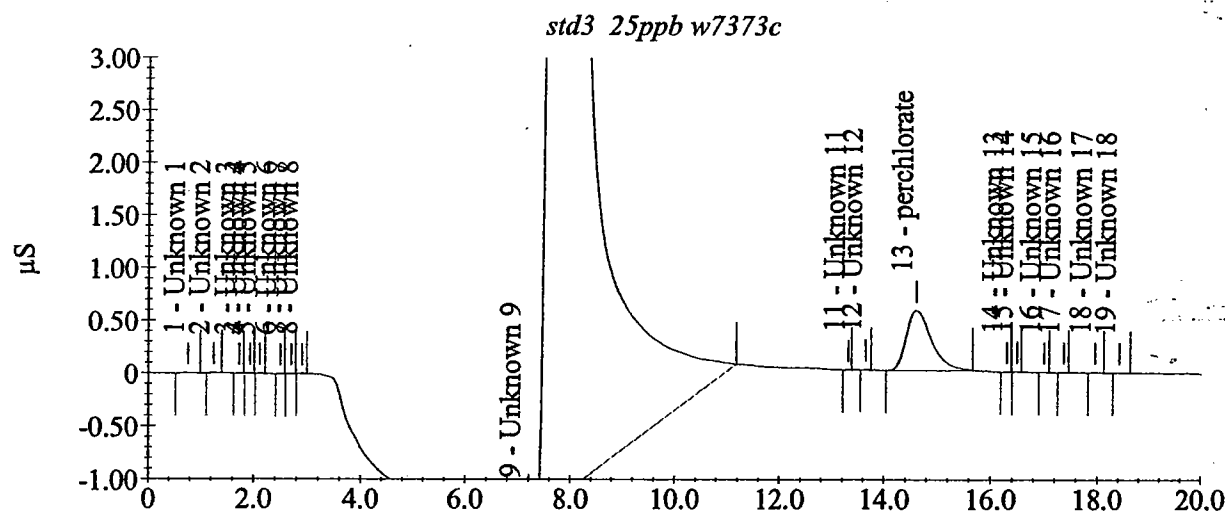
Date Time Collected : 07/31/2002 11:13:39 AM

Calibration Date : 07/31/2002 2:35:54 PM

System Operator : wei wang

Peak Information : All Components

Peak #	Component Name	Retention Time	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
13	perchlorate	14.60	42545	187759	187759



Calibration Update Report

Sample Name : std4 50ppb w7373d

Data File Name : C:\DATA\E314.0-9\STD4_005.DXD

Method File Name : C:\PeakNet\method\E314.0-9.met

Schedule File Name : c:\peaknet\schedule\schedule.sch

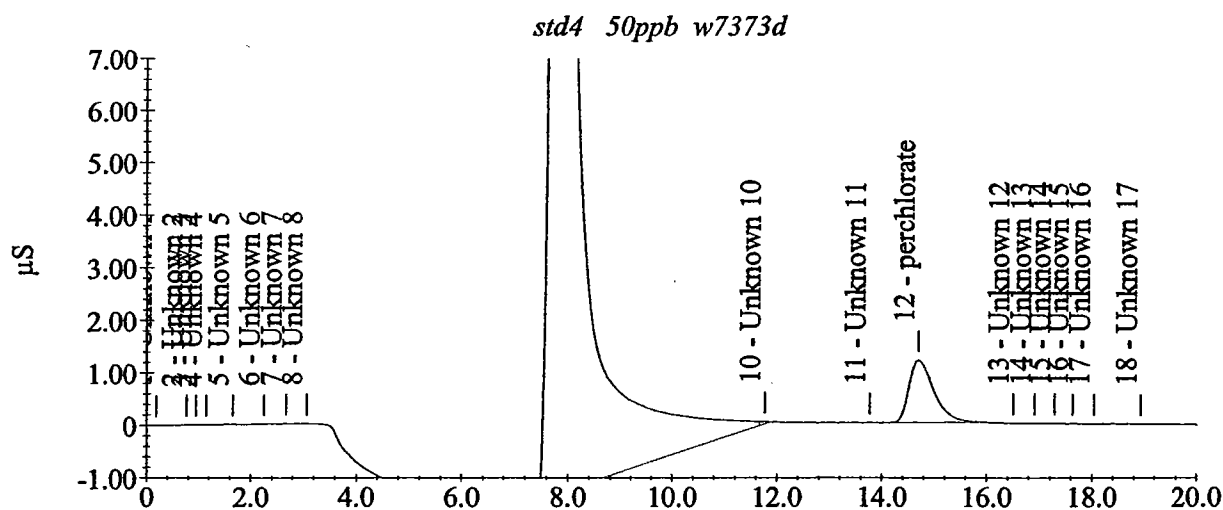
Date Time Collected : 07/31/2002 11:36:05 AM

Calibration Date : 07/31/2002 2:35:10 PM

System Operator : wei wang

Peak Information : All Components

Peak #	Component Name	Retention Time	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
12	perchlorate	14.70	111034	390100	390100



Calibration Update Report

Sample Name : std5 75ppb w7373e

Data File Name : C:\DATA\E314.0-9\STD5_006.DXD

Method File Name : C:\PeakNet\method\E314.0-9.met

Schedule File Name : c:\peaknet\schedule\schedule.sch

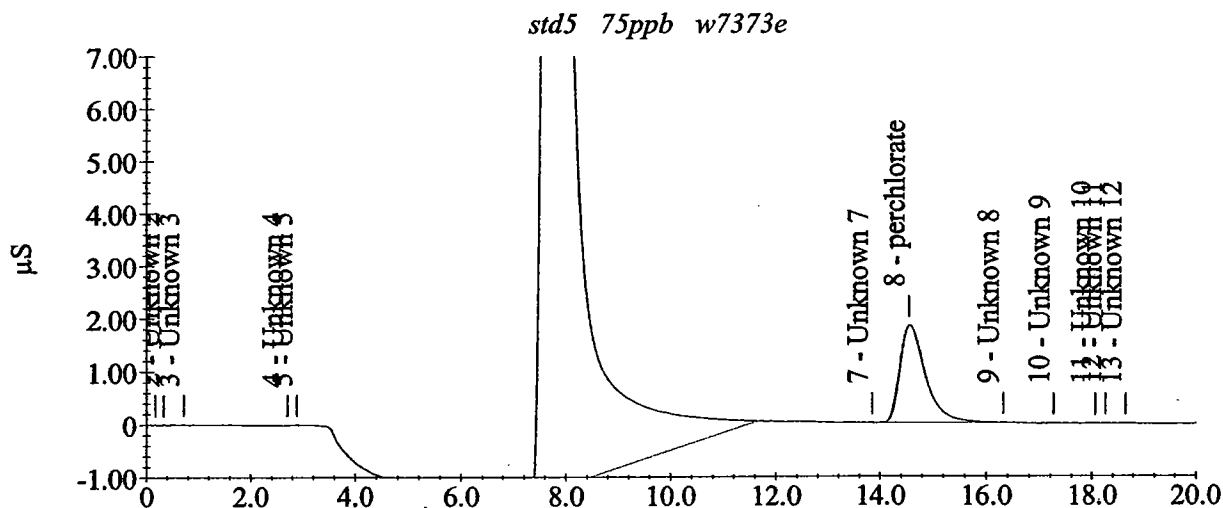
Date Time Collected : 07/31/2002 11:58:30 AM

Calibration Date : 07/31/2002 2:34:04 PM

System Operator : wei wang

Peak Information : All Components

Peak #	Component Name	Retention Time	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
8	perchlorate	14.55	130423	619321	619321



Calibration Update Report

Sample Name : std6 100ppb w7373f

Data File Name : C:\DATA\E314.0-9\STD6_007.DXD

Method File Name : C:\PeakNet\method\E314.0-9.met

Schedule File Name : c:\peaknet\schedule\schedule.sch

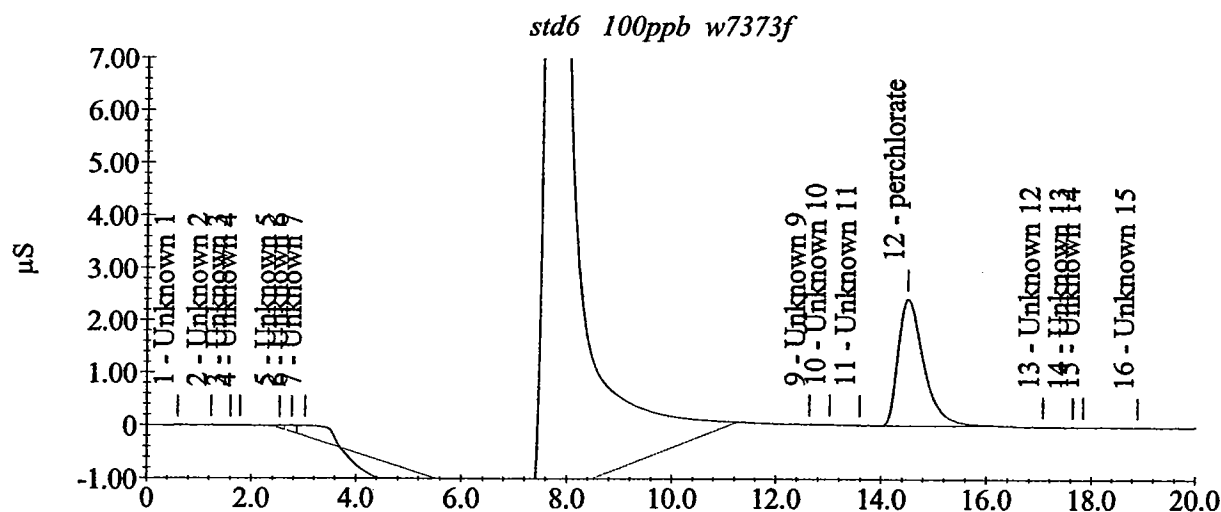
Date Time Collected : 07/31/2002 12:20:54 PM

Calibration Date : 07/31/2002 2:32:39 PM

System Operator : wei wang

Peak Information : All Components

Peak #	Component Name	Retention Time	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
12	perchlorate	14.50	0	812152	812152



Sample	Sample Type	Level	Method	Data File	Volume	Dilution
##03w1345kw ipc 25ppb w7685b MB	Sample		e314.0-9.met	c:\data\03w1345k\w1345k ipc 25ppb	1	1
ccv 50ppb w7685c	Sample		e314.0-9.met	c:\data\03w1345k\w1345k k01	1	1
lcs 25ppb w7373C	Sample		e314.0-9.met	c:\data\03w1345k\w1345k q01	1	1
lcs 18ppb w7685D	Sample		e314.0-9.met	c:\data\03w1345k\w1345k l01	1	1
ICCS 4ppb w7685a	Sample		e314.0-9.met	c:\data\03w1345k\w1345k j01	1	1
1402-01 f=1	Sample		e314.0-9.met	c:\data\03w1345k\w1345k iccs 4ppb	1	1
1402-02 f=1 <i>-see reference</i>	Sample		e314.0-9.met	c:\data\03w1345k\1402-01	1	1
1402-03 f=1	Sample		e314.0-9.met	c:\data\03w1345k\1402-02	1	1
1402-04 f=1	Sample		e314.0-9.met	c:\data\03w1345k\1402-03	1	1
1402-05 f=1	Sample		e314.0-9.met	c:\data\03w1345k\1402-04	1	1
1402-06 f=1 <i>-see reference</i>	Sample		e314.0-9.met	c:\data\03w1345k\1402-05_011.dxd	1	1
1402-07 f=1	Sample		e314.0-9.met	c:\data\03w1345k\1402-06_012.dxd	1	1
ccv 50ppb w7685c	Sample		e314.0-9.met	c:\data\03w1345k\1402-07_013.dxd	1	1
ccb	Sample		e314.0-9.met	c:\data\03w1345k\w1345k q02_014.dxd	1	1
1402-05 ms f=1	Sample		e314.0-9.met	c:\data\03w1345k\w1345k k02_015.dxd	1	1
1402-05 msd f=1	Sample		e314.0-9.met	c:\data\03w1345k\w1345k m01_016.dxd	1	1
1424-01 f=1	Sample		e314.0-9.met	c:\data\03w1345k\w1345k n01_017.dxd	1	1
1424-02 f=1	Sample		e314.0-9.met	c:\data\02w3475k\1424-01_018.dxd	1	1
1424-03 f=1	Sample		e314.0-9.met	c:\data\03w1345k\1424-02_019.dxd	1	1
1424-04 f=1	Sample		e314.0-9.met	c:\data\03w1345k\1424-03_020.dxd	1	1
1424-05 f=1	Sample		e314.0-9.met	c:\data\03w1345k\1424-04_021.dxd	1	1
1424-06 f=1	Sample		e314.0-9.met	c:\data\03w1345k\1424-05_022.dxd	1	1
1424-07 f=1	Sample		e314.0-9.met	c:\data\03w1345k\1424-06_023.dxd	1	1
ccv 50ppb w7685c	Sample		e314.0-9.met	c:\data\03w1345k\1424-07_024.dxd	1	1
	Sample		aastopcl.met	c:\data\03w1345k\w1345k q03_025.dxd	1	1

Analyst Wei Way
 Date 2/3/03
 Instrument IC-K

Line	Sample	Sample Type	Level	Method	Data File	Volume	Dilution
1	##03w1424kw ipc 25ppb w7685b	Sample		e314.0-9.met	c:\data\03w1424k\w1424k ipc 25ppb	1	1
2	MB	Sample		e314.0-9.met	c:\data\03w1424k\w1424k k01	1	1
3	ccv 50ppb w7685c	Sample		e314.0-9.met	c:\data\03w1424k\w1424k q01	1	1
4	lcs 25ppb w7373C	Sample		e314.0-9.met	c:\data\03w1424k\w1424k l01	1	1
5	lcs 18ppb w7685D	Sample		e314.0-9.met	c:\data\03w1424k\w1424k j01	1	1
3	ICCS 4ppb w7685a	Sample		e314.0-9.met	c:\data\03w1424k\w1424k iccs 4ppb	1	1
7	1444-02 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1444-02	1	1
3	1444-02 ms f=1	Sample		e314.0-9.met	c:\data\03w1424k\w1424k m01	1	1
3	1444-02 msd f=1	Sample		e314.0-9.met	c:\data\03w1424k\w1424k n01	1	1
0	1402-02 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1402-02	1	1
1	1402-06 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1402-06	1	1
2	ccv 50ppb w7685c	Sample		e314.0-9.met	c:\data\03w1424k\w1424k q02	1	1
3	ccb	Sample		e314.0-9.met	c:\data\03w1424k\w1424k k02	1	1
4	1444-04 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1444-04	1	1
5	1497-03 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1497-03	1	1
6	1457-01 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1457-01	1	1
7	1457-02 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1457-02	1	1
8	1457-03 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1457-03	1	1
9	1457-04 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1457-04	1	1
0	1457-05 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1457-05	1	1
1	1501-01 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1501-01	1	1
2	1501-02 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1501-02	1	1
3	ccv 50ppb w7685c	Sample		e314.0-9.met	c:\data\03w1424k\w1424k q03	1	1
4	ccb	Sample		e314.0-9.met	c:\data\03w1424k\w1424k k03	1	1
5	1501-03 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1501-03	1	1
5	1501-04 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1501-04	1	1
7	1501-06 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1501-06	1	1
3	1501-07 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1501-07	1	1
3	1501-08 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1501-08	1	1
0	1501-02 ms f=1	Sample		e314.0-9.met	c:\data\03w1424k\w1424k m02	1	1
1	1501-02 msd f=1	Sample		e314.0-9.met	c:\data\03w1424k\w1424k n02	1	1
2	1444-01 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1444-01	1	1
3	1444-03 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1444-03	1	1
4	ccv 50ppb w7685c	Sample		e314.0-9.met	c:\data\03w1424k\w1424k q03	1	1
5	ccv 50ppb w7685c	Sample		e314.0-9.met	c:\data\02w3475k\w1424k q04_a035.dxd	1	1
3	1444-03 f=2	Sample		e314.0-9.met	c:\data\02w3475k\1444-03_036.dxd	1	2
7	ccv 50ppb w7685c	Sample		e314.0-9.met	c:\data\03w1424k\w1424k q05_037.dxd	1	1
3		Sample		aastopcl.met		1	1

Analyst Wei Way
Date 2/10-11/03
Instrument LC-K

Sample	Sample Type	Level	Method	Data File	Volume	Dilution	Weight	Int. Std.
mb	Sample		e314.0-9.met	mb_001.dxd	1	1	1	1
std1 4ppb w7373a	Calibration	1	e314.0-9.met	std1_002.dxd	1	1	1	1
std2 10ppb w7373b	Calibration	2	e314.0-9.met	std2_003.dxd	1	1	1	1
std3 25ppb w7373c	Calibration	3	e314.0-9.met	std3_004.dxd	1	1	1	1
std4 50ppb w7373d	Calibration	4	e314.0-9.met	std4_005.dxd	1	1	1	1
std5 75ppb w7373e	Calibration	5	e314.0-9.met	std5_006.dxd	1	1	1	1
std6 100ppb w7373f	Calibration	6	e314.0-9.met	std6_007.dxd	1	1	1	1
icv 50ppb w7319c	Sample		e314.0-9.met	icv_a008.dxd	1	1	1	1
icb	Sample		e314.0-9.met	icb	1	1	1	1
3984-15 f=1	Sample		e314.0-9.met	3984-15	1	1	1	1
3843-33 f=1	Sample		e314.0-9.met	3843-33	1	1	1	1
3984-15 f=1	Sample		e314.0-9.met	3984-15a	1	1	1	1
3843-33 f=1	Sample		e314.0-9.met	3843-33a	1	1	1	1
3984-15 f=1	Sample		e314.0-9.met	3984-15b	1	1	1	1
3843-33 f=1	Sample		e314.0-9.met	3843-33b	1	1	1	1

Analyst Wei Wang
Date 7/31/02
Instrument IL-K

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498Batch # 03W1308 Matrix: W

Chromium (VI) (7196) Worksheet

[Holding Time: 24 hours!!]

Test Date: 01/30/03 Analyst: W

Lot #: Reagent Water _____ Diphenylcazide solution _____

Test Time: 17:39 SOP: _____

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-	x / = mg/L			Least Square [RF]=	Cal. Code:
STD-2	W-	x / = mg/L			Average RF=	
STD-3	W-	x / = mg/L			C.C.=0.997 > 0.995	$A=0.000 \pm 0.8$
STD-4	W-	x / = mg/L			RSD= % (< 15%)	
STD-5	W-	x / = mg/L			Ref. page 148	
STD-6	W-	x / = mg/L				

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 $C' = A / RF$	C (Sample) $C = f_1 f_2 C'$	Anc N
CCV	Lot: W- 7076	Expected Conc.: x	/ = 0.25 mg/L		0.214	0.2560 mg/L	REC. %	90-1
Method Blank	Bl. Lot: 71115		$/X_0 = 1$	95.0/ =	0.000	mg/L	0.00 ppm	
LCS1	Bl. Lot: <u>W</u>		$/X_0 = 1$	95.0/ =	0.203	mg/L	0.2428 ppm	
Sample-1	1XPP-1 1402-1		$/X_0 = 1$	95.0/ =	0.015	0.008 mg/L	0.008 ppm	J-1
MS on S-1	(MS) 1XPP-2 -2		$/X_0 = 1$	95.0/ =	0.001	0.008 mg/L	0.008 ppm	
MSD on S-1	(MS) 1XPP-2 -2		$/X_0 = 1$	95.0/ =	0.003	0.008 mg/L	0.008 ppm	
Sample 2	1XPP-2 -4		$/X_0 = 1$	95.0/ =	0.004	0.004 mg/L	0.005 ppm	
Sample 3		-5	$/X_0 = 1$	95.0/ =	0.008	0.003 mg/L	0.006 ppm	
Sample 4	(MS)	-5	$/X_0 = 1$	95.0/ =	0.199	mg/L	0.2380 ppm	
Sample 5	(MSD)	-5	$/X_0 = 1$	95.0/ =	0.203	mg/L	0.2428 ppm	
Sample 6		-6	$/X_0 = 1$	95.0/ =	0.017	0.012 mg/L	0.006 ppm	
Sample 7		-7	$/X_0 = 1$	95.0/ =	0.006	mg/L	0.007 ppm	
Sample 8			$/X_0 = 1$	95.0/ =		mg/L	ppm	
Sample 9			$/X_0 = 1$	95.0/ =		mg/L	ppm	
Sample 10			$/X_0 = 1$	95.0/ =		mg/L	ppm	
Blank	Lot:		$/X_0 = 1$	95.0/ =		mg/L	ppm	
LCS2	Bl. Lot: 71115		$/X_0 = 1$	95.0/ =	0.207	mg/L	0.2428 ppm	
Sample 11			$/X_0 = 1$	95.0/ =		mg/L	ppm	
Sample 12			$/X_0 = 1$	95.0/ =		mg/L	ppm	
Sample 13			$/X_0 = 1$	95.0/ =		mg/L	ppm	
Sample 14			$/X_0 = 1$	95.0/ =		mg/L	ppm	
Sample 15			$/X_0 = 1$	95.0/ =		mg/L	ppm	
Sample 16			$/X_0 = 1$	95.0/ =		mg/L	ppm	
Sample 17			$/X_0 = 1$	95.0/ =		mg/L	ppm	
Sample 18			$/X_0 = 1$	95.0/ =		mg/L	ppm	
Sample 19			$/X_0 = 1$	95.0/ =		mg/L	ppm	
Sample 20			$/X_0 = 1$	95.0/ =		mg/L	ppm	
MTX Dup	<u>0.25</u>		$/X_0 = 1$	95.0/ =	0.205	mg/L	0.2428 ppm	

Type	STD Lot #	$C_{STD} (\mu\text{g/mL}) \times V_{STD} (\text{mL}) / X (\text{g or mL}) = T$	Spike Rec.	Ctl Limit (W/S)	PQL/MDL (in ppm)
MS	W- 7076	x / = 0.25 ppm	%	80-120 %/80-120 %	PQL(w) 0.01
MSD	W- <u>W</u>	x / = ppm	%		PQL(s) 0.05
LCS	W- 7191	x / = ppm	%	80-120 %/80-120 %	MDL(w) 0.005
ECSD	W- <u>W</u>	x / = ppm	%		MDL(s) 0.025

Form 5-155 May 08, 1996. Ver. 3.1

No pencil. Use blue pen for record. Use red pen for correction.

[CUST.DOC.WET]CR6.TEX Root-file: CR6.ROOT.TEX 1-Page-File: CR61.TEX

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

1035

Batch # 03W1295 Matrix: W

[Holding Time: 24 hours!!]

Test Date: 1/29/03 Analyst: BV

Lot #: Reagent Water _____ Diphenylcazide solution _____

Test Time: _____ 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-7191	x / = 0.000mg/L	0.000		Least Square [RF]=	Cal. Code:
STD-2	W-	x / = 0.012mg/L	0.006		Average RF=	A=0.000+0.836C
STD-3	W-	x / = 0.050mg/L	0.001		C.C.=0.977 (> 0.995)	
STD-4	W-	x / = 0.125mg/L	0.009		RSD= % (< 15%)	
STD-5	W-	x / = 0.250mg/L	0.014		Ref. page	
STD-6	W-✓	x / = 0.500mg/L	0.015		A=0.003+Bx1/103	

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 $C' = A / RF$	C (Sample) $C = f_1 f_2 C'$	Anomaly Note
CCV	Lot: W-7076	Expected Conc.: x	/	= 0.25 mg/L	0.246	0.258 mg/L	REC. %	90-110 %
Method Blank	Bl. Lot: T1115		$1/X_0 = 1$	95.0/ =	0.000	mg/L	0.00	ppm
LCS1	Bl. Lot: 1		$1/X_0 =$	95.0/ =	0.204	mg/L	0.244	ppm
Sample-1	1369-1		$1/X_0 =$	95.0/ =	0.000	mg/L	0.00	ppm
MS on S-1	6		$1/X_0 =$	95.0/ =	0.223	mg/L	0.266	ppm
MSD on S-1	6		$1/X_0 =$	95.0/ =	0.230	mg/L	0.275	ppm
Sample 2	2		$1/X_0 =$	95.0/ =	0.004	mg/L	0.005	ppm
Sample 3	3		$1/X_0 =$	95.0/ =	0.002	mg/L	0.002	ppm
Sample 4	4		$1/X_0 =$	95.0/ =	0.001	mg/L	0.001	ppm
Sample 5	5		$1/X_0 =$	95.0/ =	0.002	mg/L	0.002	ppm
Sample 6	6		$1/X_0 =$ ✓	95.0/ =	0.004	mg/L	0.005	ppm
Sample 7			$1/X_0 =$	95.0/ =		mg/L		ppm
Sample 8			$1/X_0 =$	95.0/ =		mg/L		ppm
Sample 9			$1/X_0 =$	95.0/ =		mg/L		ppm
Sample 10			$1/X_0 =$	95.0/ =		mg/L		ppm
Blank	Lot:		$1/X_0 =$	95.0/ =		mg/L		ppm
LCS2	Bl. Lot: T1115		$1/X_0 = 1$	95.0/ =	0.210	mg/L	0.25	ppm
Sample 11			$1/X_0 =$	95.0/ =		mg/L		ppm
Sample 12			$1/X_0 =$	95.0/ =		mg/L		ppm
Sample 13			$1/X_0 =$	95.0/ =		mg/L		ppm
Sample 14			$1/X_0 =$	95.0/ =		mg/L		ppm
Sample 15			$1/X_0 =$	95.0/ =		mg/L		ppm
Sample 16			$1/X_0 =$	95.0/ =		mg/L		ppm
Sample 17			$1/X_0 =$	95.0/ =		mg/L		ppm
Sample 18			$1/X_0 =$	95.0/ =		mg/L		ppm
Sample 19			$1/X_0 =$	95.0/ =		mg/L		ppm
Sample 20			$1/X_0 =$	95.0/ =		mg/L		ppm
MTX Dup.	losing 0.25mg/L		$1/X_0 =$	95.0/ =	0.204	mg/L	0.204	ppm

Type	STD Lot #	$C_{STD}(\mu\text{g/mL}) \times V_{STD}(\text{mL}) / X(\text{g or mL}) = T$	Spike Rec.	Ctl Limit (W/S)	PQL/MDL (in ppm)
MS	W-7076	x / = 0.25 ppm	%	80-120 %/80-120 %	PQL(w) 0.01
MSD	W-✓	x / = ppm	%		PQL(s) 0.05
LCS	W-7191	x / = ppm	%	80-120 %/80-120 %	MDL(w) 0.005
LCSD	W-✓	x / = ppm	%		MDL(s) 0.025



Applied Physics & Chemistry Laboratory

13760 Magnolia Ave. Chino CA 91710

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

March 6, 2003

GEOFON, Inc.

Attention: Leo Williamson

22632 Golden Spring Dr Ste 270

Diamond Bar CA 91765

Dear Leo Williamson,

This package contains samples in our Service ID 03-1369 and your project : 04-442810 JPL.
Enclosed please find:

- (1) Original analytical report.
- (2) Original Chain of Custody.
- (3) One diskette containing EDD deliverable.
- (4) One original Level C Data Package Deliverable.

If anything is missing or you have any questions, please feel free to contact me.

Respectfully submitted,

Regina Kirakozova

Associate QA/QC Director

Applied P & Ch Laboratory



GEOFON

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

CHAIN-OF-CUSTODY RECORD

LABORATORY COPY

MW-21 0001

GEOFON'S LAB COORDINATOR		LAB COORDINATOR'S PHONE		LAB COORDINATOR'S FAX		LABORATORY SERVICE ID		LABORATORY CONTACT		MAIL REPORT (COMPANY NAME)		
Brad Shojare		(909) 396-7662		(909) 396-1455				Kenny Chan		GEOFON, INC.		
PROJECT NAME JPL GW Monitoring		PROJECT LOCATION MW-21 - Hayward		PROJECT NUMBER 04-442810		LABORATORY PHONE (909) 590-1828		LABORATORY FAX (909) 590-1498		RECIPIENT NAME Leo W. Williamson		
PROJECT CONTACT Leo W. Williamson		PROJECT PHONE NUMBER (714) 920-8729		PROJECT FAX (909) 396-1455		LABORATORY ADDRESS 13760 Magnolia Ave		LABORATORY ADDRESS		ADDRESS 22632 Golden Springs Dr, #270		
PROJECT ADDRESS 4800 Oak Grove Dr.		CITY, STATE AND ZIP CODE Pasadena, CA.		CLIENT US NAVY SWDIR		CITY, STATE AND ZIP CODE Chino, CA 91710		CITY, STATE AND ZIP CODE		CITY, STATE AND ZIP CODE Diamond Bar, CA 91765		
PROJECT MANAGER Asrar Farheem		PROJECT MANAGER'S PHONE (909) 396-7662		PROJECT MANAGER'S FAX (909) 396-7662								
Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont	QC Level	TAT	Comments			
1	MW-21-5	H ₂ O	1/29/03	840	HCL 3H+1	III	NORMAL	X	X	X	NOTE: 314.0 & 7196 Samples are in the same 500ml poly.	
2	MW-21-4			915				X	X	X		
3	MW-21-3			1245				X	X	X		
4	MW-21-2			1320				X	X	X		
5	MW-21-1			1400				X	X	X		
6												
7	TB-1-1/29/03	H ₂ O	N/A	N/A	HCL 2	III	NORMAL	X				
8	SOURCE BLANK-1		1/29/03	1100	HCL 3			X				
9	EB-1-1/29/03			1410	HCL 3H+1			X	X	X		
10												
SAMPLES COLLECTED BY: Leo W. Williamson											COOLER TEMPERATURE UPON RECEIPT	
RELINQUISHED BY: [Signature]											SAMPLE'S CONDITION UPON RECEIPT	
RECEIVED BY: [Signature]											DATE: 1-29-03	
[Signature]											TIME: 1500	
[Signature]											DATE: 1-29-03	
[Signature]											TIME: 1600	

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

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

Submitted to:

GEOFON, Inc.

Attention: Leo Williamson

22632 Golden Spring Dr Ste 270

Diamond Bar CA 91765

Tel: (909) 396-7662 Fax: (909) 396-1455

APCL Analytical Report

Service ID #: 801-031369

Received: 01/29/03

Collected by: Leo Williamson

Extracted: N/A

Collected on: 01/29/03

Tested: 01/29-02/03/03

Reported: 02/05/03

Sample Description: Water from MW-21-Hahamonga.

Project Description: 04-442810 JPL

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result			
				EB-1-1/29/03 03-01369-1	MW-21-1 03-01369-2	MW-21-2 03-01369-3	MW-21-3 03-01369-4
CHROMIUM (VI)	7196	mg/L	0.01	<0.01	<0.01	<0.01	<0.01
Dilution Factor				1	1	1	1
PERCHLORATE	314.0	µg/L	4	<4	3.1J	<4	1.9J
VOLATILE ORGANICS							
Dilution Factor				1	1	1	1
BENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
BROMOBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
BROMOCHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
BROMODICHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
BROMOFORM	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
BROMOMETHANE	524.2	µg/L	0.73 ^(a)	<0.73	<0.73	<0.73	<0.73
2-BUTANONE	524.2	µg/L	10	<10	<10	<10	<10
N-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
SEC-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
TERT-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CARBON TETRACHLORIDE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLORODIBROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLOROFORM	524.2	µg/L	0.5	<0.5	1.0	<0.5	0.9
CHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
2-CHLOROTOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
4-CHLOROTOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	524.2	µg/L	0.54 ^(a)	<0.54	<0.54	<0.54	<0.54
1,2-DIBROMOETHANE (EDB)	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
DIBROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHANE	524.2	µg/L	0.5	<0.5	0.5	<0.5	<0.5
1,2-DICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	0.3J

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result			
				EB-1-1/29/03	MW-21-1	MW-21-2	MW-21-3
				03-01369-1	03-01369-2	03-01369-3	03-01369-4
TRANS-1,2-DICHLOROETHENE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-DICHLOROPROPANE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-DICHLOROPROPANE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
2,2-DICHLOROPROPANE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-DICHLOROPROPENE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
CIS-1,3-DICHLOROPROPENE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
TRANS-1,3-DICHLOROPROPENE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
ETHYLBENZENE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
HEXACHLOROBUTADIENE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
ISOPROPYLBENZENE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
P-ISOPROPYLTOLUENE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
METHYLENE CHLORIDE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
4-METHYL-2-PENTANONE (MIBK)	524.2	µg/L	10	< 10	< 10	< 10	< 10
METHYL-T-BUTYL ETHER (MTBE)	524.2	µg/L	1	< 1	< 1	< 1	< 1
NAPHTHALENE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
N-PROPYLBENZENE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
STYRENE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1,2-TETRACHLOROETHANE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-TETRACHLOROETHANE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
TETRACHLOROETHENE (PCE)	524.2	µg/L	0.5	< 0.5	0.7	1.1	1.9
TOLUENE	524.2	µg/L	0.5	0.3J	< 0.5	< 0.5	< 0.5
1,2,3-TRICHLOROBENZENE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2,4-TRICHLOROBENZENE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1-TRICHLOROETHANE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-TRICHLOROETHANE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
TRICHLOROETHENE (TCE)	524.2	µg/L	0.5	< 0.5	3.6	0.5	1.1
TRICHLOROFLUOROMETHANE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2,3-TRICHLOROPROPANE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
TRICHLOROTRIFLUOROETHANE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2,4-TRIMETHYLBENZENE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3,5-TRIMETHYLBENZENE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
VINYL CHLORIDE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
O-XYLENE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5
M/P-XYLENE	524.2	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result			
				MW-21-4 03-01369-5	MW-21-5 03-01369-6	Source Blank-1 03-01369-7	TB-1-1/29/03 03-01369-8
CHROMIUM (VI)	7196	mg/L	0.01	<0.01	<0.01	-	-
Dilution Factor				1	1	1	1
PERCHLORATE	314.0	µg/L	4	1.8J	<4	-	-
VOLATILE ORGANICS							
Dilution Factor				1	1	1	1
BENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
BROMOBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
BROMOCHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
BROMODICHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
BROMOFORM	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
BROMOMETHANE	524.2	µg/L	0.73 ^(a)	<0.73	<0.73	<0.73	<0.73
2-BUTANONE	524.2	µg/L	10	<10	<10	<10	<10
N-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
SEC-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
TERT-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CARBON TETRACHLORIDE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLORODIBROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLOROFORM	524.2	µg/L	0.5	1.7	2.5	<0.5	<0.5
CHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
2-CHLOROTOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
4-CHLOROTOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	524.2	µg/L	0.54 ^(a)	<0.54	<0.54	<0.54	<0.54
1,2-DIBROMOETHANE (EDB)	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
DIBROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-DICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	524.2	µg/L	0.5	0.7	2.0	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
2,2-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result			
				MW-21-4	MW-21-5	Source Blank-1	TB-1-1/29/03
				03-01369-5	03-01369-6	03-01369-7	03-01369-8
ETHYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
ISOPROPYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
METHYLENE CHLORIDE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
4-METHYL-2-PENTANONE (MIBK)	524.2	µg/L	10	<10	<10	<10	<10
METHYL-T-BUTYL ETHER (MTBE)	524.2	µg/L	1	<1	<1	<1	<1
NAPHTHALENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
N-PROPYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
STYRENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1,1,2-TETRACHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-TETRACHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
TETRACHLOROETHENE (PCE)	524.2	µg/L	0.5	5.2	9.6	<0.5	<0.5
TOLUENE	524.2	µg/L	0.5	<0.5	<0.5	0.5J	<0.5
1,2,3-TRICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
TRICHLOROETHENE (TCE)	524.2	µg/L	0.5	0.3J	0.7	<0.5	<0.5
TRICHLOROFLUOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
TRICHLOROTRIFLUOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
VINYL CHLORIDE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
O-XYLENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
M/P-XYLENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5

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) MDL reported.

Respectfully submitted,

Dominic Lau

Laboratory Director

Applied P & Ch Laboratory

Level C Data Package Deliverables

General Information

Project: 04-4428.10 JPL

APCL Service ID: 03-1369



Applied P & Ch Laboratory

13760 Magnolia Ave. Chino, CA 91710

Telephone (909)590-1828

Fax (909)590-1498

Case Narrative

Project: JPL/MW-21-Hahamonga./04-442810

For GEOFON, Inc.

APCL Service No: 03-1369

1. Sample Identification

The sample identifications are listed in the following table:

GEOFON, Inc. Sample ID	APCL Sample ID
MW-21-5	03-01369-6
MW-21-4	03-01369-5
MW-21-3	03-01369-4
MW-21-2	03-01369-3
MW-21-1	03-01369-2
TB-1-1/29/03	03-01369-8
Source Blank-1	03-01369-7
EB-1-1/29/03	03-01369-1

2. Analytical Methodology

Samples are analyzed by EPA methods
524.2 (Volatile Organic Compounds),
7196 (Chromium (VI)),
314.0 (Perchlorate, low level),

3. Holding Time

All samples were extracted, digested and analyzed within the holding times defined by the appropriate EPA methods of the analyses.

4. Preservation

All samples were preserved and stored according to the appropriate EPA methods.

5. Tele-log

None

6. Anomaly

None

"I certify that these data are technically accurate, complete, and in compliance with the terms and conditions of the contract, for other than the conditions detailed above. Release of the data contained in the hardcopy data package and its electronic data deliverable submitted on diskette had been authorized by the Laboratory Manager or her/his designee, as verified by the following signature."

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Regina Kirakozova', written in a cursive style.

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

Sample Receiving Checklist

APCL ServiceID: **1369**Client Name/Project: Geolon / SPL

1. Sample Arrival

Date/Time Received 1/29/03 1600Date/Time Opened 1/29/03 1600By (name): Kenny ChanCustody Transfer: ☐ Client☐ Golden State☐ UPS☐ US Mail☐ FedEx☒ APCL Empl: Richard Stinson

2. Chain-of-Custody (CoC)

☒ With Samples?☐ Faxed?☐ Client has Copy?☐ Signed, dated? By: 8☐ Project ID?☒ Analyses Clear?☐ Hold Samples?# on Hold 8# Received 8☐ CoC/Docs Zip-Locked under lid?☐ Compos. #: ☒ #Samples OK?☐ Discrepancies?☐ Client notified?☐ Response (attach docs):

3. Shipping Container/Cooler

☐ Cooler Used? # of 1Cooled by: ☒ Ice☐ Blue Ice☐ Dry Ice☐ NoneTemp °C 4.5

(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 >12If Not, pH = Preserved by: ☐ Client☐ APCL☐ Third Party

5. Holding-time Requirements

☐ pH 24hr☐ BACT 6/24hr☒ Cr^{VI} 24hr☐ NO₃ 48hr☐ BOD 48hr☐ Cl₂ 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 H₂O☐ Other Liq☐ Soil☐ Wipe☐ Polymer☐ Air☐ Other: ☐ Ground H₂O☐ 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: Kenny Chan

Date: 29 Jan 2003

Time: 7:35 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.

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

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

Sample Login: Check List

03-01369 (0470_ 103) (2202777_ 103)

01/29/03

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 #:	04-442810
☐	Billing Information	P.O. #:	
		Bill Address:	22632 Golden Spring Dr Ste 270 ,Diamond Bar ,CA 91765
		Lab Project ID:	
		Client Database #:	203 (LP2/5PB)
☐	Receiving Information	Who Received Sample?	Kenny Chan
		Receiving Date/Time:	01/29/03 1600
		COC No.	
☐	Shipping Information	Shipping Company	APCL pick up
		Packing Information:	Cooler/Ice Chester
		Cooler Temperature:	4.5 °C
☐	Container Information	Container Provider:	Client
☐	Sampling Information	Sampling Person:	
		Sampling Company:	Client
☐	Turn-Around-Time Option:		Rush 5 working day(s)
☐	QC Option:		NEESA D
☐	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-21-5	VOC	03-01369-6- α	W	V	C	40	3	G	012903	N	0	7	☐
	MW-21-5	CRVI/Perch	03-01369-6- β	W	P		500	1	G	012903	N	0	7	☐
2	MW-21-4	VOC	03-01369-5- α	W	V	C	40	3	G	012903	N	0	7	☐
	MW-21-4	CRVI/Perch	03-01369-5- β	W	P		500	1	G	012903	N	0	7	☐
3	MW-21-3	VOC	03-01369-4- α	W	V	C	40	3	G	012903	N	0	7	☐
	MW-21-3	CRVI/Perch	03-01369-4- β	W	P		500	1	G	012903	N	0	7	☐
4	MW-21-2	VOC	03-01369-3- α	W	V	C	40	3	G	012903	N	0	7	☐
	MW-21-2	CRVI/Perch	03-01369-3- β	W	P		500	1	G	012903	N	0	7	☐
5	MW-21-1	VOC	03-01369-2- α	W	V	C	40	3	G	012903	N	0	7	☐
	MW-21-1	CRVI/Perch	03-01369-2- β	W	P		500	1	G	012903	N	0	7	☐
6	TB-1-1/29/03	VOC	03-01369-8	W	V	C	40	2	G	012903	N	0	7	☐
7	Source Blank-1	VOC	03-01369-7	W	V	C	40	3	G	012903	N	0	7	☐
8	EB-1-1/29/03	VOC	03-01369-1- α	W	V	C	40	3	G	012903	N	0	7	☐
	EB-1-1/29/03	CRVI/Perch	03-01369-1- β	W	P		500	1	G	012903	N	0	7	☐

Part 3: Analysis Information

Test Items:	☒ 24.2	Volatile Organic Compounds
	☒ 196	Chromium (VI)
	☒ 300.0	Perchlorate, low level
	☐ 200.7/6010	Sodium, Na, by ICP
	☐ 200.7/6010	Potassium, K, by ICP
	☐ 200.7/6010	Calcium, Ca, by ICP
	☐ 200.7/6010	Magnesium, Mg, by ICP
	☐ 200.7/6010	Iron, Fe, by ICP
	☐ 300.0	Sulfate (SO_4^{--}), by IC
	☐ 300.0/SM4500NO $_3$	Nitrate (NO_3^-) as N by IC
	☐ 300.0	Chloride Cl^- by IC
	☐ SM2320B	Carbonate
	☐ SM2320B	Bicarbonate
	☐ 9040/150.1	pH
	☐ 160.1	Solids, Total Dissolved (TDS)
	☐ 206.2/7060	Arsenic, As, by GFAA
	☐ 310.1	Alkalinity
	☐ PAH-SIM	PAH (NOAA)

Seq. #	Client's Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	524.2	CHROMIUM	PERCHL	NA	K	CA	MG	FE
1	MW-21-5	VOC	03-01369-6- α	W	X							☐
	MW-21-5	CRVI/Perch	03-01369-6- β	W		X	X					☐
2	MW-21-4	VOC	03-01369-5- α	W	X							☐
	MW-21-4	CRVI/Perch	03-01369-5- β	W		X	X					☐
3	MW-21-3	VOC	03-01369-4- α	W	X							☐
	MW-21-3	CRVI/Perch	03-01369-4- β	W		X	X					☐
4	MW-21-2	VOC	03-01369-3- α	W	X							☐
	MW-21-2	CRVI/Perch	03-01369-3- β	W		X	X					☐
5	MW-21-1	VOC	03-01369-2- α	W	X							☐
	MW-21-1	CRVI/Perch	03-01369-2- β	W		X	X					☐
6	TB-1-1/29/03	VOC	03-01369-8	W	X							☐
7	Source Blank-1	VOC	03-01369-7	W	X							☐
8	EB-1-1/29/03	VOC	03-01369-1- α	W	X							☐
	EB-1-1/29/03	CRVI/Perch	03-01369-1- β	W		X	X					☐

Seq. #	Client's Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	SO4	NO3	CL	CARBONATE	BICARBON	PH	TDS	AS
1	MW-21-5	VOC	03-01369-6- α	W								☐
	MW-21-5	CRVI/Perch	03-01369-6- β	W								☐
2	MW-21-4	VOC	03-01369-5- α	W								☐
	MW-21-4	CRVI/Perch	03-01369-5- β	W								☐
3	MW-21-3	VOC	03-01369-4- α	W								☐
	MW-21-3	CRVI/Perch	03-01369-4- β	W								☐
4	MW-21-2	VOC	03-01369-3- α	W								☐
	MW-21-2	CRVI/Perch	03-01369-3- β	W								☐
5	MW-21-1	VOC	03-01369-2- α	W								☐
	MW-21-1	CRVI/Perch	03-01369-2- β	W								☐
6	TB-1-1/29/03	VOC	03-01369-8	W								☐
7	Source Blank-1	VOC	03-01369-7	W								☐
8	EB-1-1/29/03	VOC	03-01369-1- α	W								☐
	EB-1-1/29/03	CRVI/Perch	03-01369-1- β	W								☐

Seq. #	Client's Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	ALKALIN	SIM
1	MW-21-5	VOC	03-01369-6- α	W		☐
	MW-21-5	CRVI/Perch	03-01369-6- β	W		☐
2	MW-21-4	VOC	03-01369-5- α	W		☐
	MW-21-4	CRVI/Perch	03-01369-5- β	W		☐
3	MW-21-3	VOC	03-01369-4- α	W		☐
	MW-21-3	CRVI/Perch	03-01369-4- β	W		☐
4	MW-21-2	VOC	03-01369-3- α	W		☐

	MW-21-2	CRVI/Perch	03-01369-3- β	W	☐
5	MW-21-1	VOC	03-01369-2- α	W	☐
	MW-21-1	CRVI/Perch	03-01369-2- β	W	☐
6	TB-1-1/29/03	VOC	03-01369-8	W	☐
7	Source Blank-1	VOC	03-01369-7	W	☐
8	EB-1-1/29/03	VOC	03-01369-1- α	W	☐
	EB-1-1/29/03	CRVI/Perch	03-01369-1- β	W	☐

- ☐ Client's Requirement: **PLEASE RUN MS/MSD ON SAMPLE # ~~40~~ 1/21/03**
- ☐ **IF ENOUGH SAMPLE**
- ☐ **FOR 8270SIM, PLEASE INCLUDE 1,4-DIOXANE**

Login By En-Yu Paul Kou

Check By ~~PK~~