Level C Data Package Deliverables

Metals

Applied P & Ch Laboratory

6150

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	05/02/2003
Project ID:	JPL	Service ID:	32987	Collected by:	
		Lab Sample ID:	03M1423-MB-01	Received Date:	05/02/2003
Sample ID:	**03M1423-MB-01**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Method Blank				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
ARSENIC	7440-38-2	µg/L	5	< 5	U	F		03M1423E	05/02/03	05/02/03	1	200.9
CALCIUM	7440-70-2	µg/L	200	< 200	U	P		03M1421M	05/02/03	05/02/03	1	200.7
IRON	7439-89-6	µg/L	50	13.6	B	P		03M1421M	05/02/03	05/02/03	1	200.7
MAGNESIUM	7439-95-4	µg/L	100	< 100	U	P		03M1421M	05/02/03	05/02/03	1	200.7
POTASSIUM	7440-09-7	µg/L	400	108	B	P		03M1421M	05/02/03	05/02/03	1	200.7
SODIUM	7440-23-5	µg/L	2000	< 2000	U	P		03M1421M	05/02/03	05/02/03	1	200.7

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

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

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

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/30/2003
Project ID:	JPL	Service ID:	32987	Collected by:	
		Lab Sample ID:	03-2987-1	Received Date:	04/30/2003
Sample ID:	**EB-8-4/30/03**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
ARSENIC	7440-38-2	μg/L	5	< 5	U	F		03M1423E	05/02/03	05/02/03	1	200.9
CALCIUM	7440-70-2	μg/L	200	< 200	U	P		03M1421M	05/02/03	05/02/03	1	200.7
IRON	7439-89-6	μg/L	50	23.3	B	P		03M1421M	05/02/03	05/02/03	1	200.7
MAGNESIUM	7439-95-4	μg/L	100	39.0	B	P		03M1421M	05/02/03	05/02/03	1	200.7
POTASSIUM	7440-09-7	μg/L	400	146	B	P		03M1421M	05/02/03	05/02/03	1	200.7
SODIUM	7440-23-5	μg/L	2000	< 2000	U	P		03M1421M	05/02/03	05/02/03	1	200.7

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

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

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

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/30/2003
Project ID:	JPL	Service ID:	32987	Collected by:	
		Lab Sample ID:	03-2987-2	Received Date:	04/30/2003
Sample ID:	**MW-23-1**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
ARSENIC	7440-38-2	µg/L	5	< 5	U	F		03M1423E	05/02/03	05/02/03	1	200.9
CALCIUM	7440-70-2	µg/L	200	147000		P		03M1421M	05/02/03	05/02/03	1	200.7
IRON	7439-89-6	µg/L	50	447		P		03M1421M	05/02/03	05/02/03	1	200.7
MAGNESIUM	7439-95-4	µg/L	100	50300		P		03M1421M	05/02/03	05/02/03	1	200.7
POTASSIUM	7440-09-7	µg/L	400	3030		P		03M1421M	05/02/03	05/02/03	1	200.7
SODIUM	7440-23-5	µg/L	2000	35900		P		03M1421M	05/02/03	05/02/03	1	200.7

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

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

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

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/30/2003
Project ID:	JPL	Service ID:	32987	Collected by:	
		Lab Sample ID:	03-2987-3	Received Date:	04/30/2003
Sample ID:	**MW-23-2**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
ARSENIC	7440-38-2	µg/L	5	< 5	U	F		03M1423E	05/02/03	05/02/03	1	200.9
CALCIUM	7440-70-2	µg/L	200	106000		P		03M1421M	05/02/03	05/02/03	1	200.7
IRON	7439-89-6	µg/L	50	49.2	B	P		03M1421M	05/02/03	05/02/03	1	200.7
MAGNESIUM	7439-95-4	µg/L	100	39900		P		03M1421M	05/02/03	05/02/03	1	200.7
POTASSIUM	7440-09-7	µg/L	400	2950		P		03M1421M	05/02/03	05/02/03	1	200.7
SODIUM	7440-23-5	µg/L	2000	36700		P		03M1421M	05/02/03	05/02/03	1	200.7

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

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

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

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/30/2003
Project ID:	JPL	Service ID:	32987	Collected by:	
		Lab Sample ID:	03-2987-4	Received Date:	04/30/2003
Sample ID:	**MW-23-3**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
ARSENIC	7440-38-2	μg/L	5	< 5	U	F		03M1423E	05/02/03	05/02/03	1	200.9
CALCIUM	7440-70-2	μg/L	200	40700		P		03M1421M	05/02/03	05/02/03	1	200.7
IRON	7439-89-6	μg/L	50	677		P		03M1421M	05/02/03	05/02/03	1	200.7
MAGNESIUM	7439-95-4	μg/L	100	13800		P		03M1421M	05/02/03	05/02/03	1	200.7
POTASSIUM	7440-09-7	μg/L	400	1760		P		03M1421M	05/02/03	05/02/03	1	200.7
SODIUM	7440-23-5	μg/L	2000	27000		P		03M1421M	05/02/03	05/02/03	1	200.7

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

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

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

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/30/2003
Project ID:	JPL	Service ID:	32987	Collected by:	
		Lab Sample ID:	03-2987-5	Received Date:	04/30/2003
Sample ID:	**MW-23-4**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
ARSENIC	7440-38-2	µg/L	5	< 5	U	F		03M1423E	05/02/03	05/02/03	1	200.9
CALCIUM	7440-70-2	µg/L	200	27400		P		03M1421M	05/02/03	05/02/03	1	200.7
IRON	7439-89-6	µg/L	50	59.3		P		03M1421M	05/02/03	05/02/03	1	200.7
MAGNESIUM	7439-95-4	µg/L	100	12500		P		03M1421M	05/02/03	05/02/03	1	200.7
POTASSIUM	7440-09-7	µg/L	400	1990		P		03M1421M	05/02/03	05/02/03	1	200.7
SODIUM	7440-23-5	µg/L	2000	30500		P		03M1421M	05/02/03	05/02/03	1	200.7

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

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

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

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/30/2003
Project ID:	JPL	Service ID:	32987	Collected by:	
		Lab Sample ID:	03-2987-6	Received Date:	04/30/2003
Sample ID:	**MW-23-5**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
ARSENIC	7440-38-2	µg/L	5	3.2	B	F		03M1423E	05/02/03	05/02/03	1	200.9
CALCIUM	7440-70-2	µg/L	200	5270		P		03M1421M	05/02/03	05/02/03	1	200.7
IRON	7439-89-6	µg/L	50	189		P		03M1421M	05/02/03	05/02/03	1	200.7
MAGNESIUM	7439-95-4	µg/L	100	450		P		03M1421M	05/02/03	05/02/03	1	200.7
POTASSIUM	7440-09-7	µg/L	400	2530		P		03M1421M	05/02/03	05/02/03	1	200.7
SODIUM	7440-23-5	µg/L	2000	97700		P		03M1421M	05/02/03	05/02/03	1	200.7

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

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

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

FORM-2A Metal

Applied P & Ch Laboratory

Initial and Continuing Calibration Verification

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032987	Sequence No.:	03M1421M
		Instrument:	ICP -M	Method:	200.7

Batch No.(s): 03M1421

Analysis Date: **05/02/03** Concentration Units: **UG/L**

#	Analyte	ICV	10:37		CCV	10:44		CCV	10:55		CCV	11:22	
		True	Result	%R	True	Result	%R	True	Result	%R	True	Result	%R
1	Calcium	100000.0	101474.19	101.5	50000.0	50194.23	100.4	50000.0	50152.68	100.3	50000.0	49767.75	99.5
2	Iron	10000.0	10196.16	102.0	5000.0	5147.33	102.9	5000.0	5206.46	104.1	5000.0	5272.79	105.5
3	Magnesium	50000.0	49248.16	98.5	25000.0	25347.94	101.4	25000.0	25908.25	103.6	25000.0	25608.27	102.4
4	Potassium	30000.0	29848.75	99.5	15000.0	15205.54	101.4	15000.0	15607.21	104.0	15000.0	15448.87	103.0
5	Sodium	200000.0	206815.06	103.4	100000.0	102387.51	102.4	100000.0	102741.90	102.7	100000.0	105114.37	105.1

(a) ICV Control Limit 95-105%; For Hg, 90-110%.

(b) CCV Control Limit 90-110%; For Hg, 80-120%.

FORM-2A Metal

Applied P & Ch Laboratory

Initial and Continuing Calibration Verification

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032987	Sequence No.:	03M1421M
		Instrument:	ICP -M	Method:	200.7

Batch No.(s): 03M1421

Analysis Date: **05/02/03** Concentration Units: **UG/L**

#	Analyte	CCV True	11:47 Result	%R	CCV True	12:31 Result	%R	True	Result	%R	True	Result	%R
1	Calcium	50000.0	51060.12	102.1	50000.0	51090.77	102.2						
2	Iron	5000.0	5380.15	107.6	5000.0	5418.29	108.4						
3	Magnesium	25000.0	25417.48	101.7	25000.0	25888.35	103.6						
4	Potassium	15000.0	16140.98	107.6	15000.0	15643.31	104.3						
5	Sodium	100000.0	107168.85	107.2	100000.0	106793.66	106.8						

(a) ICV Control Limit 95-105%; For Hg, 90-110%.

(b) CCV Control Limit 90-110%; For Hg, 80-120%.

FORM-2A Metal

Applied P & Ch Laboratory

Initial and Continuing Calibration Verification

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032987	Sequence No.:	03M1423E
		Instrument:	GFAA-E	Method:	200.9

Batch No.(s): 03M1423

Analysis Date: **05/02/03** Concentration Units: **UG/L**

		ICV	14:39		CCV	15:56		CCV	17:15		CCV	18:19	
#	Analyte	True	Result	%R	True	Result	%R	True	Result	%R	True	Result	%R
1	Arsenic	50.0	49.10	98.2	50.0	49.40	98.8	50.0	54.00	108.0	50.0	51.10	102.2

(a) ICV Control Limit 95-105%; For Hg, 90-110%.

(b) CCV Control Limit 90-110%; For Hg, 80-120%.

FORM-2B Metal

Applied P & Ch Laboratory

CRDL Standard For AA and ICP

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032987	Sequence No.:	03M1421M
		Instrument:	ICP -M	Method:	200.7

Batch No.(s): 03M1421

Analysis Date: **05/02/03** Concentration Units: **UG/L**

#	Analyte	True	10:48 Found	R%	Time Found	R%
1	Calcium	1000.0	659.21	65.9		
2	Iron	50.0	46.52	93.0		
3	Magnesium		3.65			
4	Potassium		100.49			
5	Sodium		-48.65			

FORM-3 Metal

Applied P & Ch Laboratory

Metal ICB/CCB Summary

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032987	Sequence No.:	03M1421M
		Instrument:	ICP -M	Method:	200.7

Batch No.(s): 03M1421

Analysis Date: **05/02/03** Concentration Units: **UG/L**

#	Analyte	ICB Result	10:40 C	CCB Result	10:46 C	CCB Result	10:57 C	CCB Result	11:24 C	CCB Result	11:49 C
1	Calcium	135.00	U	-226.82		-176.99	B	-251.81		135.00	U
2	Iron	-41.49	B	2.30	U	24.87	B	11.94	B	6.91	B
3	Magnesium	6.59	B	6.40	U	39.08	B	12.54	B	21.28	B
4	Potassium	100.18	B	108.27	B	107.19	B	113.21	B	104.65	B
5	Sodium	328.00	U	328.00	U	328.00	U	328.00	U	328.00	U

FORM-3 Metal

Applied P & Ch Laboratory

Metal ICB/CCB Summary

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032987	Sequence No.:	03M1421M
		Instrument:	ICP -M	Method:	200.7

Batch No.(s): 03M1421

Analysis Date: **05/02/03** Concentration Units: **UG/L**

#	Analyte	CCB Result	12:34 C	CCB Result	Time C	CCB Result	Time C	CCB Result	Time C	CCB Result	Time C
1	Calcium	-144.69	B								
2	Iron	41.97	B								
3	Magnesium	33.66	B								
4	Potassium	120.94	B								
5	Sodium	328.00	U								

FORM-3 Metal

Applied P & Ch Laboratory

Metal ICB/CCB Summary

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032987	Sequence No.:	03M1423E
		Instrument:	GFAA-E	Method:	200.9
Batch No.(s):	03M1423				

Analysis Date: **05/02/03** Concentration Units: **UG/L**

#	Analyte	ICB Result	14:46 C	CCB Result	16:02 C	CCB Result	17:22 C	CCB Result	18:26 C	CCB Result	Time C
1	Arsenic	2.10	U	2.10	U	2.10	U	2.10	U		

FORM-4 Metal

Applied P & Ch Laboratory

ICP Interference Check Sample

Client Name: GEOFON, Inc.
Project Name: JPL
Batch No.(s): 03M1421

Project No: 04-4428.10
Service ID: 032987
ICP ID Number: ICP -M

Lab Code: APCL
Sequence No.: 03M1421M

Analysis Date: **05/02/03**

Concentration Units: **UG/L**

#	Analyte	Expected Sol. A	Expected Sol. AB	Initial 10:50 Sol. A	Found 10:53 Sol. AB	%R	Final 12:16 Sol. A	Found 12:29 Sol. AB	%R
1	Calcium	500000	500000	515425	486581.3	97.3	510133	488682.2	97.7
2	Iron	200000	200000	189892	176853.5	88.4	192496	178430.0	89.2
3	Magnesium	500000	500000	483092	458182.8	91.6	482532	454444.7	90.9
4	Potassium	0	0	156	167.2		170	159.6	
5	Sodium	0	0	-293	-224.7		-216	-261.9	

FORM-5A Metal

Applied P & Ch Laboratory

Matrix Spike/Matrix Spike Duplicate Recovery for Method 200.9

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	32987
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03M1423E		
MS Filename:	-	Date Analyzed:	050203	Time Analyzed:	15:30
MSD Filename:	-	Date Analyzed:	050203	Time Analyzed:	15:37
MS Sample No:	**MW-23-5**	Sample Lab ID:	03-2987-6		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
ARSENIC	µg/L	50	3.2	56.4	106	75-125
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
ARSENIC	µg/L	50	55.8	105	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: _____

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FORM-5A Metal

Applied P & Ch Laboratory

Matrix Spike/Matrix Spike Duplicate Recovery for Method 200.7

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	32987
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03M1421M		
MS Filename:	-	Date Analyzed:	050203	Time Analyzed:	11:13
MSD Filename:	-	Date Analyzed:	050203	Time Analyzed:	11:15
MS Sample No:	**MW-23-5**	Sample Lab ID:	03-2987-6		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
CALCIUM	µg/L	20000	5270	26800	108	75-125
IRON	µg/L	1000	189	1260	107	75-125
MAGNESIUM	µg/L	10000	450	10700	103	75-125
POTASSIUM	µg/L	5000	2530	8700	123	75-125
SODIUM	µg/L	40000	97700	142000	111	75-125
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
CALCIUM	µg/L	20000	26500	106	2	20	75-125
IRON	µg/L	1000	1260	107	0	20	75-125
MAGNESIUM	µg/L	10000	10700	103	0	20	75-125
POTASSIUM	µg/L	5000	8540	120	2	20	75-125
SODIUM	µg/L	40000	144000	116	4	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: _____

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FORM-5B Metal

Applied P & Ch Laboratory

Post Digest Spike Sample Recovery

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032987	Sequence No.:	03M1421M
		Batch No.:	03M1421	Method:	200.7
Spike Sample No. :	03-2987-06	Matrix:	WATER	Instrument:	ICP -M
Client Sample No.:	**MW-23-5**	Analysis Date:	05/02/03		

Concentration Units: **UG/L**

#	Analyte	Spiked Sample Result(SSR)	11:18 C	Sample Result(SR)	11:06 C	Spike Added(SA)	% Rec.	Control Limit	Q
1	Calcium	26403.3594		5272.3296		20000.00	105.7	75-125	
2	Iron	1256.9731		189.0523		1000.00	106.8	75-125	
3	Magnesium	10915.2607		450.0708		10000.00	104.7	75-125	
4	Potassium	8759.2529		2525.3450		5000.00	124.7	75-125	
5	Sodium	143907.5781		97741.5859		40000.00	115.4	75-125	

FORM-5B Metal

Applied P & Ch Laboratory

Post Digest Spike Sample Recovery

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032987	Sequence No.:	03M1423E
		Batch No.:	03M1423	Method:	200.9
Spike Sample No. :	03-2987-06	Matrix:	WATER	Instrument:	GFAA-E
Client Sample No.:	MW-23-5	Analysis Date:	05/02/03		

Concentration Units: UG/L

#	Analyte	Spiked Sample Result(SSR)	15:43 C	Sample Result(SR)	15:11 C	Spike Added(SA)	% Rec.	Control Limit	Q
1	Arsenic	53.3000		3.2000	B	50.00	100.2	75-125	

FORM-6 Metal

Applied P & Ch Laboratory

Duplicates Verification

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032987	Sequence No.:	03M1421M
		Batch No.:	03M1421	Method:	200.7
Spike Sample No.	03-2987-06	Matrix:	WATER	Instrument:	ICP -M
Client Sample No.	**MW-23-5**	% Solid:	0.00	Analysis Date:	05/02/03

Concentration Unit: **UG/L**

#	Analyte	11:06 Sample(s)	C	11:09 Duplicate	C	RPD(%)	Q
1	Calcium	5272.3296		5161.7686		2.1	
2	Iron	189.0523		185.3369		2.0	
3	Magnesium	450.0708		452.7576		0.6	
4	Potassium	2525.3450		2418.9983		4.3	
5	Sodium	97741.5859		98020.2188		0.3	

FORM-6 Metal

Applied P & Ch Laboratory

Duplicates Verification

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032987	Sequence No.:	03M1423E
		Batch No.:	03M1423	Method:	200.9
Spike Sample No.	03-2987-06	Matrix:	WATER	Instrument:	GFAA-E
Client Sample No.	MW-23-5	% Solid:	0.00	Analysis Date:	05/02/03

Concentration Unit: UG/L

#	Analyte	15:11 Sample(s)	C	15:17 Duplicate	C	RPD(%)	Q
1	Arsenic	3.2000	B	3.0000	B	6.5	

FORM-7 Metal

Applied P & Ch Laboratory

Lab Control Spike/Lab Control Spike Duplicate Recovery for Method 200.9

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	32987
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03M1423E		
LCS Filename:	-	Date Analyzed:	050203	Time Analyzed:	14:58
LCSD Filename:	-	Date Analyzed:	050203	Time Analyzed:	15:04

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
ARSENIC	μg/L	50	0	47.4	95	80-120
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	LCSD Concentration	LCSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
ARSENIC	μg/L	50	47.6	95	0	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-7 Metal

Applied P & Ch Laboratory

Lab Control Spike/Lab Control Spike Duplicate Recovery for Method 200.7

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	32987
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03M1421M		
LCS Filename:	-	Date Analyzed:	050203	Time Analyzed:	11:02
LCSD Filename:	-	Date Analyzed:	050203	Time Analyzed:	11:04

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
CALCIUM	µg/L	20000	0	20200	101	80-120
IRON	µg/L	1000	0	1050	105	80-120
MAGNESIUM	µg/L	10000	0	10200	102	80-120
POTASSIUM	µg/L	5000	0	5270	105	80-120
SODIUM	µg/L	40000	0	39700	99	80-120
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	LCSD Concentration	LCSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
CALCIUM	µg/L	20000	20500	103	2	20	80-120
IRON	µg/L	1000	1060	106	1	20	80-120
MAGNESIUM	µg/L	10000	9980	100	2	20	80-120
POTASSIUM	µg/L	5000	5160	103	2	20	80-120
SODIUM	µg/L	40000	40800	102	3	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-9 Metal

Applied P & Ch Laboratory

Serial Dilution

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032987	Sequence No.:	03M1421M
		Batch No.:	03M1421	Method:	200.7
Dilution Sample No.:	03-2987-06	Matrix:	WATER	Instrument:	ICP -M
Client Sample No.:	MW-23-5	Analysis Date:	05/02/03		

Concentration Units: **UG/L**

#	Analyte	Initial Sample Results(I)	11:06 C	Serial Dilut Results(S)	11:11 C	% Diff.	Q
1	Calcium	5272.33		5252.51		0.4	
2	Iron	189.05		231.27	B	22.3	E
3	Magnesium	450.07		552.43		22.7	E
4	Potassium	2525.34		2224.24		11.9	E
5	Sodium	97741.59		96143.76		1.6	

FORM-9 Metal

Applied P & Ch Laboratory

Serial Dilution

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032987	Sequence No.:	03M1423E
		Batch No.:	03M1423	Method:	200.9
Dilution Sample No.:	03-2987-06	Matrix:	WATER	Instrument:	GFAA-E
Client Sample No.:	MW-23-5	Analysis Date:	05/02/03		

Concentration Units: **UG/L**

#	Analyte	Initial Sample Results(I)	15:11 C	Serial Dilut Results(S)	15:24 C	% Diff.	Q
1	Arsenic	3.20	B	2.50	U	100.0	

FORM-13 Metal

Applied P & Ch Laboratory

Preparation Log

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032987	Sequence No.:	03M1421M
		Batch No.:	03M1421	Method:	200.7
Preparation Matrix:	WATER	Instrument:	ICP -M		

#	Client Sample No.	APCL Sample No.	Preparation Date	Weight (gram)	Volume (ml)
1	DUPE-4-2Q03	03-2964-01	05/02/03		50.0
2	EB-7-4/29/03	03-2964-02	05/02/03		50.0
3	MW-24-1	03-2964-03	05/02/03		50.0
4	MW-24-2	03-2964-04	05/02/03		50.0
5	MW-24-3	03-2964-05	05/02/03		50.0
6	MW-24-4	03-2964-06	05/02/03		50.0
7	MW-24-5	03-2964-07	05/02/03		50.0
8	MW-23-5	03-2987-06DM	05/02/03		50.0
9	EB-8-4/30/03	03-2987-01	05/02/03		50.0
10	MW-23-1	03-2987-02	05/02/03		50.0
11	MW-23-2	03-2987-03	05/02/03		50.0
12	MW-23-3	03-2987-04	05/02/03		50.0
13	MW-23-4	03-2987-05	05/02/03		50.0
14	DUPE-5-2Q03	03-3015-01	05/02/03		50.0
15	EB-9-5/1/03	03-3015-02	05/02/03		50.0
16	MW-3-1	03-3015-03	05/02/03		50.0
17	MW-3-2	03-3015-04	05/02/03		50.0
18	MW-3-3	03-3015-05	05/02/03		50.0
19	MW-3-4	03-3015-06	05/02/03		50.0
20	MW-3-5	03-3015-07	05/02/03		50.0
21		03M1421MB	05/02/03		50.0
22		03M1421LCS	05/02/03		50.0
23		03M1421LCSD	05/02/03		50.0
24	MW-23-5 Dup.	03M1421MD	05/02/03		50.0
25	MW-23-5 MS	03M1421MS	05/02/03		50.0
26	MW-23-5 MSD	03M1421MSD	05/02/03		50.0

FORM-13 Metal

Applied P & Ch Laboratory

Preparation Log

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032987	Sequence No.:	03M1423E
		Batch No.:	03M1423	Method:	200.9
Preparation Matrix:	WATER	Instrument:	GFAA-E		

#	Client Sample No.	APCL Sample No.	Preparation Date	Weight (gram)	Volume (ml)
1	DUPE-4-2Q03	03-2964-01	05/02/03		50.0
2	EB-7-4/29/03	03-2964-02	05/02/03		50.0
3	MW-24-1	03-2964-03	05/02/03		50.0
4	MW-24-2	03-2964-04	05/02/03		50.0
5	MW-24-3	03-2964-05	05/02/03		50.0
6	MW-24-4	03-2964-06	05/02/03		50.0
7	MW-24-5	03-2964-07	05/02/03		50.0
8	MW-23-5	03-2987-06DM	05/02/03		50.0
9	EB-8-4/30/03	03-2987-01	05/02/03		50.0
10	MW-23-1	03-2987-02	05/02/03		50.0
11	MW-23-2	03-2987-03	05/02/03		50.0
12	MW-23-3	03-2987-04	05/02/03		50.0
13	MW-23-4	03-2987-05	05/02/03		50.0
14	DUPE-5-2Q03	03-3015-01	05/02/03		50.0
15	EB-9-5/1/03	03-3015-02	05/02/03		50.0
16	MW-3-1	03-3015-03	05/02/03		50.0
17	MW-3-2	03-3015-04	05/02/03		50.0
18	MW-3-3	03-3015-05	05/02/03		50.0
19	MW-3-4	03-3015-06	05/02/03		50.0
20	MW-3-5	03-3015-07	05/02/03		50.0
21		03M1423MB	05/02/03		50.0
22		03M1423LCS	05/02/03		50.0
23		03M1423LCSD	05/02/03		50.0
24	MW-23-5 Dup.	03M1423MD	05/02/03		50.0
25	MW-23-5 MS	03M1423MS	05/02/03		50.0
26	MW-23-5 MSD	03M1423MSD	05/02/03		50.0

FORM-14 Metal

Applied P & Ch Laboratory

Analysis Run Log

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032987	Sequence No.:	03M1421M
		Instrument:	ICP -M	Method:	200.7
Batch No.(s):	03M1421	Start Date:	05/02/03	End Date:	05/02/03

#	APCL Sample No.	D/F	Time	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Hg	Ni	K	Se	Ag	Na	Tl	V	Zn	Mo	Sr	Ti	Sn	Li	B	Si
1	Calib Blank	1.00	10:28	√										√		√				√			√										
2	STD1 1423A	1.00	10:30	√										√		√				√			√										
3	STD2 1423B	1.00	10:33	√										√		√				√			√										
4	STD3 1423C	1.00	10:35	√										√		√				√			√										
5	ICV 1447A	1.00	10:37	√										√		√				√			√										
6	ICB	1.00	10:40	√										√		√				√			√										
7	Calib Blank	1.00	10:42	√										√		√				√			√										
8	CCV 1447B	1.00	10:44	√										√		√				√			√										
9	CCB	1.00	10:46	√										√		√				√			√										
10	CRI A1432	1.00	10:48	√										√		√				√			√										
11	ICSA 1441	1.00	10:50	√										√		√				√			√										
12	ICSAB 1443	1.00	10:53	√										√		√				√			√										
13	CCV 1447B	1.00	10:55	√										√		√				√			√										
14	CCB	1.00	10:57	√										√		√				√			√										
15	M-BL 03M1421 W	1.00	10:59	√										√		√				√			√										
16	LCS-03M1421	1.00	11:02	√										√		√				√			√										
17	LCSD-03M1421	1.00	11:04	√										√		√				√			√										
18	2987-6 S F=1	1.00	11:06	√										√		√				√			√										
19	2987-6 D F=1	1.00	11:09	√										√		√				√			√										
20	2987-6 1/5 F=5	5.00	11:11	√										√		√				√			√										
21	2987-6 MS F=1	1.00	11:13	√										√		√				√			√										
22	2987-6 MSD F=1	1.00	11:15	√										√		√				√			√										
23	2987-6 PS F=1	1.00	11:18	√										√		√				√			√										
24	2987-1 F=1	1.00	11:20	√										√		√				√			√										
25	CCV 1447B	1.00	11:22	√										√		√				√			√										
26	CCB	1.00	11:24	√										√		√				√			√										
27	2987-2 F=1	1.00	11:27	√										√		√				√			√										
28	2987-3 F=1	1.00	11:29	√										√		√				√			√										
29	2987-4 F=1	1.00	11:31	√										√		√				√			√										
30	2987-5 F=1	1.00	11:33	√										√		√				√			√										
31	2964-1 F=1	1.00	11:36	√										√		√				√			√										
32	2964-2 F=1	1.00	11:38	√										√		√				√			√										
33	2964-3 F=1	1.00	11:40	√										√		√				√			√										
34	2964-4 F=1	1.00	11:42	√										√		√				√			√										
35	2964-5 F=1	1.00	11:45	√										√		√				√			√										
36	CCV 1447B	1.00	11:47	√										√		√				√			√										
37	CCB	1.00	11:49	√										√		√				√			√										
38	2964-6 F=1	1.00	11:52	√										√		√				√			√										
39	2964-7 F=1	1.00	11:58	√										√		√				√			√										
40	3015-1 F=1	1.00	12:00	√										√		√				√			√										

FORM-14 Metal

Applied P & Ch Laboratory

Analysis Run Log

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032987	Sequence No.:	03M1421M
		Instrument:	ICP -M	Method:	200.7
Batch No.(s):	03M1421	Start Date:	05/02/03	End Date:	05/02/03

#	APCL Sample No.	D/F	Time	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Hg	Ni	K	Se	Ag	Na	Tl	V	Zn	Mo	Sr	Ti	Sn	Li	B	Si
41	3015-2 F=1	1.00	12:02	√						√				√		√				√			√										
42	3015-3 F=1	1.00	12:04	√						√				√		√				√			√										
43	3015-4 F=1	1.00	12:07	√						√				√		√				√			√										
44	3015-5 F=1	1.00	12:09	√						√				√		√				√			√										
45	3015-6 F=1	1.00	12:11	√						√				√		√				√			√										
46	3015-7 F=1	1.00	12:13	√						√				√		√				√			√										
47	ICSA 1441	1.00	12:16	√						√				√		√				√			√										
48	ICSAB 1443	1.00	12:29	√						√				√		√				√			√										
49	CCV 1447B	1.00	12:31	√						√				√		√				√			√										
50	CCB	1.00	12:34	√						√				√		√				√			√										

FORM-14 Metal

Applied P & Ch Laboratory

Analysis Run Log

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032987	Sequence No.:	03M1423E
		Instrument:	GFAA-E	Method:	200.9
Batch No.(s):	03M1423	Start Date:	05/02/03	End Date:	05/02/03

#	APCL Sample No.	D/F	Time	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Hg Ni K Se Ag Na Tl V Zn Mo Sr Ti Sn Li B Si
1	Calib. Blank	1.00	14:05	√
2	1/2 STD1 1472A	1.00	14:11	√
3	STD1 1472A	1.00	14:17	√
4	STD2 1472B	1.00	14:23	√
5	STD3 1472C	1.00	14:30	√
6	ICV A1474	1.00	14:39	√
7	ICB	1.00	14:46	√
8	M-BL 03M1423	1.00	14:52	√
9	LCS-03M1423	1.00	14:58	√
10	LCSD-03M1423	1.00	15:04	√
11	2987-6 S F=1	1.00	15:11	√
12	2987-6 D F=1	1.00	15:17	√
13	2987-6 1/5 F=5	5.00	15:24	√
14	2987-6 MS F=1	1.00	15:30	√
15	2987-6 MSD F=1	1.00	15:37	√
16	2987-6 PS F=1	1.00	15:43	√
17	2987-1 F=1	1.00	15:50	√
18	CCV A1474	1.00	15:56	√
19	CCB	1.00	16:02	√
20	2987-2 F=1	1.00	16:09	√
21	2987-3 F=1	1.00	16:15	√
22	2987-4 F=1	1.00	16:21	√
23	2987-5 F=1	1.00	16:27	√
24	2964-1 F=1	1.00	16:34	√
25	2964-2 F=1	1.00	16:40	√
26	2964-3 F=1	1.00	16:46	√
27	2964-4 F=1	1.00	16:52	√
28	2964-5 F=1	1.00	17:02	√
29	2964-6 F=1	1.00	17:09	√
30	CCV A1474	1.00	17:15	√
31	CCB	1.00	17:22	√
32	2964-7 F=1	1.00	17:28	√
33	3015-1 F=1	1.00	17:34	√
34	3015-2 F=1	1.00	17:41	√
35	3015-3 F=1	1.00	17:47	√
36	3015-4 F=1	1.00	17:54	√
37	3015-5 F=1	1.00	18:00	√
38	3015-6 F=1	1.00	18:07	√
39	3015-7 F=1	1.00	18:13	√
40	CCV A1474	1.00	18:19	√

FORM-14 Metal

Applied P & Ch Laboratory

Analysis Run Log

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032987	Sequence No.:	03M1423E
		Instrument:	GFAA-E	Method:	200.9
Batch No.(s):	03M1423	Start Date:	05/02/03	End Date:	05/02/03

#	APCL Sample No.	D/F	Time	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Hg	Ni	K	Se	Ag	Na	Tl	V	Zn	Mo	Sr	Ti	Sn	Li	B	Si
41	CCB	1.00	18:26	√																												

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

Metal Digestion (3010/3050) Worksheet

Batch #03M1402 Matrix: W Method used: 3010A Date: 5/2/03 Digested by: XL Diluted by: _____

Lot #: ASTM Type I water RW1609 HNO_3 110220 H_2SO_4 _____ HCl 4102052 H_2O_2 _____

OP #	Type	Samp ID /Lot #	X (g or mL)	$V_{digest}/X = f_1$	$V_f/V_i = f_2$	$V_f'/V_i' = f_3$	$F=f_1 f_2 f_3$	Note
1105	Method Blank	Bl. Lot: RW1609	50	50 /X= 1	/ =	/ =		8 ml
1106	LCS1	Bl. Lot: "		/X=	/ =	/ =		T=95°C
1107	Sample-1	2987-4		/X=	/ =	/ =		
1108	MS1 on S-1	-6		/X=	/ =	/ =		
1109	MS2 on S-1	-6		/X=	/ =	/ =		
1110	Sample 2	-1		/X=	/ =	/ =		
1111	Sample 3	-2		/X=	/ =	/ =		
1112	Sample 4	-3		/X=	/ =	/ =		
1113	Sample 5	-4		/X=	/ =	/ =		
1114	Sample 6	-5		/X=	/ =	/ =		
1115	Sample 7	2964-1		/X=	/ =	/ =		
1116	Sample 8	-2		/X=	/ =	/ =		
1117	Sample 9	-3		/X=	/ =	/ =		
1118	Sample 10	-4		/X=	/ =	/ =		
1119	LCS2	Bl. Lot: RW1609		/X=	/ =	/ =		
1120	Sample 11	-5		/X=	/ =	/ =		
1121	Sample 12	-6		/X=	/ =	/ =		
1122	Sample 13	-7		/X=	/ =	/ =		
1123	Sample 14	3015-1		/X=	/ =	/ =		
1124	Sample 15	-2		/X=	/ =	/ =		
1125	Sample 16	-3		/X=	/ =	/ =		
1126	Sample 17	-4		/X=	/ =	/ =		
1127	Sample 18	-5		/X=	/ =	/ =		
1128	Sample 19	-6		/X=	/ =	/ =		
1129	Sample 20	-7		/X=	/ =	/ =		
1130	Duplicate	2987-6	↓	↓ /X= ↓	/ =	/ =		

Specification of matrix spike and lab control spike

QC Type	Spiked Element *	Spike Stock Solution Lot #	Spike Stock (Rep.) Conc. C_s, µg/mL	Spike Stock Volum Used V_s mL	Spike Level $T'=C_s V_s/V$ ppm or mg/L	Sample Spike T, ppm
MS1	/As/Se/Sb/M_{20}	AA- /AA- /AA- /AA 1123	/ / / 75	/ / / 2	/ / / 1	
MS2	/As/Se/Sb/M_{20}	AA- /AA- /AA- /AA- "	/ / /	/ / /	/ / /	
LCS1	/As/Se/Sb/M_{20}	AA- /AA- /AA- /AA 1092	/ / /	/ / /	/ / /	
LCS2	/As/Se/Sb/M_{20}	AA- /AA- /AA- /AA- "	/ / / ↓	/ / / ↓	/ / / ↓	

* Notation: T – rep. sample spike level. T' – digest solution spike level. $T=f\ T'=C_s V_s/X$. M20 (or M_j) represents 20 (or j) metals, (see STD logbook).
If digest needs dilution for different metals, use dilution worksheet.

Supervisor Initial 6/5/03

Applied P & Ch Laboratory
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Digest-007

Metal Digestion (3010/3050) Worksheet

Batch # 03M1423 Matrix: W Method used: 3020A Date: 5/2/03 Digested by: XV Diluted by: _____

Lot #: ASTM Type I water RW1409 HNO_3 1402120 H_2SO_4 _____ HCl _____ H_2O_2 _____

OP #	Type	Samp ID /Lot #	X (g or mL)	$V_{digest}/X = f_1$	$V_f/V_i = f_2$	$V_f'/V_i' = f_3$	$F=f_1f_2f_3$	Note
1157	Method Blank	Bl. Lot: RW1409	50	50 /X= 1	/ =	/ =		GFAA/AS
1158	LCS1	Bl. Lot: 4		/X=	/ =	/ =		T=95°C
1159	Sample-1	2987-6		/X=	/ =	/ =		
1160	MS1 on S-1	-6		/X=	/ =	/ =		
1161	MS2 on S-1	-6		/X=	/ =	/ =		
1162	Sample 2	-1		/X=	/ =	/ =		
1163	Sample 3	-2		/X=	/ =	/ =		
1164	Sample 4	-3		/X=	/ =	/ =		
1165	Sample 5	-4		/X=	/ =	/ =		
1166	Sample 6	-5		/X=	/ =	/ =		
1167	Sample 7	2964-1		/X=	/ =	/ =		
1168	Sample 8	-2		/X=	/ =	/ =		
1169	Sample 9	-3		/X=	/ =	/ =		
1170	Sample 10	-4		/X=	/ =	/ =		
1171	LCS2	Bl. Lot: RW1409		/X=	/ =	/ =		
1172	Sample 11	-5		/X=	/ =	/ =		
1173	Sample 12	-6		/X=	/ =	/ =		
1174	Sample 13	-7		/X=	/ =	/ =		
1175	Sample 14	3015-1		/X=	/ =	/ =		
1176	Sample 15	-2		/X=	/ =	/ =		
1177	Sample 16	-3		/X=	/ =	/ =		
1178	Sample 17	-4		/X=	/ =	/ =		
1179	Sample 18	-5		/X=	/ =	/ =		
1180	Sample 19	-6		/X=	/ =	/ =		
1181	Sample 20	-7		/X=	/ =	/ =		
1182	Duplicate	2987-6		/X=	/ =	/ =		

Specification of matrix spike and lab control spike

QC Type	Spiked Element *	Spike Stock Solution Lot #	Spike Stock (Rep.) Conc. C_s, μg/mL	Spike Stock Volum Used V_s mL	Spike Level $T'=C_sV_s/V$ ppm or mg/L	Sample Spike T, ppm
MS1	/AsSe/Sb/M_{20}	AA- /AA-1473 /AA- /AA-	/ 5 / /	0.5 / /	/ 0.05 /	
MS2	/AsSe/Sb/M_{20}	AA- /AA-11 /AA- /AA-	/ / /	/ / /	/ / /	
LCS1	/AsSe/Sb/M_{20}	AA- /AA-1471 /AA- /AA-	/ / /	/ / /	/ / /	
LCS2	/AsSe/Sb/M_{20}	AA- /AA-11 /AA- /AA-	/ / /	/ / /	/ / /	

* Notation: T - rep. sample spike level. T' - digest solution spike level. $T=f\ T'=C_sV_s/X$. M20 (or M_j) represents 20 (or j) metals, (see STD logbook).
If digest needs dilution for different metals, use dilution worksheet.

APCL form 6-116 April. 03, 1996. Ver. 4.0 No pencil. Use blue pen for record. Use red pen for correction.
Root-File:[CUST.DOC.AA]DIGEST_ROOT.TEX File:[CUST.DOC.AA]DIGEST .TEX

Supervisor Initial 6/6/03

Level C Data Package Deliverables

Wet Chemistry

Applied P & Ch Laboratory

6184

Applied P & Ch Laboratory

Wet Analysis Results for Method SM2320B

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Anal. Method	SM2320B
Project ID:	JPL	Service ID:	32987	Collected by:	

Component Name: Bicarbonate
CAS No:

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-2987-1	EB-8-4/30/03	Water	04/30/03	04/30/03	05/01/03	03W2667	mg/L	2	< 2	U
03-2987-2	MW-23-1	Water	04/30/03	04/30/03	05/01/03	03W2667	mg/L	2	243	
03-2987-3	MW-23-2	Water	04/30/03	04/30/03	05/01/03	03W2667	mg/L	2	215	
03-2987-4	MW-23-3	Water	04/30/03	04/30/03	05/01/03	03W2667	mg/L	2	146	
03-2987-5	MW-23-4	Water	04/30/03	04/30/03	05/01/03	03W2667	mg/L	2	125	
03-2987-6	MW-23-5	Water	04/30/03	04/30/03	05/01/03	03W2667	mg/L	2	95.8	
03W2667-MB-01	03W2667-MB-01	Water	05/01/03	05/01/03	05/01/03	03W2667	mg/L	2	< 2	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 SM2320B

Client Name: GEOFON, Inc. Project No: 04-4428.10 Anal. Method SM2320B
Project ID: JPL Service ID: 32987 Collected by:

Component Name: Carbonate
CAS No:

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-2987-1	EB-8-4/30/03	Water	04/30/03	04/30/03	05/01/03	03W2667	mg-$CaCO_3$/L	2	<2	U
03-2987-2	MW-23-1	Water	04/30/03	04/30/03	05/01/03	03W2667	mg-$CaCO_3$/L	2	<2	U
03-2987-3	MW-23-2	Water	04/30/03	04/30/03	05/01/03	03W2667	mg-$CaCO_3$/L	2	<2	U
03-2987-4	MW-23-3	Water	04/30/03	04/30/03	05/01/03	03W2667	mg-$CaCO_3$/L	2	<2	U
03-2987-5	MW-23-4	Water	04/30/03	04/30/03	05/01/03	03W2667	mg-$CaCO_3$/L	2	5.2	
03-2987-6	MW-23-5	Water	04/30/03	04/30/03	05/01/03	03W2667	mg-$CaCO_3$/L	2	92.0	
03W2667-MB-01	03W2667-MB-01	Water	05/01/03	05/01/03	05/01/03	03W2667	mg-$CaCO_3$/L	2	<2	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.

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Wet Analysis Results for Method 9040B

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Anal. Method	9040B
Project ID:	JPL	Service ID:	32987	Collected by:	

Component Name: pH
CAS No: 10-29-7

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-2987-1	EB-8-4/30/03	Water	04/30/03	04/30/03	04/30/03	03W2651	pH unit	0.01	6.48	
03-2987-2	MW-23-1	Water	04/30/03	04/30/03	04/30/03	03W2651	pH unit	0.01	7.00	
03-2987-3	MW-23-2	Water	04/30/03	04/30/03	04/30/03	03W2651	pH unit	0.01	7.70	
03-2987-4	MW-23-3	Water	04/30/03	04/30/03	04/30/03	03W2651	pH unit	0.01	7.88	
03-2987-5	MW-23-4	Water	04/30/03	04/30/03	04/30/03	03W2651	pH unit	0.01	8.28	
03-2987-6	MW-23-5	Water	04/30/03	04/30/03	04/30/03	03W2651	pH unit	0.01	9.55	
03W2651-MB-01	03W2651-MB-01	Water	04/30/03	04/30/03	04/30/03	03W2651	pH unit	0.01	6.85	

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

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Wet Analysis Results for Method 160.1

Client Name: GEOFON, Inc. Project No: 04-4428.10 Anal. Method 160.1
Project ID: JPL Service ID: 32987 Collected by:

Component Name: Solids, Total Dissolved (TDS)
CAS No: 10-33-3

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-2987-1	EB-8-4/30/03	Water	04/30/03	04/30/03	05/01/03	03W2666	mg/L	10	6.0	B
03-2987-2	MW-23-1	Water	04/30/03	04/30/03	05/01/03	03W2666	mg/L	10	765	
03-2987-3	MW-23-2	Water	04/30/03	04/30/03	05/01/03	03W2666	mg/L	10	606	
03-2987-4	MW-23-3	Water	04/30/03	04/30/03	05/01/03	03W2666	mg/L	10	284	
03-2987-5	MW-23-4	Water	04/30/03	04/30/03	05/01/03	03W2666	mg/L	10	220	
03-2987-6	MW-23-5	Water	04/30/03	04/30/03	05/01/03	03W2666	mg/L	10	263	
03W2666-MB-01	03W2666-MB-01	Water	05/01/03	05/01/03	05/01/03	03W2666	mg/L	10	<10	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.

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Wet Analysis Results for Method 7196

Client Name: GEOFON, Inc. Project No: 04-4428.10 Anal. Method 7196
Project ID: JPL Service ID: 32987 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
03-2987-1	EB-8-4/30/03	Water	04/30/03	04/30/03	04/30/03	03W2647	mg/L	0.01	<0.01	U
03-2987-2	MW-23-1	Water	04/30/03	04/30/03	04/30/03	03W2647	mg/L	0.01	<0.01	U
03-2987-3	MW-23-2	Water	04/30/03	04/30/03	04/30/03	03W2647	mg/L	0.01	<0.01	U
03-2987-4	MW-23-3	Water	04/30/03	04/30/03	04/30/03	03W2647	mg/L	0.01	<0.01	U
03-2987-5	MW-23-4	Water	04/30/03	04/30/03	04/30/03	03W2647	mg/L	0.01	<0.01	U
03-2987-6	MW-23-5	Water	04/30/03	04/30/03	04/30/03	03W2647	mg/L	0.01	<0.01	U
03W2647-MB-01	03W2647-MB-01	Water	04/30/03	04/30/03	04/30/03	03W2647	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.

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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:	32987	Collected by:	

Component Name: Perchlorate
CAS No:

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-2987-1	EB-8-4/30/03	Water	04/30/03	04/30/03	05/05/03	03W2719	µg/L	4	<4	U
03-2987-2	MW-23-1	Water	04/30/03	04/30/03	05/05/03	03W2719	µg/L	4	2.9	B
03-2987-3	MW-23-2	Water	04/30/03	04/30/03	05/05/03	03W2719	µg/L	4	3.8	B
03-2987-4	MW-23-3	Water	04/30/03	04/30/03	05/05/03	03W2719	µg/L	4	<4	U
03-2987-5	MW-23-4	Water	04/30/03	04/30/03	05/05/03	03W2719	µg/L	4	<4	U
03-2987-6	MW-23-5	Water	04/30/03	04/30/03	05/05/03	03W2719	µg/L	4	<4	U
03W2719-MB-01	03W2719-MB-01	Water	05/05/03	05/05/03	05/05/03	03W2719	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.

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Wet Analysis Results for Method 300.0

Client Name: GEOFON, Inc. Project No: 04-4428.10 Anal. Method 300.0
Project ID: JPL Service ID: 32987 Collected by:

Component Name: Chloride Cl^-
CAS No: 16887-00-6

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-2987-1	EB-8-4/30/03	Water	04/30/03	04/30/03	05/01/03	03W2658	mg/L	0.25	0.20	B
03-2987-2	MW-23-1	Water	04/30/03	04/30/03	05/01/03	03W2658	mg/L	4	118	
03-2987-3	MW-23-2	Water	04/30/03	04/30/03	05/01/03	03W2658	mg/L	2	96.5	
03-2987-4	MW-23-3	Water	04/30/03	04/30/03	05/01/03	03W2658	mg/L	0.8	20.0	
03-2987-5	MW-23-4	Water	04/30/03	04/30/03	05/01/03	03W2658	mg/L	0.4	17.7	
03-2987-6	MW-23-5	Water	04/30/03	04/30/03	05/01/03	03W2658	mg/L	0.5	14.5	
03W2658-MB-01	03W2658-MB-01	Water	05/01/03	05/01/03	05/01/03	03W2658	mg/L	0.2	<0.2	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.

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Wet Analysis Results for Method 300.0

Client Name: GEOFON, Inc. Project No: 04-4428.10 Anal. Method 300.0
Project ID: JPL Service ID: 32987 Collected by:

Component Name: Nitrate as N
CAS No: 14797-55-8

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-2987-1	EB-8-4/30/03	Water	04/30/03	04/30/03	05/01/03	03W2658	mg/L	0.05	0.067	
03-2987-2	MW-23-1	Water	04/30/03	04/30/03	05/01/03	03W2658	mg/L	0.8	13.8	
03-2987-3	MW-23-2	Water	04/30/03	04/30/03	05/01/03	03W2658	mg/L	0.4	12.5	
03-2987-4	MW-23-3	Water	04/30/03	04/30/03	05/01/03	03W2658	mg/L	0.16	7.2	
03-2987-5	MW-23-4	Water	04/30/03	04/30/03	05/01/03	03W2658	mg/L	0.08	6.5	
03-2987-6	MW-23-5	Water	04/30/03	04/30/03	05/01/03	03W2658	mg/L	0.1	0.14	
03W2658-MB-01	03W2658-MB-01	Water	05/01/03	05/01/03	05/01/03	03W2658	mg/L	0.04	<0.04	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.

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Wet Analysis Results for Method 300.0

Client Name: GEOFON, Inc. Project No: 04-4428.10 Anal. Method 300.0
Project ID: JPL Service ID: 32987 Collected by:

Component Name: Sulfate SO_4^{--}
CAS No: 14808-79-8

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-2987-1	EB-8-4/30/03	Water	04/30/03	04/30/03	05/01/03	03W2658	mg/L	0.63	<0.63	U
03-2987-2	MW-23-1	Water	04/30/03	04/30/03	05/01/03	03W2658	mg/L	10	183	
03-2987-3	MW-23-2	Water	04/30/03	04/30/03	05/01/03	03W2658	mg/L	5	124	
03-2987-4	MW-23-3	Water	04/30/03	04/30/03	05/01/03	03W2658	mg/L	2	14.4	
03-2987-5	MW-23-4	Water	04/30/03	04/30/03	05/01/03	03W2658	mg/L	1	8.5	
03-2987-6	MW-23-5	Water	04/30/03	04/30/03	05/01/03	03W2658	mg/L	1.3	2.2	
03W2658-MB-01	03W2658-MB-01	Water	05/01/03	05/01/03	05/01/03	03W2658	mg/L	0.5	<0.5	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 300.0

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	32987
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W2658		
LCS Filename:	-	Date Analyzed:	050103	Time Analyzed:	11:09
LCSD Filename:	-	Date Analyzed:	050103	Time Analyzed:	11:39

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
CHLORIDE CL^-	mg/L	4.0	0	3.96	99	80-120
NITRATE AS N	mg/L	1.5	0	1.52	101	80-120
SULFATE SO_4^{--}	mg/L	15	0	15.0	100	80-120
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	LCSD Concentration	LCSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
CHLORIDE CL^-	mg/L	4.0	3.94	99	0	20	80-120
NITRATE AS N	mg/L	1.5	1.53	102	1	20	80-120
SULFATE SO_4^{--}	mg/L	15	15.1	101	1	25	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 300.0

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	32987
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W2658		
MS Filename:	-	Date Analyzed:	050103	Time Analyzed:	14:30
MSD Filename:	-	Date Analyzed:	050103	Time Analyzed:	14:43
MS Sample No:	**MW-23-5**	Sample Lab ID:	03-2987-6		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
CHLORIDE CL^-	mg/L	20.0	14.5	34.7	101	75-125
NITRATE AS N	mg/L	7.50	0.14	7.51	98	75-125
SULFATE SO_4^{--}	mg/L	75.0	2.2	74.8	97	75-125
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
CHLORIDE CL^-	mg/L	20.0	34.6	101	0	20	75-125
NITRATE AS N	mg/L	7.50	7.49	98	0	20	75-125
SULFATE SO_4^{--}	mg/L	75.0	74.3	96	1	25	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 314.0

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	32987
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W2719		
LCS Filename:	-	Date Analyzed:	050503	Time Analyzed:	11:00
LCSD Filename:	-	Date Analyzed:	-	Time Analyzed:	-

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
PERCHLORATE	µg/L	50	0	49.4	99	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:	32987
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W2719		
MS Filename:	-	Date Analyzed:	050503	Time Analyzed:	14:44
MSD Filename:	-	Date Analyzed:	050503	Time Analyzed:	15:02
MS Sample No:	**MW-23-5**	Sample Lab ID:	03-2987-6		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
PERCHLORATE	µg/L	100	0	108	108	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	100	112	112	4	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 160.1

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	32987
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W2666		
LCS Filename:	-	Date Analyzed:	050103	Time Analyzed:	16:45
LCSD Filename:	-	Date Analyzed:	050103	Time Analyzed:	16:45

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
SOLIDS, TOTAL DISSOLVED (TDS)	mg/L	400	0	402	101	88-108
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	LCSD Concentration	LCSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
SOLIDS, TOTAL DISSOLVED (TDS)	mg/L	400	410	103	2	20	88-108
# 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 160.1

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	32987
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W2666		
MS Filename:	-	Date Analyzed:	050103	Time Analyzed:	16:45
MSD Filename:	-	Date Analyzed:	050103	Time Analyzed:	16:45
MS Sample No:	**MW-23-5**	Sample Lab ID:	03-2987-6		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
SOLIDS, TOTAL DISSOLVED (TDS)	mg/L	400	263	664	100	80-119
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
SOLIDS, TOTAL DISSOLVED (TDS)	mg/L	400	670	102	2	20	80-119
# 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:	32987
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W2647		
LCS Filename:	-	Date Analyzed:	043003	Time Analyzed:	13:15
LCSD Filename:	-	Date Analyzed:	043003	Time Analyzed:	13:15

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
CHROMIUM (VI)	mg/L	0.25	0	0.264	106	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	0.254	102	4	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:	32987
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W2647		
MS Filename:	-	Date Analyzed:	043003	Time Analyzed:	13:15
MSD Filename:	-	Date Analyzed:	043003	Time Analyzed:	13:15
MS Sample No:	**MW-23-5**	Sample Lab ID:	03-2987-6		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
CHROMIUM (VI)	mg/L	0.25	0	0.239	96	78-115
# of Out-of-control					0	

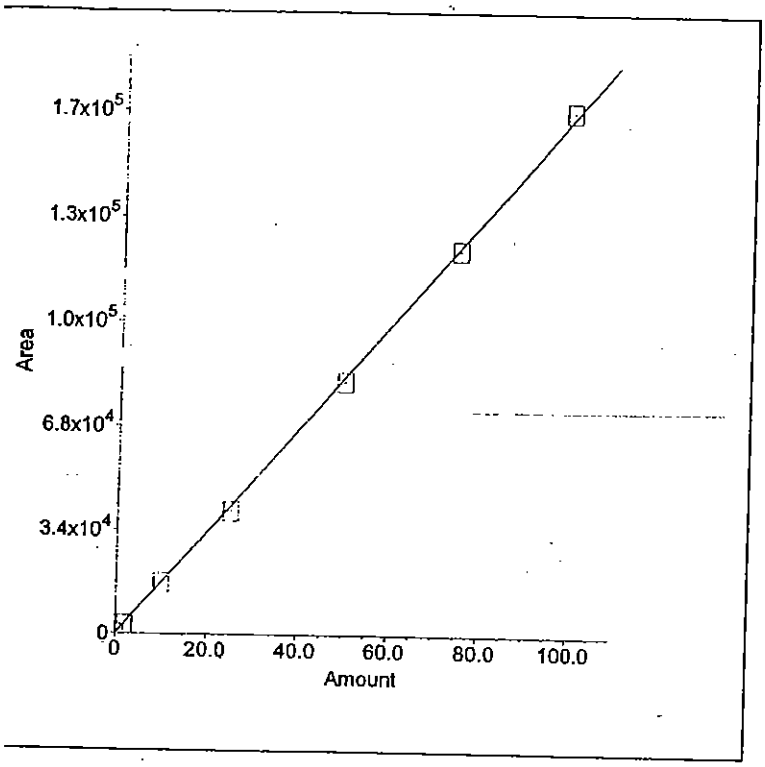
Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
CHROMIUM (VI)	mg/L	0.25	0.234	94	2	19	78-115
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

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

Comments: _____

1, Component:perchlorate
Standard:External Fit Type:Linear
Origin:Force Calibration:Area
r^2=0.999492
Amt=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

DIONEX METHOD PARAMETERS - E300-063.MET

Method Comment: APCL EPA 300 ANALYSIS DX-100
Column ID: Dionex AS4A-SC
Analyst ID: David

System Parameters

System Name: DX-100

Number of Detectors	1
Run Time (minutes)	10.00
Sampling Rate (seconds)	0.20
Detector 1 Type	COND
Detector 1 real time plot scale maximum (uS)	30.000
minimum	-3.000
Detector 1 Output Equivalent to 1 Volt (in uS)	30.00
Detector 1 ACI Analog Input Connection	DET1
Save Data File	Yes

Data File Name: C:\DX\DATA\03W1991\W1991Q01.D10

-- DETECTOR 1 PARAMETERS --

Report Options

Create ASCII Report File	No
Print Report	Yes
Print All Components	Yes
Print Components Found	No
Print Missing Components	No
Print All Peaks	No
Print Unknown Peaks	No
Print Chromatogram	Yes
Autoscale Chromatogram Maximum	No
Autoscale Chromatogram Minimum	No
Fill Peaks with Color	No
Draw Grid Lines on Chromatogram	No
Show Component Fraction Numbers	No
Label with Peak Number	No
Label with Retention Times on Chromatogram	Yes
Label with Component Name	Yes

Format File Name: C:\DX\METHOD\DEFAULT.PRF

Integration Parameters

Starting Peak Width (seconds)	10.0
Peak Threshold	2.000
Peak Area Reject	1000
Area Reject for Reference Peaks	1000

Data Events

Time	Description
0.13	Start peak detection
10.00	Stop peak detection

Calibration Parameters

Number Of Levels for Calibration	6
Force Calibration Curve Through Origin	No
Calibration Fit Type	Linear
Replace Or Average Calibrations	Replace
External or Internal Calibration	External
Calculate Unknowns by Area or Height	Area
Default Sample Volume	1.0
Default Dilution Factor	1.0
Default Response Factor for Unknown Peaks	0.0
Calibration Standard Volume	1.0
Internal Standard Amount in Samples	1.0
Amount Units	ppm

Component # 4 Bromide Retention Time 3.45
Reference Comp. Nitrate-N Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = 4.58974E-002
K1 = 4.83279E-006

Level	Amount	Area	Height
1	7.50000E-002	13830	1488
2	1.50000E+000	298206	30100
3	3.00000E+000	591234	61776
4	6.00000E+000	1219933	128845
5	7.50000E+000	1559887	166594
6	0.00000E+000	0	0

Component # 5 Nitrate-N Retention Time 3.87
Reference Comp. Nitrate-N Window Size 0.25 min.
Amount = K0 + K1*Area
K0 = 4.24689E-002
K1 = 8.05553E-007

Level	Amount	Area	Height
1	3.75000E-002	40157	3802
2	7.50000E-001	849179	77129
3	1.50000E+000	1713421	152776
4	3.00000E+000	3610927	313707
5	3.75000E+000	4688990	396441
6	0.00000E+000	0	0

Component # 6 Phosphate-P Retention Time 6.38
Reference Comp. Phosphate-P Window Size 0.60 min.
Amount = K0 + K1*Area
K0 = 8.68926E-002
K1 = 2.12227E-006

Level	Amount	Area	Height
1	7.50000E-002	24783	1450
2	1.50000E+000	642376	38579
3	3.00000E+000	1301126	79971
4	6.00000E+000	2756481	168994
5	7.50000E+000	3546397	217521
6	0.00000E+000	0	0

Component Table -- Last Modified: 17:42 on Fri, 21 Mar 2003

Component # 1 Fluoride Retention Time 1.32
Reference Comp. Fluoride Window Size 0.15 min.
Amount = K0 + K1*Area
K0 = -9.62851E-004
K1 = 1.37614E-006

Level	Amount	Area	Height
1	2.50000E-002	28534	2732
2	5.00000E-001	373164	44629
3	1.00000E+000	707646	82595
4	2.00000E+000	1435865	173007
5	2.50000E+000	1837162	220914
6	0.00000E+000	0	0

Component # 2 Chloride Retention Time 1.97
Reference Comp. Chloride Window Size 0.15 min.
Amount = K0 + K1*Area
K0 = 1.28188E-001
K1 = 1.95287E-006

Level	Amount	Area	Height
1	1.00000E-001	51206	7044
2	2.00000E+000	909455	126181
3	4.00000E+000	1856586	261681
4	8.00000E+000	3987563	585791
5	1.00000E+001	5142155	754321
6	0.00000E+000	0	0

Component # 3 Nitrite-N Retention Time 2.33
Reference Comp. Chloride Window Size 0.15 min.
Amount = K0 + K1*Area
K0 = 2.38085E-002
K1 = 9.76240E-007

Level	Amount	Area	Height
1	3.75000E-002	30884	3582
2	7.50000E-001	734006	79701
3	1.50000E+000	1468106	162005
4	3.00000E+000	3021523	336616
5	3.75000E+000	3856614	429219
6	0.00000E+000	0	0

Component # 7 Sulfate Retention Time 7.92
Reference Comp. Sulfate Window Size 0.90 min.
Amount = K0 + K1*Area
K0 = 5.32283E-001
K1 = 2.53252E-006

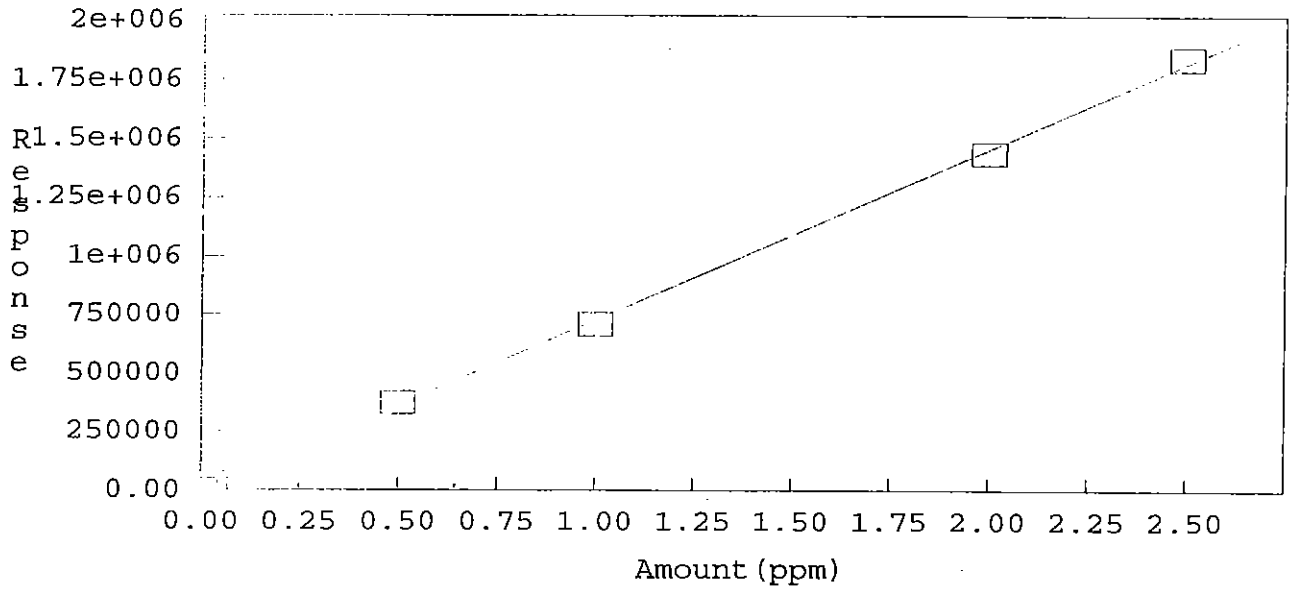
Level	Amount	Area	Height
1	3.76000E-001	129999	6524
2	7.50000E+000	2598757	138579
3	1.50000E+001	5330209	287851
4	3.00000E+001	11507107	615917
5	3.75000E+001	14859049	776426
6	0.00000E+000	0	0

Timed Events File: C:\DX\METHOD\W761CAL.TE

Step	Time	Description
Init		ACI Autosmp OFF
Init		ACI pump st ON
Init		ACI inject OFF
Init		ACI auto zer OFF
Init		ACI TTL 1 OFF
Init		ACI TTL 2 OFF
Init		ACI TTL 3 OFF
Init		ACI TTL 4 OFF
Init		ACI OFF
Init		ACI OFF
1	0.0	ACI Autosmp ON
1	0.0	ACI auto zer ON
2	2.5	ACI Autosmp OFF
2	2.5	ACI inject ON
2	2.5	ACI TTL 1 ON
2	2.5	Start Sampling

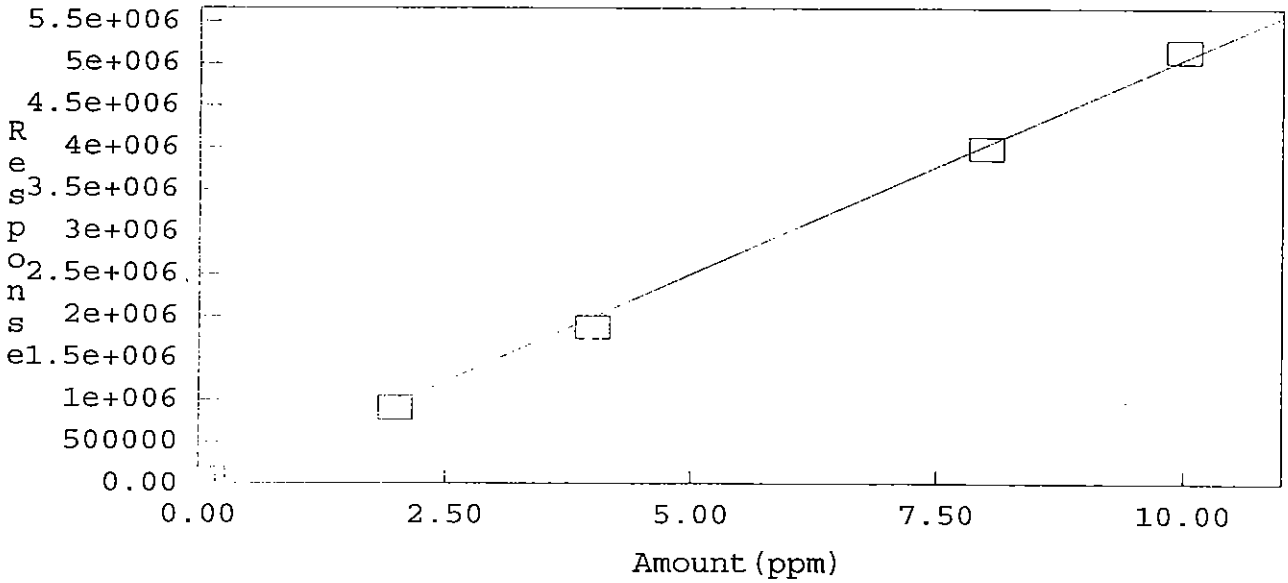
Method: E300-063.MET - Last Updated: 17:42 on Fri, 21 Mar 2003

Component: Fluoride
Fit Type: Linear
r^2 = 0.999552
Amt = Resp * 1.376e-006 + -0.000962
Resp = Amt * 7.267e+005 + 699.7
Standardization: External
Calibration: Area



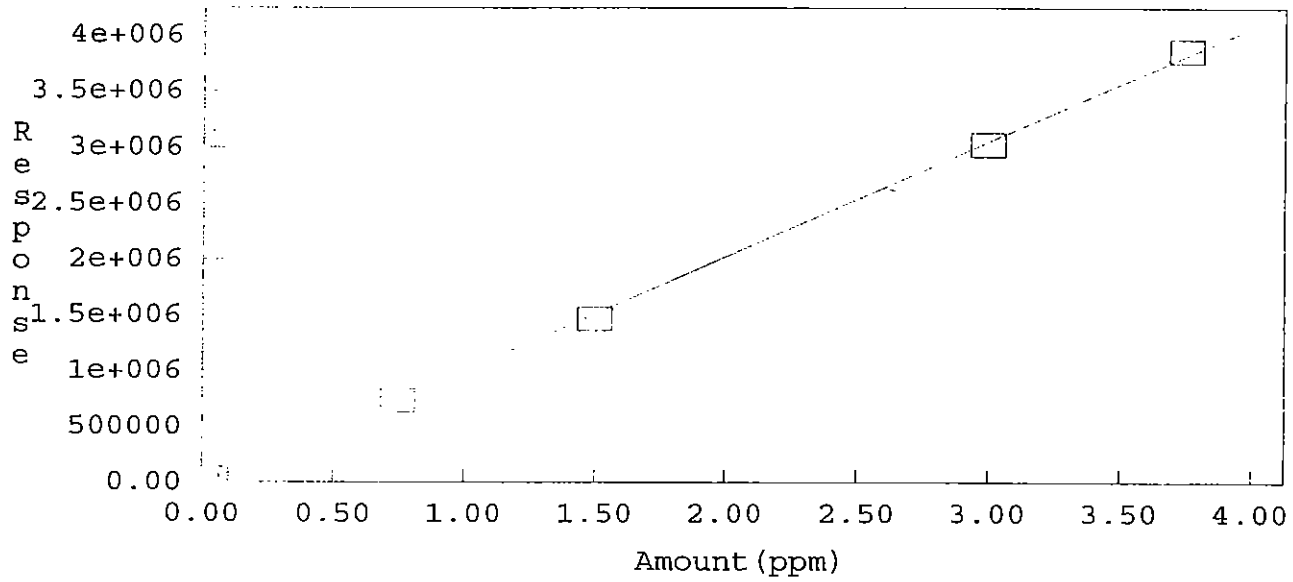
Method: C:\DX\METHOD\E300-063.MET

Component: Chloride
Fit Type: Linear
r^2 = 0.998409
Amt = Resp * 1.953e-006 + 0.1282
Resp = Amt * 5.121e+005 + -6.564e+00
Standardization: External
Calibration: Area



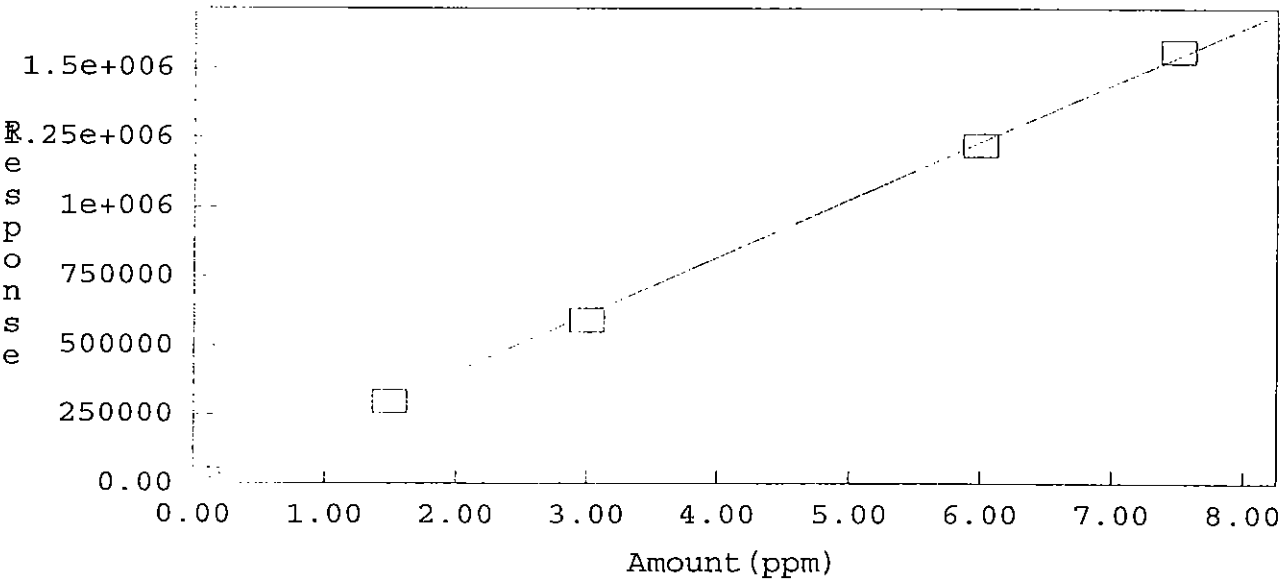
Method: C:\DX\METHOD\E300-063.MET

Component: Nitrite-N
Fit Type: Linear
r^2 = 0.999594
Amt = Resp * 9.762e-007 + 0.02381
Resp = Amt * 1.024e+006 + -2.439e+00
Standardization: External
Calibration: Area



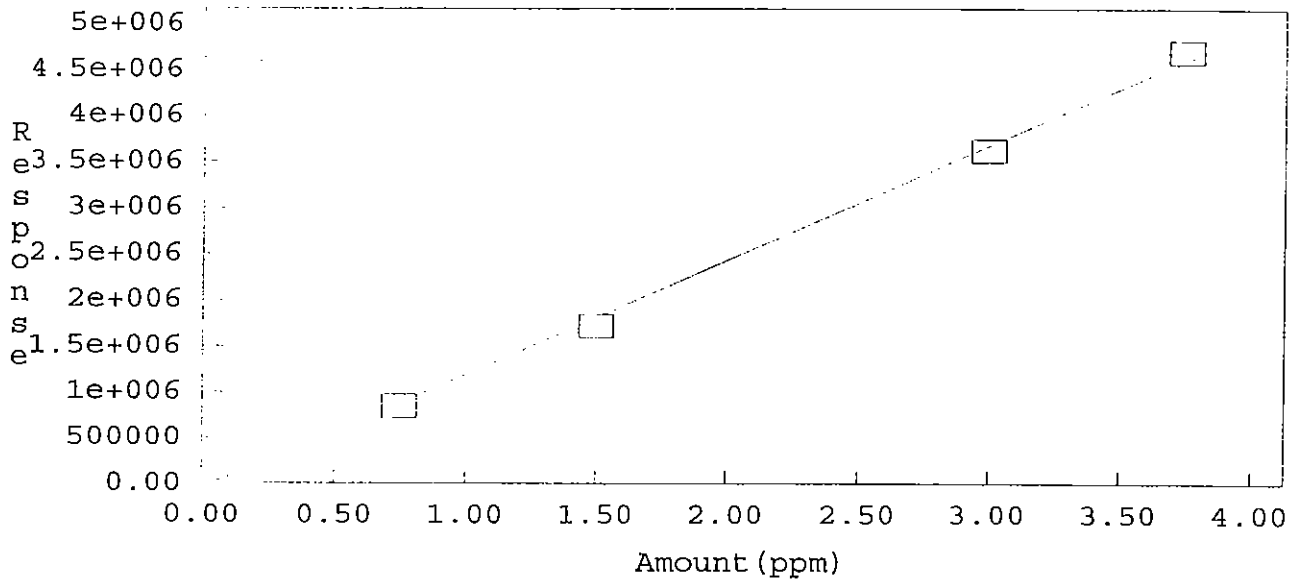
Method: C:\DX\METHOD\E300-063.MET

Component: Bromide
Fit Type: Linear
r^2 = 0.999518
Amt = Resp * 4.833e-006 + 0.0459
Resp = Amt * 2.069e+005 + -9497
Standardization: External
Calibration: Area



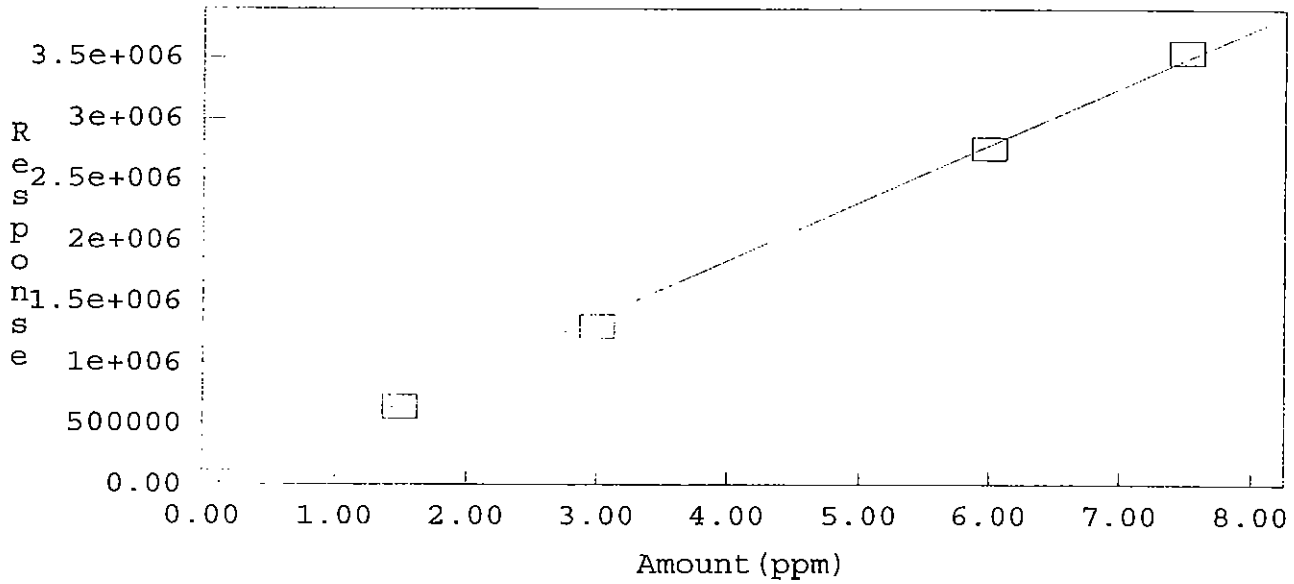
Method: C:\DX\METHOD\E300-063.MET

Component: Nitrate-N
Fit Type: Linear
r^2 = 0.998618
Amt = Resp * 8.056e-007 + 0.04247
Resp = Amt * 1.241e+006 + -5.272e+00
Standardization: External
Calibration: Area



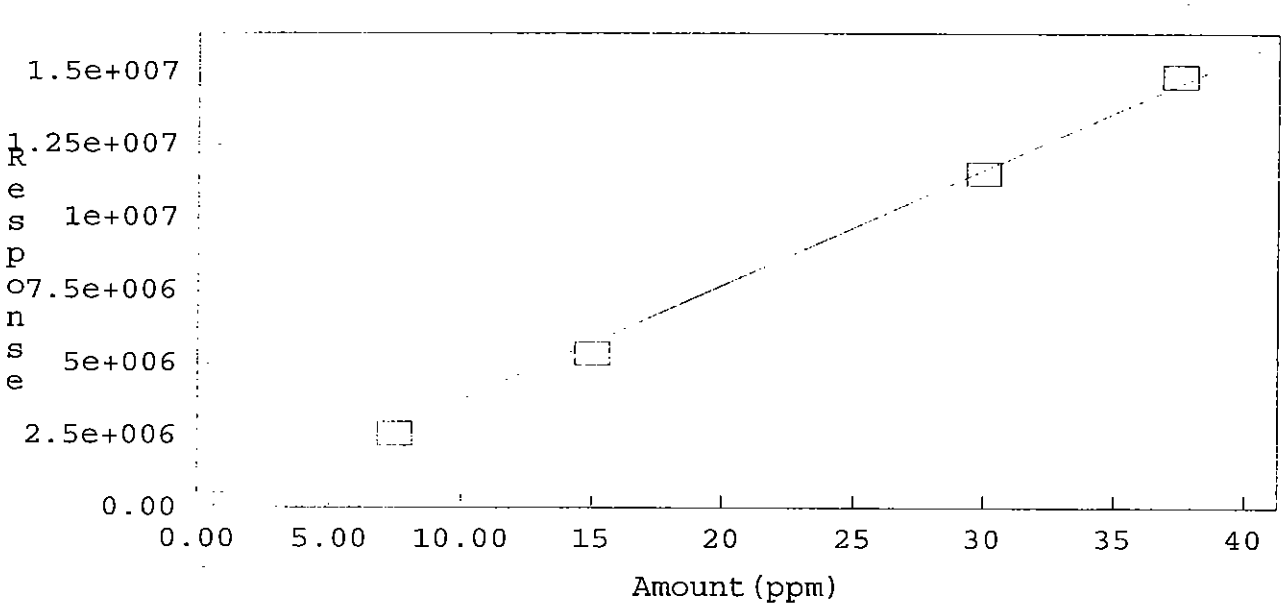
Method: C:\DX\METHOD\E300-063.MET

Component: Phosphate-P
Fit Type: Linear
r^2 = 0.998898
Amt = Resp * 2.122e-006 + 0.08689
Resp = Amt * 4.712e+005 + -4.094e+00
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\E300-063.MET

Component: Sulfate
Fit Type: Linear
r^2 = 0.998245
Amt = Resp * 2.533e-006 + 0.5323
Resp = Amt * 3.949e+005 + -2.102e+00
Standardization: External
Calibration: Area



6A

INITIAL CALIBRATION DATA

Lab Name: Applied P & Ch Lab Contract: 03-2987

Analysis: Chromium (VI) Calibration Date: 1/29/03

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

Wet Chemistry QC Report B
Duplicate Results

Matrix: Water

APCL Service ID: 03-2964

Analysis	Batch ID	Analysis Date	Sample Name	Unit	Result	Duplicate Result	RPD %	RPD Control limit
pH	03W2651	4/30/03	MW-23-1	pH unit	7.00	7.03	0	20
Bicarbonate	03W2667	5/1/03	03-2999-01	mg/L	242.7	245.3	1	20
Carbonate	03W2667	5/1/03	03-2999-01	mg-$CaCO_3$/L	ND	ND	NC	20

Note: N/A = Not applicable; NR: Not requested; NC= Not Calculated; ND: Not detected.

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: 32987

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	Chloride Cl^-	300.0	03W2658	mg/L	4.0	4.02	101	1	√	90-110	05/01/2003
	NITRATE as N-NO_3^-, BY	300.0	03W2658	mg/L	1.5	1.51	101	1	√	90-110	05/01/2003
	SULFATE SO_4^{--}, BY I	300.0	03W2658	mg/L	15	15.1	101	1	√	90-110	05/01/2003
	Chloride Cl^-	300.0	03W2658	mg/L	4.0	3.95	99	-1	√	90-110	05/01/2003
	NITRATE as N-NO_3^-, BY	300.0	03W2658	mg/L	1.5	1.51	101	1	√	90-110	05/01/2003
	SULFATE SO_4^{--}, BY I	300.0	03W2658	mg/L	15	15.0	100	0	√	90-110	05/01/2003
	Chloride Cl^-	300.0	03W2658	mg/L	4.0	3.89	97	-3	√	90-110	05/01/2003
	NITRATE as N-NO_3^-, BY	300.0	03W2658	mg/L	1.5	1.51	101	1	√	90-110	05/01/2003
	SULFATE SO_4^{--}, BY I	300.0	03W2658	mg/L	15	14.9	99	-1	√	90-110	05/01/2003
2	Perchlorate	314.0	03W2719	µg/L	50	50.6	101	1	√	90-110	05/05/2003
	Perchlorate	314.0	03W2719	µg/L	50	50.4	101	1	√	90-110	05/05/2003
	Perchlorate	314.0	03W2719	µg/L	50	50.9	102	2	√	90-110	05/05/2003
3	Chromium (VI)	7196	03W2647	mg/L	0.25	0.252	101	1	√	90-110	04/30/2003
	Chromium (VI)	7196	03W2647	mg/L	0.25	0.246	98	-2	√	90-110	04/30/2003

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

pH (150.1/9045B) Worksheet

Temperature compensation must be performed by the instrument automatically. Analyst DL SOP: G-44

Batch # 03W2641	Analysis Date: 4/30/03	Batch # 03W2654	Analysis Date: 4/30/03
Starting Time: 16:15	Ending Time: :	Starting Time: 18:14	Ending Time: :
Matrix ☒ Aqueous ☐ Soil		Matrix ☐ Aqueous ☒ Soil	

Standard	4.00	7.00	10.00
Lot #		2120	030649-24
Temperature °C		24.2	24.2
pH Reading		7.01	10.02
T-corrected pH		7.00	10.01
Control Limit	±0.05 pH unit		

Standard	4.00	7.00	10.00
Lot #		2120	030649-24
Temperature °C		24.0	24.0
pH Reading		7.01	10.00
T-corrected pH		7.00	10.01
Control Limit	±0.05 pH unit		

#	Sample ID	Pre-treat	pH	Note
MB	TM16		6.85	
1	2987-1		6.48	
2	-2		7.00	
3	-3		7.20	
4	-4		7.88	
5	-5		8.28	
6	-6		9.44	
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
Dup.	2987-7		7.03	

#	Sample ID	Pre-treat	pH	Note
MB	05174A		6.82	1:1
1	2930-1		7.82	
2	-2		8.77	
3	-3		9.12	
4	-4		8.82	
5	-5		8.47	
6	-6		8.90	
7	-7		8.70	
8	-8		9.27	
9	-9		9.30	
10	-10		8.96	
11	-11		9.34	
12	-12		9.63	
13	-13		9.66	
14	-14		9.21	
15				
16				
17				
18				
19				
20				
Dup.	2930-1		7.93	1:1

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

Alkalinity/OH/CO_3/HCO_3 (310.1/SM2320B) Worksheet

Batch # 03W766 Matrix: W Titrant H_2SO_4 Lot # W7900 Concentration (C) 0.02 N; Test Date: 1/1/03 Analyst: DZ SOP: G-51

#	Sample ID	Dilution $V_f/V_i=f_1$	Smpl Amnt V, mL	H_2SO_4 (mL) by Phnln S_A	E_A	A	H_2SO_4 (mL) by MR-BCG S_B	E_B	B	Phnln-Alk., P	Tot. Alk., T (in unit of mg$CaCO_3$/L)	OH^-	CO_3^{2-}	HCO_3^-	Note & Anomaly
1	MB: TWT	/ =	100			0			0		0	0	0	0	
2	LCS	/ =	100						7.80		99.6				
3	LCSD	/ =	100						7.95		101.6				
4	2999-1	/ =	50.0			0			9.50		242.7	0	0	242.7	
5	-2	/ =	50.0			0			12.10		309.2	0	0	309.2	
6	-3	/ =	50.0			0			9.75		249.1	0	0	249.1	
7	-4	/ =	50.0			0			0		0	0	0	0	
8	-5	/ =	50.0			0			0		0	0	0	0	
9	2987-1	/ =	50.0			0			0		0	0	0	0	
10	-2	/ =	50.0			0			9.50		242.7	0	0	242.7	
11	-3	/ =	50.0			0			8.40		214.6	0	0	214.6	
12	-4	/ =	50.0			0			5.70		145.6	0	0	145.6	
13	-5	/ =	50.0			0.10			5.00	2.6	130.3	0	5.2	125.1	
14	-6	/ =	50.0			1.80			5.55	46.0	187.8	0	92	95.8	
15	-7	/ =													
16	2964-1	/ =	50.0			0.70			5.15	17.9	149.5	0	35.8	113.7	
17	-6	/ =	50.0			0.41			4.41	11.5	125.2	0	23.0	102.2	
18	-7	/ =	50.0			0			6.50		166.1	0	0	166.1	
19		/ =													
20		/ =													
Dup.	2999-1	/ =	50.0			0			9.60		245.3	0	0	245.3	

Titration Results	OH^- ($CaCO_3$ mg/L)	CO_3^{2-} ($CaCO_3$ mg/L)	HCO_3^- ($CaCO_3$ mg/L)
P=0	0	0	T
P<T/2	0	2P	T-2P
P=T/2	0	2P	0
P>T/2	2P-T	2(T-P)	0
P = T	T	0	0

Calculation:

$A=S_A-E_A$

$B=S_B-E_B$

$P=50{,}000\ f_1\ A\ C\ /V$

$T=50{,}000\ f_1\ (A+B)\ C\ /V$

APCL Form 5-101, Nov. 29, 1999 Ver 3.2

Using blue pen. Correcting by red pen.

File: [CUST.DOC.WET]ALK.TEX

Root-File: [CUST.DOC.WET]ALK_ROOT.TEX

1-Page-File: [CUST.DOC.WET]ALK1.TEX

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

Solid Analysis (160.1, 160.2, 160.3) Worksheet

Batch # 03W2666 Matrix W Method: 160.1 Balance No. _____ Date: 5/1/03 Analyst: DL

EPA 160.1 TDS – Total Dissolved (filterable) Solids — Dry for 1hr. or more at 180 °C

EPA 160.2 TSS – Total Suspended (nonfilterable) Soilds — Dry for 1hr. or more at 103-105 °C

EPA 160.3 TS – Total Solids — Dry for 1hr. or more at 103-105 °C

Other method (specify):

Result= $10^6 \times \Delta W \times f_1 / V$ SOP: G-81

#	Analysis Type	Sample ID (STD Lot #)	Treatment Ratio $V_f/X=f_1$	Volume V, mL	W_1 g	W_2 1st, g	W_2 2nd, g	$\Delta W = W_2 - W_1$, g	Results (ppm)	Note
1	Blank	T116	/ =	100	112.3025	112.3027	112.3026	0.0001	1	K
2	LCS	T116	/ =	100	115.2350	115.2751	115.2752	0.0402	402	J
3	Sample-1	2946-1	/ =	100	116.5582	116.5922	116.5921	0.0339	339	101
4	MS on S-1	2987-6	/ =	100	114.1420	114.2085	114.2084	0.0664	664	C3
5	MSD on S-1	↓ -6	/ =	100	116.9510	117.0182	117.0180	0.0670	670	W
6	Sample-2	2987-1	/ =	100	111.2815	111.2820	111.2821	0.0006	6	5
7	Sample-3	-2	/ =	100	115.8747	115.9510	115.9512	0.0765	765	CK
8	Sample-4	-3	/ =	100	114.3735	114.4342	114.4341	0.0606	606	A
9	Sample-5	-4	/ =	100	121.3225	121.3508	121.3509	0.0284	284	I
10	Sample-6	-5	/ =	100	105.3168	105.3389	105.3388	0.022	220	12
11	Sample-7	↓ -6	/ =	100	103.9472	103.9736	103.9735	0.0263	263	14
12	Sample-8	2964-1	/ =	100	111.7941	111.8199	111.8198	0.0257	257	R
13	Sample-9	-2	/ =	100	107.7155	107.7162	107.7163	0.0008	8	O
14	Sample-10	↓ -3	/ =	100	115.1335	115.1702	115.1700	0.0365	365	10
15	LCSD	T116	/ =	100	105.3654	105.4063	105.4064	0.0410	410	W1
16	Sample-11	2964-4	/ =	100	99.0815	99.1073	99.1072	0.0257	257	Y2
17	Sample-12	-5	/ =	100	103.5332	103.5549	103.5548	0.0216	216	76
18	Sample-13	-6	/ =	100	116.6557	116.6727	116.6726	0.0175	175	Z5
19	Sample-14	↓ -7	/ =	100	105.9035	105.9263	105.9262	0.0227	227	19
20	Sample-15	2987-1	/ =		~~115.1112~~					~~G~~
21	Sample-16	-2	/ =							
22	Sample-17	-3	/ =							
23	Sample-18	-4	/ =							
24	Sample-19	↓ -5	/ =							
25	Sample-20		/ =							
26	Mtx Dup.		/ =							

5/1/03

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- 7618	× / = 402 ppm	%	85-115 %/80-120 %
MSD	W- ↓	× / = ↓ ppm	%	.. ..
LCS	W- 7619	× / = ↓ ppm	%	90-110 %/85-115 %
LCSD	W- ↓	× / = ↓ ppm	%	.. ..

PQL/MDL (in ppm)	
PQL(w)	10
PQL(s)	50
MDL(w)	4
MDL(s)	20

APCL form 5-127, March 7, 1995. Ver. 3.0 No pencil. Use blue pen for record. Use red pen for correction.
FILE: [CUST.DOC.WET]TDS.TEX ROOT-FILE: TDS_ROOT.TEX CONTROL-FILE: TDS.000 1-Page file: TDS1.TEX
Control limits are subjected to change. The updated values are given in the latest version of APCL Technical Handbook Vol. 2

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

Balance Daily Calibration Worksheet

Weight Set S/N: 12006

Calib. Date	Lab Balance: Balance #	1 g ±0.05g	10 g ±0.1g	200 g ±0.5g	Note (C)	Digital Balance: Balance #	1 g ±0.02g	10 g ±0.05g	200 g ±0.10g	Note (D) (C) (AR)	Analytical Balance: Balance #	1 g ±0.0002g	10 g ±0.0005g	200 g ±0.0010g	Note (D) (C) (AR)	Calib. by
4/25/03	A-01	use	in	use	✓	B-01	1.00	10.00	200.00	✓✓✓	C-01	1.0000	10.0001	200.0001	✓✓✓	✓ 4/25/03
	~~A-02~~					B-05	9.99	9.99	199.99	✓✓✓	C-02	1.0000	10.0000	200.0001	✓✓✓	
	A-03	1.00	10.00	200.01	✓	B-06	1.00	10.00	200.01	✓✓✓	C-					
	A-04					B-07	1.00	9.99	199.99	✓✓✓	C-					
	A-		4/25/03			B-			4/25/03		C-		4/25/03			
	A-					B-		4/25/03			C-					
4/28/03	A-01	use	in	use	✓	B-01	1.00	10.00	200.00	✓✓✓	C-01	1.0000	10.0001	200.0001	✓✓✓	✓
	~~A-02~~					B-05	1.00	9.99	199.99	✓✓✓	C-02	1.0000	10.0000	200.0000	✓✓✓	
	A-03	1.00	9.99	200.00	✓	B-06	1.00	10.00	200.00	✓✓✓	C-					
	A-04					B07	1.00	9.99	199.99	✓✓✓	C-					
	A-		4/28/03			B-			4/28/03		C-		4/28/03			
	A-					B-		4/28/03			C-					
4/29/03	A-01	not	in	use	✓	B-01	1.00	10.01	200.00	✓✓✓	C-01	1.0000	10.0001	200.0001	✓✓✓	✓
	~~A-02~~					B-05	1.00	9.99	199.99	✓✓✓	C-02	1.0000	10.0000	200.0000	✓✓✓	
	A-03	1.00	9.99	200.00	✓	B-06	1.00	10.00	200.00	✓✓✓	C-					
	A-04					B-07	100	9.99	199.99	✓✓✓	C-					
	A-		4/29/03			B-			4/28/03		C-		4/29/03			
	A-					B-		4/28/03			C-					
4/30/03	A-01	not	in	use	✓	B-01	1.00	10.01	200.00	✓✓✓	C-01	1.0000	10.0001	200.0001	✓✓✓	✓
	~~A-02~~					B-05	1.00	9.99	199.99	✓✓✓	C-02	1.0000	10.0000	200.0000	✓✓✓	
	A-03	1.00	9.99	200.00	✓	B-06	1.00	10.00	200.00	✓✓✓	C-					
	A-04					B-07	1.00	9.99	199.99	✓✓✓	C-					
	A-		4/30/03			B-			4/30/03		C-		4/30/03			
	A-					B-		4/30/03			C-					

Notation: (C) – Cleanliness; (D) – Display; (AR) – Auto Rezeroing.

Applied P & Ch Laboratory
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Balance Daily Calibration Worksheet

6219

Weight Set S/N: 12006

Calib. Date	Lab Balance: Balance #	1 g ±0.05g	10 g ±0.1g	200 g ±0.5g	Note (C)	Digital Balance: Balance #	1 g ±0.02g	10 g ±0.05g	200 g ±0.10g	Note (D) (C) (AR)	Analytical Balance: Balance #	1 g ±0.0002g	10 g ±0.0005g	200 g ±0.0010g	Note (D) (C) (AR)	Calib. by
1/1/03	A-01	not	in	use	✓	B-01	1.00	10.01	200.00	✓ ✓ ✓	C-01	1.0000	10.0000	200.0000	✓ ✓ ✓	
	~~A-02~~					B-02	1.00	10.00	200.00	✓ ✓ ✓	C-02	1.0000	9.9999	200.0000	✓ ✓ ✓	
	A-03	1.00	9.99	200.00	✓	B-06	1.00	10.01	200.00	✓ ✓ ✓	C-					
	A-04					B-07	1.00	9.99	199.99	✓ ✓ ✓	C-					1/2
	A-					B-			1/1/03		C-		1/1/03			
	A-	1/1/03				B-		1/1/03			C-					
1/2/03	A-01	not	in	use	✓	B-01	1.00	10.00	200.00	✓ ✓ ✓	C-01	1.0000	10.0001	200.0000	✓ ✓ ✓	
	~~A-02~~					B-05	1.00	10.01	200.00	✓ ✓ ✓	C-02	1.0000	9.9999	200.0001	✓ ✓ ✓	
	A-03	1.00	9.99	200.00	✓	B-06	1.00	9.99	200.00	✓ ✓ ✓	C-					
	A-04					B-07	1.00	10.00	200.00	✓ ✓ ✓	C-					1/2
	A-		1/2/03			B-					C-		1/2/03			
	A-					B-		1/2/03			C-					
1/3/03	A-01	not in use			✓	B-01	1.00	10.00	200.00	✓ ✓ ✓	C-01	1.0000	10.0001	200.0001	✓ ✓ ✓	
	~~A-02~~					B-05	1.00	10.01	200.00	✓ ✓ ✓	C-02	1.0001	10.0000	200.0001	✓ ✓ ✓	
	A-03	1.00	9.99	200.00	✓	B-06	1.00	9.99	200.00	✓ ✓ ✓	C-					
	A-04					B-07	1.00	10.00	200.00	✓ ✓ ✓	C-					1/2
	A-		1/3/03			B-					C-		1/3/03			
	A-					B-		1/3/03			C-					
1/6/03	A-01	not	in	use	✓	B-01	1.00	10.00	200.00	✓ ✓ ✓	C-01	1.0000	10.0000	200.0000	✓ ✓ ✓	
	~~A-02~~					B-05	1.00	10.01	200.01	✓ ✓ ✓	C-02	1.0001	10.0001	200.0001	✓ ✓ ✓	
	A-03	1.00	9.99	200.00	✓	B-06	1.00	9.99	200.00	✓ ✓ ✓	C-					
	A-04					B-07	1.00	10.00	200.00	✓ ✓ ✓	C-					1/2
	A-		1/6/03			B-					C-		1/6/03			
	A-					B-		1/6/03			C-					

Notation: (C) – Cleanliness; (D) – Display; (AR) – Auto Rezeroing.

Applied P & Ch Laboratory
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Chromium (VI) (7196) Worksheet

Batch # 03W2647 Matrix: W [Holding Time: 24 hours!!] Test Date: 4/30/03 Analyst:

Lot #: Reagent Water _____ Diphenylcazide solution _____ Test Time: 13:15 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.= 0.9997 (≥ 0.995)	
STD-4	W-	× / = mg/L			RSD= % (≤ 15%)	
STD-5	W-	× / = mg/L			Ref. page	
STD-6	W-	× / = mg/L			A = 0.000 + 0.836 C	

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- 7853	Expected Conc.:	×	/ = 0.25 mg/L	0.211	0.252 mg/L	REC. %	90-110 %
Method Blank	Bl. Lot: T1116		/X_0 = 1	95.0/ =	0.000	mg/L	0.000 ppm	
LCS1	Bl. Lot: "		/X_0 =	95.0/ =	0.221	mg/L	0.264 ppm	
Sample-1 EB	2987-1		/X_0 =	95.0/ =	0.002	mg/L	0.002 ppm	
MS on S-1 5	6		/X_0 =	95.0/ =	0.200	mg/L	0.239 ppm	
MSD on S-1 5	6		/X_0 =	95.0/ =	0.196	mg/L	0.234 ppm	
Sample 2 1	2		/X_0 =	95.0/ =	0.003	mg/L	0.003 ppm	
Sample 3 2	3		/X_0 =	95.0/ =	0.001	mg/L	0.001 ppm	
Sample 4 3	4		/X_0 =	95.0/ =	0.001	mg/L	0.001 ppm	
Sample 5 4	5		/X_0 =	95.0/ =	0.000	mg/L	0.000 ppm	
Sample 6 5	6		/X_0 = ✓	95.0/ =	0.000	mg/L	0.001 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: T1116		/X_0 = 1	95.0/ =	0.212	mg/L	0.254 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. Spiking 0.25 mg/L			/X_0 =	95.0/ =	0.206	0.246 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- 7853	× / = 0.25 ppm	%	80-120 %/80-120 %
MSD	W- "	× / = ppm	%	.. ..
LCS	W- 7759	× / = 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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Chromium (VI) (7196) Worksheet

Batch # 03W1295 Matrix: W [Holding Time: 24 hours!!] Test Date: 1/24/03 Analyst: BN

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	× / =0.000 mg/L	0.000		Least Square [RF]=	Cal. Code:
STD-2	W-	× / =0.025 mg/L	0.006		Average $\bar{RF}$=	A=0.000+0.836C
STD-3	W-	× / =0.050 mg/L	0.041		C.C.=0.9917 (≥ 0.995)	
STD-4	W-	× / =0.125 mg/L	0.109		RSD= % (≤ 15%)	
STD-5	W-	× / =0.250 mg/L	0.214		Ref. page	
STD-6	W- ✓	× / =0.500 mg/L	0.415		~~A=0.003+Bn 1/24/03~~	

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-7076.	Expected Conc.: ×		/ =0.25 mg/L	0.246	0.258 mg/L	REC. 103 %	90-110 %
Method Blank	Bl. Lot: T1115		/X_0 = 1	95.0/ =	0.000	mg/L	0.00 ppm	
LCS1	Bl. Lot: "		/X_0 =	95.0/ =	0.209	mg/L	0.244 ppm	
Sample-1	1369-1		/X_0 =	95.0/ =	0.000	mg/L	0.00 ppm	
MS on S-1	6		/X_0 =	95.0/ =	0.223	mg/L	0.266 ppm	
MSD on S-1	6 2		/X_0 =	95.0/ =	0.230	mg/L	0.275 ppm	
Sample 2	2		/X_0 =	95.0/ =	0.004	mg/L	0.005 ppm	
Sample 3	3		/X_0 =	95.0/ =	0.002	mg/L	0.002 ppm	
Sample 4	4		/X_0 =	95.0/ =	0.001	mg/L	0.001 ppm	
Sample 5	5		/X_0 =	95.0/ =	0.002	mg/L	0.002 ppm	
Sample 6	6		/X_0 = ✓	95.0/ =	0.004	mg/L	0.005 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: T1115		/X_0 = 1	95.0/ =	0.210	mg/L	0.251 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 = 2	95.0/ 102 =		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/ =	0.204	mg/L	0.248 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- 7076	× / =0.25 ppm	%	80-120 %/80-120 %
MSD	W- ✓	× / = ppm	%	.. ..
LCS	W- 7191	× / = 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

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
		Sample		aastopcl.met		1	1

Line	Weight	Int. Std.	Comment
1	1	1	
2	1	1	
3	1	1	
4	1	1	
5	1	1	
6	1	1	
7	1	1	
8	1	1	
9	1	1	
10	1	1	
11	1	1	
12	1	1	
13	1	1	
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15	1	1	
16	1	1	
17	1	1	
18	1	1	
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61	1	1	
62	1	1	
63	1	1	
64	1	1	
65	1	1	
66	1	1	
67	1	1	
68	1	1	

efault Method Path: C:\PEAKNET\METHOD
efault Data Path: C:\DATA\03W1286K
omment:
emark:

ondition Information:

Column

Separator column: AS16 4mm

Guard column: AS16 4mm

Eluent : NaOH 38mM

Flow rate: 1.2mL/min

Suppressor: ASRS-ULTRA 4mm

Detector: CD20

Analyst: Charles Wu and Wei Wang

Date: 03 / 12 / 2003

nstrument: IC-K DX-500 Dionex

ıe	Sample	Sample Type	Level	Method	Data File	Volume	Dilution
	##03w2719kw ipc 25ppb w7759	Sample		e314-011.met	c:\data\03w2719k\w2719k ipc 25ppb	1	1
	ccv 50ppb w7827e	Sample		e314-011.met	c:\data\03w2719k\w2719k q01	1	1
	ccb	Sample		e314-011.met	c:\data\03w2719k\w2719k ccb01	1	1
	lcs 25ppb w7827d	Sample		e314-011.met	c:\data\03w2719k\w2719k l01	1	1
	LCS 18PPB W7685D	Sample		e314-011.met	c:\data\03w2719k\w2719k j01	1	1
	ICCS 4ppb w7827b	Sample		e314-011.met	c:\data\03w2719k\w2719k iccs 4ppb	1	1
	mb	Sample		e314-011.met	c:\data\03w2719k\w2719k k01	1	1
	2964-06 F=1	Sample		e314-011.met	c:\data\03w2719k\2964-06	1	1
	2964-07 f=1	Sample		e314-011.met	c:\data\03w2719k\2964-07	1	1
	3000-04 F=1	Sample		e314-011.met	c:\data\03w2719k\3000-04	1	1
	2987-01 F=1	Sample		e314-011.met	c:\data\03w2719k\2987-01	1	1
	2987-06 f=1	Sample		e314-011.met	c:\data\03w2719k\2987-06	1	1
	ccv 50ppb w7827e	Sample		e314-011.met	c:\data\03w2719k\w2719k q02	1	1
	ccb	Sample		e314-011.met	c:\data\03w2719k\w2719k k02	1	1
	2987-02 f=1	Sample		e314-011.met	c:\data\03w2719k\2987-02	1	1
	2987-06 ms 50ppb f=1	Sample		e314-011.met	c:\data\03w2719k\w2719k m01	1	1
	2987-06 msd 50ppb f=1	Sample		e314-011.met	c:\data\03w2719k\w2719k n01	1	1
	2987-03 F=1	Sample		e314-011.met	c:\data\03w2719k\2987-03	1	1
	2987-04 F=1	Sample		e314-011.met	c:\data\03w2719k\2987-04	1	1
	2987-05 F=1	Sample		e314-011.met	c:\data\03w2719k\2987-05	1	1
	3015-01 F=1	Sample		e314-011.met	c:\data\03w2719k\3015-01	1	1
	3015-02 F=1	Sample		e314-011.met	c:\data\03w2719k\3015-02	1	1
	3015-03 F=1	Sample		e314-011.met	c:\data\03w2719k\3015-03	1	1
	ccv 50ppb w7827e	Sample		e314-011.met	c:\data\03w2719k\w2719k q03	1	1
	CCB	Sample		e314-011.met	c:\data\03w2719k\w2719k k03	1	1
	3015-04 F=1	Sample		e314-011.met	c:\data\03w2719k\3015-04	1	1
	3015-05 F=1	Sample		e314-011.met	c:\data\03w2719k\3015-05	1	1
	3015-06 F=1	Sample		e314-011.met	c:\data\03w2719k\3015-06	1	1
	3015-07 f=1	Sample		e314-011.met	c:\data\03w2719k\3015-07	1	1
	ccv 50ppb w7827e	Sample		e314-011.met	c:\data\03w2719k\w2719k q04	1	1
		Sample		aastopcl.met		1	1

Analyst Wei Wang

Date 5/5/03

Instrument IC-K

6224

ıe	Weight	Int. Std.	Comment
	1	1	
	1	1	
	1	1	
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ıfault Method Path: C:\PEAKNET\METHOD
ıfault Data Path: C:\DATA\03W2531K
ımment:

DIONEX SCHEDULE - C:\DX\SCHEDULE\03W2658.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	##03W2658, W CCVW77	..\E300-063	..\W2658Q01.D01	1	1	1
2	MB RW1409	..\E300-063	..\W2658K01.D02	1	1	1
3	LCS W7768-100X	..\E300-063	..\W2658L01.D03	1	1	1
4	LCSD W7768-100X	..\E300-063	..\W2658J01.D04	1	1	1
5	2987-2 F=20	..\E300-063	..\2987-201.D05	1	20	1
6	2987-3 F=10	..\E300-063	..\2987-301.D06	1	10	1
7	2987-4 F=2	..\E300-063	..\2987-401.D07	1	2	1
8	2987-5 F=2	..\E300-063	..\2987-501.D08	1	2	1
9	2987-6 F=2.5	..\E300-063	..\2987-601.D09	1	2.5	1
10	2987-4 F=4	..\E300-063	..\2987-401.D10	1	4	1
11	2987-1 F=1.25	..\E300-063	..\2987-101.D11	1	1.25	1
12	CCV2W7767-100X	..\E300-063	..\W2658Q01.D12	1	1	1
13	MB RW1409	..\E300-063	..\W2658K01.D13	1	1	1
14	$2987-6 MS F=5	..\E300-063	..\W2658M01.D14	1	5	1
15	$2987-6 MSD F=5	..\E300-063	..\W2658N01.D15	1	5	1
16	2999-1 F=25	..\E300-063	..\2999-101.D16	1	25	1
17	2999-2 F=25	..\E300-063	..\2999-201.D17	1	25	1
18	2999-3 F=25	..\E300-063	..\2999-301.D18	1	25	1
19	2999-4 F=1.25	..\E300-063	..\2999-401.D19	1	1.25	1
20	2999-5 F=1.25	..\E300-063	..\2999-501.D20	1	1.25	1
21	CCV3W7767-100X	..\E300-063	..\W2658Q01.D21	1	1	1
22	MB RW1409	..\E300-063	..\W2658K01.D22	1	1	1
23	3015-1 F=4	..\E300-063	..\3015-101.D23	1	4	1
24	3015-3 F=4	..\E300-063	..\3015-301.D24	1	4	1
25	3015-4 F=4	..\E300-063	..\3015-401.D25	1	4	1
26	3015-5 F=8	..\E300-063	..\3015-501.D26	1	8	1
27	3015-6 F=2	..\E300-063	..\3015-601.D27	1	2	1
28	3015-7 F=2	..\E300-063	..\3015-701.D28	1	2	1
29	3015-2 F=1.25	..\E300-063	..\3015-201.D29	1	1.25	1
30	CCV4W7767-100X	..\E300-063	..\W2658Q01.D30	1	1	1
31		..\STOP.MET		1	1	1

Comment:
LCS/LCSD LOT # W7768
MS/MSD LOT # W7767
ELUENT LOT # W7868
ANALYTICAL METHOD 9056/E300 MATRIX W

Analyst DL
Date 1/1/03
Instrument I

DIONEX SCHEDULE - C:\DX\SCHEDULE\E300-063.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	autocal1r	..\E300-063	..\W7767Q01.D01	1	1	1
2	autocal2r	..\E300-063	..\W7767Q01.D02	1	1	1
3	autocal3r	..\E300-063	..\W7767Q01.D03	1	1	1
4	autocal4r	..\E300-063	..\W7767Q01.D04	1	1	1
5	autocal5r	..\E300-063	..\W7767Q01.D05	1	1	1
6	autocal6r	..\E300-063	..\W7767Q01.D06	1	1	1
7	icv-w7768-100X	..\E300-063	..\W7768Q01.D07	1	1	1
8	icb	..\E300-063	..\W7767Q01.D08	1	1	1

Comment:

Analyst DL

Date 3/21/03

Instrument J

APCL

Applied Physics & Chemistry Laboratory

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

June 4, 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 03-2964 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

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: Leo Williamson
22632 Golden Spring Dr Ste 270
Diamond Bar CA 91765
Tel: (909)396-7662 Fax: (909)396-1455

Service ID #: 801-032964
Collected by: Leo Williamson
Collected on: 04/29/03

Received: 04/29/03
Extracted: 08/01/03
Tested: 04/29-05/02/03
Reported: 05/15/03

Sample Description: Water
Project Description: 04-4428.10 JPL

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result DUPE-4-2Q03 03-02964-1	EB-7-4/29/03 03-02964-2	MW-24-1 03-02964-3	MW-24-2 03-02964-4
BICARBONATE	SM2320B	mg/L	2	112	<2	164	124
CARBONATE	SM2320B	mg-$CaCO_3$/L	2	10.2	<2	<2	10.2
PH	9040B	pH unit	0.01	8.22	5.77	7.90	8.40
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	257	8.0J	365	257
CHROMIUM (VI)	7196	mg/L	0.01	<0.01	<0.01	<0.01	<0.01
Dilution Factor				4	1	20	4
PERCHLORATE	314.0	µg/L	4	199	<4	854	195
Dilution Factor				8	1.25	5	8
CHLORIDE CL^-	300.0	mg/L	0.2	34.3	0.26	37.9	33.8
NITRATE AS N	300.0	mg/L	0.04	1.9	0.078	6.2	1.8
SULFATE SO_4^{--}	300.0	mg/L	0.5	19.9	0.75	42.2	19.3
Dilution Factor				1	1	1	1
ARSENIC	200.9	µg/L	5	<5	<5	<5	<5
CALCIUM	200.7	µg/L	200	19,600	<200	60,300	19,900
IRON	200.7	µg/L	50	210	24.6J	203	239
MAGNESIUM	200.7	µg/L	100	12,300	45.7J	20,400	12,700
POTASSIUM	200.7	µg/L	400	2,770	112J	2,740	2,920
SODIUM	200.7	µg/L	2000	42,100	<2000	20,600	43,300
VOLATILE ORGANIC COMPOUNDS							
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	0.5	<0.5	<0.5	<0.5	<0.5
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
2-BUTANONE	524.2	µg/L	10	<10	<10	<10	<10
CARBON TETRACHLORIDE	524.2	µg/L	0.5	4.1	<0.5	7.5	8.9
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	2.3	<0.5	5.2	3.8
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

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

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result DUPE-4-2Q03 03-02964-1	EB-7-4/29/03 03-02964-2	MW-24-1 03-02964-3	MW-24-2 03-02964-4
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	1.1 (a)	<1.1	<1.1	<1.1	<1.1
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	<0.5
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
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 (CUMENE)	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	1.8 (a)	2.5	<1.8	<1.8	<1.8
METHYL-T-BUTYL ETHER (MTBE)	524.2	µg/L	1	<1	<1	<1	<1
4-METHYL-2-PENTANONE (MIBK)	524.2	µg/L	10	5J	4J	4J	4J
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	524.2	µg/L	0.5	<0.5	<0.5	0.4J	0.3J
TOLUENE	524.2	µg/L	0.5	<0.5	<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	524.2	µg/L	0.5	0.8	<0.5	2.9	1.6
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
112TRICHLORO-122TRIFLUOROETHANE	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

Applied P & Ch Laboratory
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Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result MW-24-3 03-02964-5	MW-24-4 03-02964-6	MW-24-5 03-02964-7	TB-7-4/29/03 03-02964-8
BICARBONATE	SM2320B	mg/L	2	114	102	166	-
CARBONATE	SM2320B	mg-$CaCO_3$/L	2	35.8	23.0	<2	-
PH	9040B	pH unit	0.01	8.89	9.01	8.04	-
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	216	175	227	-
CHROMIUM (VI)	7196	mg/L	0.01	<0.01	<0.01	<0.01	-
Dilution Factor				1	1	1	1
PERCHLORATE	314.0	µg/L	4	<4	<4	<4	-
Dilution Factor				4	2	2	1
CHLORIDE CL^-	300.0	mg/L	0.2	19.1	14.0	10.3	-
NITRATE AS N	300.0	mg/L	0.04	0.36	0.14	1.3	-
SULFATE SO_4^{--}	300.0	mg/L	0.5	15.8	7.1	19.2	-
Dilution Factor				1	1	1	1
ARSENIC	200.9	µg/L	5	4.4J	<5	2.7J	-
CALCIUM	200.7	µg/L	200	16,500	7,470	29,300	-
IRON	200.7	µg/L	50	198	55.3	26.1J	-
MAGNESIUM	200.7	µg/L	100	12,900	8,460	9,050	-
POTASSIUM	200.7	µg/L	400	2,370	2,180	1,850	-
SODIUM	200.7	µg/L	2000	43,900	43,300	38,900	-
VOLATILE ORGANIC COMPOUNDS							
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	0.5	<0.5	<0.5	<0.5	<0.5
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
2-BUTANONE	524.2	µg/L	10	<10	<10	<10	<10
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	<0.5	<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	1.1 [a]	<1.1	<1.1	<1.1	<1.1
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	<0.5
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

Applied P & Ch Laboratory
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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result MW-24-3 03-02964-5	MW-24-4 03-02964-6	MW-24-5 03-02964-7	TB-7-4/29/03 03-02964-8
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 (CUMENE)	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	1.8 [a]	<1.8	<1.8	<1.8	1.8
METHYL-T-BUTYL ETHER (MTBE)	524.2	µg/L	1	<1	<1	<1	<1
4-METHYL-2-PENTANONE (MIBK)	524.2	µg/L	10	5J	5J	5J	<10
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	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
TOLUENE	524.2	µg/L	0.5	<0.5	<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	524.2	µg/L	0.5	<0.5	<0.5	<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
112TRICHLORO-122TRIFLUOROETHANE	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

Applied P & Ch Laboratory
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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result MW-24-1 03-02964-3
Dilution Factor				1
1,4-DIOXANE	8270-SIM	μg/L	1	3.6

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: 03-2964

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

Case Narrative

Project: JPL/04-4428.10

For GEOFON, Inc.

APCL Service No: 03-2964

1. Sample Identification

The sample identifications are listed in the following table:

GEOFON, Inc. Sample ID	APCL Sample ID
MW-24-5	03-02964-7
MW-24-4	03-02964-6
MW-24-3	03-02964-5
MW-24-2	03-02964-4
MW-24-1	03-02964-3
TB-7-4/29/03	03-02964-8
EB-7-4/29/03	03-02964-2
DUPE-4-2Q03	03-02964-1

2. Analytical Methodology

Samples are analyzed by EPA methods

524.2 (Volatile Organic Compounds),
7196 (Chromium (VI)),
314.0 (Perchlorate, low level),
300.0 (Anions, by IC),
SM2320B (Bicarbonate,Carbonate),
9040B (pH),
160.1 (Solids, Total Dissolved (TDS)),
200.9/200.7 (Metals,),
8270-SIM (1,4-Dioxane),

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 condi-

tions 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,

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

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-24 0025

GEOFON's LAB COORDINATOR	LAB COORDINATOR'S PHONE	LAB COORDINATOR'S FAX	LABORATORY SERVICE ID	LABORATORY CONTACT	MAIL REPORT (COMPANY NAME)
Brad Shojaee	(909) 396-7662	(909) 396-1455	-	Kenny Chan	GEOFON, INC.
PROJECT NAME: JPL GW MON-2003	**PROJECT LOCATION** MW-24 (E. of Security Bldg.)	**PROJECT NUMBER** 04-4428.10	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		ADDRESS 22632 Golden Springs Dr. #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 Asrar Faheem	PROJECT MANAGER'S PHONE (909) 396-7662	PROJECT MANAGER'S FAX (909) 396-1455			

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont	QC Level	T.A.T	524.2 (VOCs)	200.7 & 200.9 (Minerals)	7196 (Hex. Chrome)	SIM 2320B (Alk.)	300.0 (Cl / SO4 / NO3)	314.0 (Perchlorate)	160.1 (TDS) + 9040B (pH)	200.8 (Cr + Pb)	Comments
1	MW-24-5	H_2O	4/29/03	840	HCl NONE HNO_3	3+1+1+1	III	NORMAL	X	X	X	X	X	X	X	X	NORMAL: Na / K / Ca / As / Mg / Fe
2	MW-24-4	↓	↓	935	↓	↓	↓	↓	X	X	X	X	X	X	X	X	
3	MW-24-3			1040					X	X	X	X	X	X	X	X	2964
4	MW-24-2			1210					X	X	X	X	X	X	X	X	
5	MW-24-1			1400					X	X	X	X	X	X	X	X	
6																	
7	TB-7-4/29/03	H_2O	—	—	HCl	2	III	NORMAL	X								
8	EB-7-4/29/03	↓	4/29/03	955	HCl NONE HNO_3	3+1+1+1	↓	↓	X	X	X	X	X	X	X	X	
9	DUPE-4-2003	↓	↓	—	↓	↓	IV	↓	X	X	X	X	X	X	X	X	
10																	

SAMPLES COLLECTED BY: Leo W. Williamson

COURIER AND AIR BILL NUMBER:

COOLER TEMPERATURE UPON RECEIPT:

RELINQUISHED BY	RECEIVED BY	DATE	TIME
Leo W. Williamson		4/29/03	1450
		4/29/03	1755

SAMPLE'S CONDITION UPON RECEIPT:

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

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-24 0026

GEOFON's LAB COORDINATOR	LAB COORDINATOR'S PHONE	LAB COORDINATOR'S FAX	LABORATORY SERVICE ID	LABORATORY CONTACT	MAIL REPORT (COMPANY NAME)
Brad Shojaee	(909) 396-7662	(909) 396-1455	—	Kenny Chan	GEOFON, INC.
PROJECT NAME	**PROJECT LOCATION**	**PROJECT NUMBER**	**LABORATORY PHONE**	**LABORATORY FAX**	**RECIPIENT NAME**
JPL GW MON-2903	MW-24 (E. of Security Bldg)	04-4428.10	(909) 590-1626	(909) 590-1498	Leo W. Williamson
PROJECT CONTACT	**PROJECT PHONE NUMBER**	**PROJECT FAX**	**LABORATORY ADDRESS**		**ADDRESS**
Leo W. Williamson	(714) 920-8729	(909) 396-1455	13760 Magnolia Ave		22632 Golden Springs Dr. #270
PROJECT ADDRESS	**CITY, STATE AND ZIPCODE**	**CLIENT**	**CITY, STATE AND ZIPCODE**		**CITY, STATE AND ZIPCODE**
4800 Oak Grove Dr.	Pasadena, CA.	US NAVY SWDIV	Chino, CA. 91710 (No Phone)		Diamond Bar, CA. 91765
PROJECT MANAGER	**PROJECT MANAGER'S PHONE**	**PROJECT MANAGER'S FAX**			
Asrar Faheem	(909) 396-7662	(909) 396-1455			

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont	QC Level	T.A.T	Analyses: 8270 SIM (44-Diotane)	Analyses: 1625M (NDMA)	Comments
1	MW-24-1	H_2O	4/29/03	1400	NONE	2x1L 2x1L	III	NORMAL	X	X	
2											
3											2964
4											
5											
6											
7											
8											
9											
10											

SAMPLES COLLECTED BY: Leo W. Williamson

COURIER AND AIR BILL NUMBER.

COOLER TEMPERATURE UPON RECEIPT: 6

RELINQUISHED BY	RECEIVED BY	DATE	TIME	SAMPLE'S CONDITION UPON RECEIPT
Leo W. Williamson		4/29/03	1452	
		4/29/03	1544	

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 Receiving Checklist

APCL ServiceID: 2964 **Client Name/Project:** Geofon JPL

1. Sample Arrival

Date/Time Received 4/29/03 1555 Date/Time Opened 4/29/03 1555 By (name): Kenneth Thon

Custody Transfer: ☐ Client ☐ Golden State ☐ UPS ☑ US Mail ☐ FedEx ☑ APCL Empl: Adan Wood

2. Chain-of-Custody (CoC)

☑ With Samples? ☐ Faxed? ☐ Client has Copy? ☐ Signed, dated? By: _____
☑ Project ID? ☑ Analyses Clear? ☐ Hold Samples? #on Hold _____ # Received 9
☑ 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 3.9 _____ _____ _____ _____ _____
(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: _____ Date: 29 Apr 2003 Time: 7:46 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 Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Sample Login: Check List

03-02964 (0470_ 136) (2202777_ 136)

04/29/03

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 #:	*04-4428.10*
☐	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:	*04/29/03 1555*
		COC No.	
☐	Shipping Information	Shipping Company	*APCL pick up*
		Packing Information:	*Cooler/Ice Chester*
		Cooler Temperature:	*3.9 °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 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-24-5	VOC	03-02964-7-α	W	V	C	40	3	G	042903	N	0	7	☐
	MW-24-5	Metal	03-02964-7-β	W	P	N	500	1	G	042903	N	0	7	☐
	MW-24-5	300	03-02964-7-γ	W	P		1000	1	G	042903	N	0	7	☐
2	MW-24-4	VOC	03-02964-6-α	W	V	C	40	3	G	042903	N	0	7	☐
	MW-24-4	Metal	03-02964-6-β	W	P	N	500	1	G	042903	N	0	7	☐
	MW-24-4	300	03-02964-6-γ	W	P		1000	1	G	042903	N	0	7	☐
3	MW-24-3	VOC	03-02964-5-α	W	V	C	40	3	G	042903	N	0	7	☐
	MW-24-3	Metal	03-02964-5-β	W	P	N	500	1	G	042903	N	0	7	☐
	MW-24-3	300	03-02964-5-γ	W	P		1000	1	G	042903	N	0	7	☐
4	MW-24-2	VOC	03-02964-4-α	W	V	C	40	3	G	042903	N	0	7	☐
	MW-24-2	Metal	03-02964-4-β	W	P	N	500	1	G	042903	N	0	7	☐
	MW-24-2	300	03-02964-4-γ	W	P		1000	1	G	042903	N	0	7	☐
5	MW-24-1	VOC	03-02964-3-α	W	V	C	40	3	G	042903	N	0	7	☐
	MW-24-1	Metal	03-02964-3-β	W	P	N	500	1	G	042903	N	0	7	☐
	MW-24-1	300	03-02964-3-γ	W	P		1000	1	G	042903	N	0	7	☐
	MW-24-1	Dioxane	03-02964-3-δ	W	G		1000	2	G	042903	N	0	7	☐
6	TB-7-4/29/03	VOC	03-02964-8	W	V	C	40	2	G	042903	N	0	7	☐
7	EB-7-4/29/03	VOC	03-02964-2-α	W	V	C	40	3	G	042903	N	0	7	☐
	EB-7-4/29/03	Metal	03-02964-2-β	W	P	N	500	1	G	042903	N	0	7	☐
	EB-7-4/29/03	300	03-02964-2-γ	W	P		1000	1	G	042903	N	0	7	☐
8	DUPE-4-2Q03	VOC	03-02964-1-α	W	V	C	40	3	G	042903	N	0	7	☐
	DUPE-4-2Q03	Metal	03-02964-1-β	W	P	N	500	1	G	042903	N	0	7	☐
	DUPE-4-2Q03	300	03-02964-1-γ	W	P		1000	1	G	042903	N	0	7	☐

Part 3: Analysis Information

Test Items:

- ☐ *524.2* Volatile Organic Compounds
- ☐ *7196A* Chromium (VI)
- ☐ *314.0/300.0* Perchlorate, low level
- ☐ *300.0* Chloride Cl^- by IC
- ☐ *300.0* Sulfate (SO_4^{--}), by IC
- ☐ *300.0/SM4500NO3* Nitrate (NO_3^-) as N by IC
- ☐ *SM2320B* Carbonate
- ☐ *SM2320B* Bicarbonate
- ☐ *9040B/150.1* pH
- ☐ *160.1* Solids, Total Dissolved (TDS)
- ☐ *200.7/6010B* Sodium, Na, by ICP
- ☐ *200.7/6010B* Calcium, Ca, by ICP

☐ *200.7/6010B* Potassium, K, by ICP

☐ *200.7/6010B* Magnesium, Mg, by ICP

☐ *200.7/6010B* Iron, Fe, by ICP

☐ *206.2/7060A* Arsenic, As, by GFAA

☐ *8270-SIM* 1,4-Dioxane

Seq. #	Client"s Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	524.2	CHROMIUM	PERCH	CL	SO4	NO3	CARBON	BICARB	
1	MW-24-5	VOC	03-02964-7-α	W	X								☐
	MW-24-5	Metal	03-02964-7-β	W									☐
	MW-24-5	300	03-02964-7-γ	W		X	X	X	X	X	X	X	☐
2	MW-24-4	VOC	03-02964-6-α	W	X								☐
	MW-24-4	Metal	03-02964-6-β	W									☐
	MW-24-4	300	03-02964-6-γ	W		X	X	X	X	X	X	X	☐
3	MW-24-3	VOC	03-02964-5-α	W	X								☐
	MW-24-3	Metal	03-02964-5-β	W									☐
	MW-24-3	300	03-02964-5-γ	W		X	X	X	X	X	X	X	☐
4	MW-24-2	VOC	03-02964-4-α	W	X								☐
	MW-24-2	Metal	03-02964-4-β	W									☐
	MW-24-2	300	03-02964-4-γ	W		X	X	X	X	X	X	X	☐
5	MW-24-1	VOC	03-02964-3-α	W	X								☐
	MW-24-1	Metal	03-02964-3-β	W									☐
	MW-24-1	300	03-02964-3-γ	W		X	X	X	X	X	X	X	☐
	MW-24-1	Dioxane	03-02964-3-δ	W									☐
6	TB-7-4/29/03	VOC	03-02964-8	W	X								☐
7	EB-7-4/29/03	VOC	03-02964-2-α	W	X								☐
	EB-7-4/29/03	Metal	03-02964-2-β	W									☐
	EB-7-4/29/03	300	03-02964-2-γ	W		X	X	X	X	X	X	X	☐
8	DUPE-4-2Q03	VOC	03-02964-1-α	W	X								☐
	DUPE-4-2Q03	Metal	03-02964-1-β	W									☐
	DUPE-4-2Q03	300	03-02964-1-γ	W		X	X	X	X	X	X	X	☐

Seq. #	Client"s Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	PH	TDS	NA	CA	K	MG	FE	AS	
1	MW-24-5	VOC	03-02964-7-α	W									☐
	MW-24-5	Metal	03-02964-7-β	W			X	X	X	X	X	X	☐
	MW-24-5	300	03-02964-7-γ	W	X	X							☐
2	MW-24-4	VOC	03-02964-6-α	W									☐
	MW-24-4	Metal	03-02964-6-β	W			X	X	X	X	X	X	☐
	MW-24-4	300	03-02964-6-γ	W	X	X							☐
3	MW-24-3	VOC	03-02964-5-α	W									☐
	MW-24-3	Metal	03-02964-5-β	W			X	X	X	X	X	X	☐
	MW-24-3	300	03-02964-5-γ	W	X	X							☐

4	MW-24-2	VOC	03-02964-4-α	W									☐
	MW-24-2	Metal	03-02964-4-β	W			X	X	X	X	X	X	☐
	MW-24-2	300	03-02964-4-γ	W	X	X							☐
5	MW-24-1	VOC	03-02964-3-α	W									☐
	MW-24-1	Metal	03-02964-3-β	W			X	X	X	X	X	X	☐
	MW-24-1	300	03-02964-3-γ	W	X	X							☐
	MW-24-1	Dioxane	03-02964-3-δ	W									☐
6	TB-7-4/29/03	VOC	03-02964-8	W									☐
7	EB-7-4/29/03	VOC	03-02964-2-α	W									☐
	EB-7-4/29/03	Metal	03-02964-2-β	W			X	X	X	X	X	X	☐
	EB-7-4/29/03	300	03-02964-2-γ	W	X	X							☐
8	DUPE-4-2Q03	VOC	03-02964-1-α	W									☐
	DUPE-4-2Q03	Metal	03-02964-1-β	W			X	X	X	X	X	X	☐
	DUPE-4-2Q03	300	03-02964-1-γ	W	X	X							☐

Seq. #	Client"s Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	DIOXANE	
1	MW-24-5	VOC	03-02964-7-α	W		☐
	MW-24-5	Metal	03-02964-7-β	W		☐
	MW-24-5	300	03-02964-7-γ	W		☐
2	MW-24-4	VOC	03-02964-6-α	W		☐
	MW-24-4	Metal	03-02964-6-β	W		☐
	MW-24-4	300	03-02964-6-γ	W		☐
3	MW-24-3	VOC	03-02964-5-α	W		☐
	MW-24-3	Metal	03-02964-5-β	W		☐
	MW-24-3	300	03-02964-5-γ	W		☐
4	MW-24-2	VOC	03-02964-4-α	W		☐
	MW-24-2	Metal	03-02964-4-β	W		☐
	MW-24-2	300	03-02964-4-γ	W		☐
5	MW-24-1	VOC	03-02964-3-α	W		☐
	MW-24-1	Metal	03-02964-3-β	W		☐
	MW-24-1	300	03-02964-3-γ	W		☐
	MW-24-1	Dioxane	03-02964-3-δ	W	X	☐
6	TB-7-4/29/03	VOC	03-02964-8	W		☐
7	EB-7-4/29/03	VOC	03-02964-2-α	W		☐
	EB-7-4/29/03	Metal	03-02964-2-β	W		☐
	EB-7-4/29/03	300	03-02964-2-γ	W		☐
8	DUPE-4-2Q03	VOC	03-02964-1-α	W		☐
	DUPE-4-2Q03	Metal	03-02964-1-β	W		☐
	DUPE-4-2Q03	300	03-02964-1-γ	W		☐

☐ Client"s Requirement: **RUN ~~MS/MSD ON SAMPLE #~~**

Login By En-Yu Paul Kou

Level C Data Package Deliverables

Volatile Organics

Applied P & Ch Laboratory

Applied P & Ch Laboratory

Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/30/2003
Project ID:	JPL	Service ID:	32964	Collected by:	
		Lab Sample ID:	03G2269-MB-01	Received Date:	04/30/2003
Sample ID:	**03G2269-MB-01**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Method Blank	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	524.2	Prep. Date:	04/30/03	Anal. Date:	04/30/03
Batch No:	03G2269	Prep. No:	-	Anal. Time:	21:03
Data File Name:	G2269K02	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	BENZENE	71-43-2	µg/L	0.5	<0.5	U
2	BROMOBENZENE	108-86-1	µg/L	0.5	<0.5	U
3	BROMOCHLOROMETHANE	74-97-5	µg/L	0.5	<0.5	U
4	BROMODICHLOROMETHANE	75-27-4	µg/L	0.5	<0.5	U
5	BROMOFORM	75-25-2	µg/L	0.5	<0.5	U
6	BROMOMETHANE	74-83-9	µg/L	0.5	<0.5	U
7	N-BUTYLBENZENE	104-51-8	µg/L	0.5	<0.5	U
8	SEC-BUTYLBENZENE	135-98-8	µg/L	0.5	<0.5	U
9	TERT-BUTYLBENZENE	98-06-6	µg/L	0.5	<0.5	U
10	2-BUTANONE	78-93-3	µg/L	10	<10	U
11	CARBON TETRACHLORIDE	56-23-5	µg/L	0.5	<0.5	U
12	CHLOROBENZENE	108-90-7	µg/L	0.5	<0.5	U
13	CHLORODIBROMOMETHANE	124-48-1	µg/L	0.5	<0.5	U
14	CHLOROETHANE	75-00-3	µg/L	0.5	<0.5	U
15	CHLOROFORM	67-66-3	µg/L	0.5	<0.5	U
16	CHLOROMETHANE	74-87-3	µg/L	0.5	<0.5	U
17	2-CHLOROTOLUENE	95-49-8	µg/L	0.5	<0.5	U
18	4-CHLOROTOLUENE	106-43-4	µg/L	0.5	<0.5	U
19	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	µg/L	1.1	<1.1	U
20	1,2-DIBROMOETHANE (EDB)	106-93-4	µg/L	0.5	<0.5	U
21	DIBROMOMETHANE	74-95-3	µg/L	0.5	<0.5	U
22	1,2-DICHLOROBENZENE	95-50-1	µg/L	0.5	<0.5	U
23	1,3-DICHLOROBENZENE	541-73-1	µg/L	0.5	<0.5	U
24	1,4-DICHLOROBENZENE	106-46-7	µg/L	0.5	<0.5	U
25	DICHLORODIFLUOROMETHANE	75-71-8	µg/L	0.5	<0.5	U
26	1,1-DICHLOROETHANE	75-34-3	µg/L	0.5	<0.5	U
27	1,2-DICHLOROETHANE	107-06-2	µg/L	0.5	<0.5	U
28	1,1-DICHLOROETHENE	75-35-4	µg/L	0.5	<0.5	U
29	CIS-1,2-DICHLOROETHENE	156-59-2	µg/L	0.5	<0.5	U
30	TRANS-1,2-DICHLOROETHENE	156-60-5	µg/L	0.5	<0.5	U
31	1,2-DICHLOROPROPANE	78-87-5	µg/L	0.5	<0.5	U
32	1,3-DICHLOROPROPANE	142-28-9	µg/L	0.5	<0.5	U
33	2,2-DICHLOROPROPANE	594-20-7	µg/L	0.5	<0.5	U
34	1,1-DICHLOROPROPENE	563-58-6	µg/L	0.5	<0.5	U
35	CIS-1,3-DICHLOROPROPENE	10061-01-5	µg/L	0.5	<0.5	U
36	TRANS-1,3-DICHLOROPROPENE	10061-02-6	µg/L	0.5	<0.5	U
37	ETHYLBENZENE	100-41-4	µg/L	0.5	<0.5	U
38	HEXACHLOROBUTADIENE	87-68-3	µg/L	0.5	<0.5	U
39	ISOPROPYLBENZENE (CUMENE)	98-82-8	µg/L	0.5	<0.5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	P-ISOPROPYLTOLUENE	99-87-6	µg/L	0.5	<0.5	U
41	METHYLENE CHLORIDE	75-09-2	µg/L	1.8	<1.8	U
42	METHYL-T-BUTYL ETHER (MTBE)	1634-04-4	µg/L	1	<1	U
43	4-METHYL-2-PENTANONE (MIBK)	108-10-1	µg/L	10	<10	U
44	NAPHTHALENE	91-20-3	µg/L	0.5	<0.5	U
45	N-PROPYLBENZENE	103-65-1	µg/L	0.5	<0.5	U
46	STYRENE	100-42-5	µg/L	0.5	<0.5	U
47	1,1,1,2-TETRACHLOROETHANE	630-20-6	µg/L	0.5	<0.5	U
48	1,1,2,2-TETRACHLOROETHANE	79-34-5	µg/L	0.5	<0.5	U
49	TETRACHLOROETHENE	127-18-4	µg/L	0.5	<0.5	U
50	TOLUENE	108-88-3	µg/L	0.5	<0.5	U
51	1,2,3-TRICHLOROBENZENE	87-61-6	µg/L	0.5	<0.5	U
52	1,2,4-TRICHLOROBENZENE	120-82-1	µg/L	0.5	<0.5	U
53	1,1,1-TRICHLOROETHANE	71-55-6	µg/L	0.5	<0.5	U
54	1,1,2-TRICHLOROETHANE	79-00-5	µg/L	0.5	<0.5	U
55	TRICHLOROETHENE	79-01-6	µg/L	0.5	<0.5	U
56	TRICHLOROFLUOROMETHANE	75-69-4	µg/L	0.5	<0.5	U
57	1,2,3-TRICHLOROPROPANE	96-18-4	µg/L	0.5	<0.5	U
58	112TRICHLORO-122TRIFLUOROETHANE	76-13-1	µg/L	0.5	<0.5	U
59	1,2,4-TRIMETHYLBENZENE	95-63-6	µg/L	0.5	<0.5	U
60	1,3,5-TRIMETHYLBENZENE	108-67-8	µg/L	0.5	<0.5	U
61	VINYL CHLORIDE	75-01-4	µg/L	0.5	<0.5	U
62	O-XYLENE	95-47-6	µg/L	0.5	<0.5	U
63	M/P-XYLENE	108-38-3	µg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-BROMO-FLUOROBENZENE (BFB)	460-00-4	70-129	110
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	85
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	91
4	TOLUENE-D8	2037-26-5	73-129	103
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	CHLOROBENZENE-D5	3114-55-4	50-200	86
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	87
3	FLUOROBENZENE	462-06-6	50-200	96
# of out-of-control				0

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

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Quantitation Report: **Applied P &Ch Lab** EPA 524.2

Data Filename: C:\HPCHEM\1\DATA\03G2269\G2269K02.D
Method : C:\HPCHEM\1\METHODS\E524G003.M
Acq. Time : Apr 30 21:03 2003
Method Update: Mon Jan 13 10:38 2003
Quant. Time : Apr 30 21:24 2003
Print Time : Thu May 01 09:26 2003
Miscleneous :

Sample : f=1
Inst. : GCMS-G
RF via : Multiple Level Calibration
Operator: Eddie
Multiplr: 1.000000

4910

ID	Component Name	R.T.	RT0	DRRT	QIon	Q1	RF/1000	C0,ppb	C,ppb	Quality	Note
Internal Standards									Dev(Min)		
1	1 Fluorobenzene I1	9.12	9.03	0.010	96	70	730.711	10.00		0.09	
47	47 Cl-benzene-d5, I2	12.76	12.66	0.008	82	119	192.175	10.00		0.10	
62	62 1,4-DCB-d4 150 15	15.28	15.15	0.008	152	150	163.983	10.00		0.13	
System Monitoring Compounds (Surrogate)									%Recovery		
27	27 Di-Br-F-Methane (	7.54	7.44	0.007	111	113	468.584	18.08	18.1	90.42%	
29	29 1,2-di-Cl-ethane-	8.12	8.02	0.006	65	102	204.250	16.92	16.9	84.59%	
55	55 toluene-d8(S2)	11.25	11.15	0.006	100	99	750.218	20.55	20.6	102.77%	
70	70 4-Br-1-F-Bz (S3)	14.00	13.90	0.007	174	95	321.490	21.94	21.9	109.71%	
Target Compounds									Qvalue		
<<< I1 : ISTD ID = 1 >>>											
111	111 isopropyl alcoho	4.27	4.27	0.000	45	43	0.665	2.02	2.0	81	
119	119 methyl acetate	5.04	5.06	-0.002	43	74	1.335	0.41	0.4	56	#?
18	18 methylene chlorid	5.04	4.97	0.008	84	49	84.954	0.98	1.0	95	?
91	91 2-butanone MEKx10	6.82	6.83	-0.002	43	72	4.355	0.64	0.6	74	#
117	117 Iso-butyl alcoho	7.30	7.31	-0.001	43	42	1.636	0.84	0.8	1	#
48	48 112-tri-Cl-Et	11.26	11.03	0.026	97	83	20.357	2.10	2.1	4	#?
<<< I2 : ISTD ID = 47 >>>											
49	49 1,3-di-cl-propane	11.25	11.29	-0.003	76	78	7.855	0.63	0.6	83	#?

= qualifier out of range, m = manual integration, ? = RT coelution, * = DRRT > 0.06

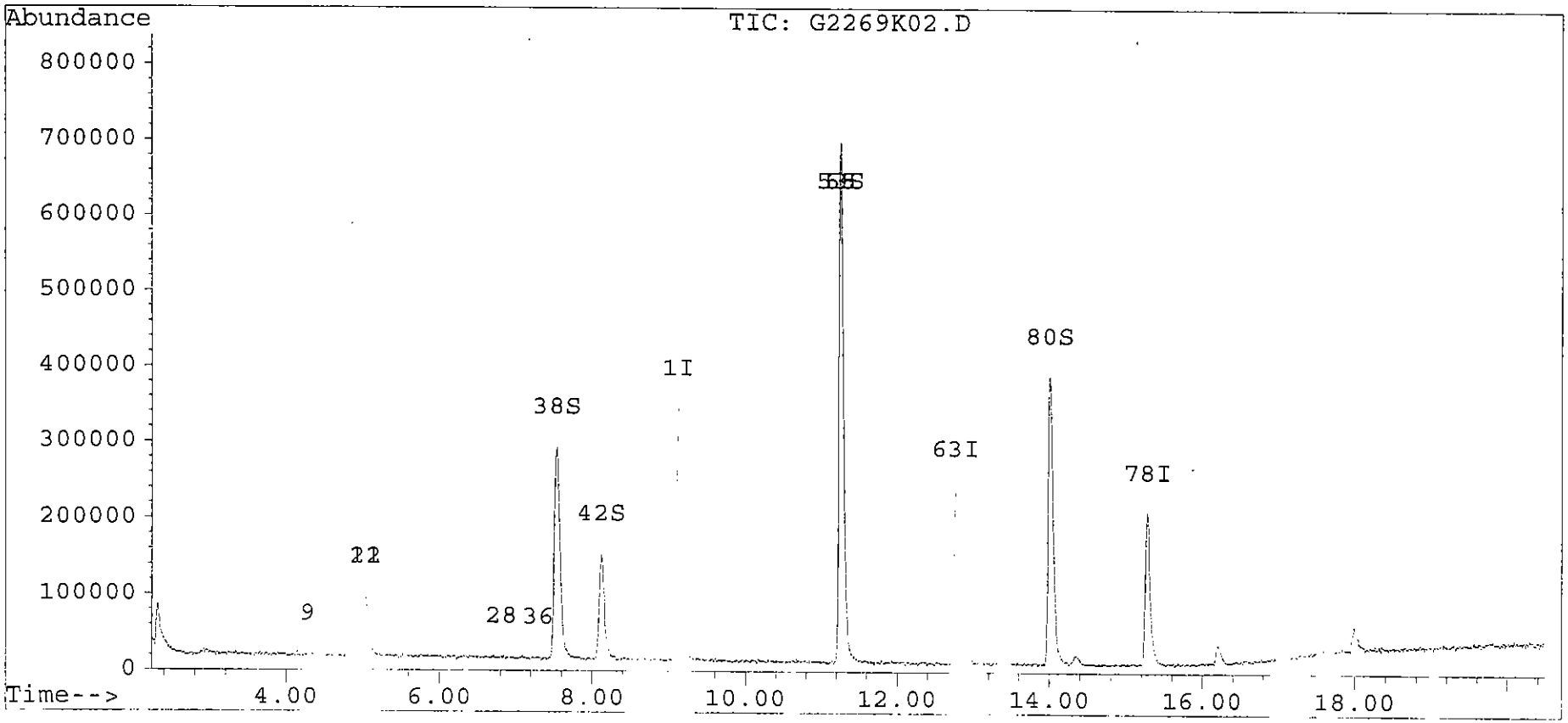
Quantitation Report

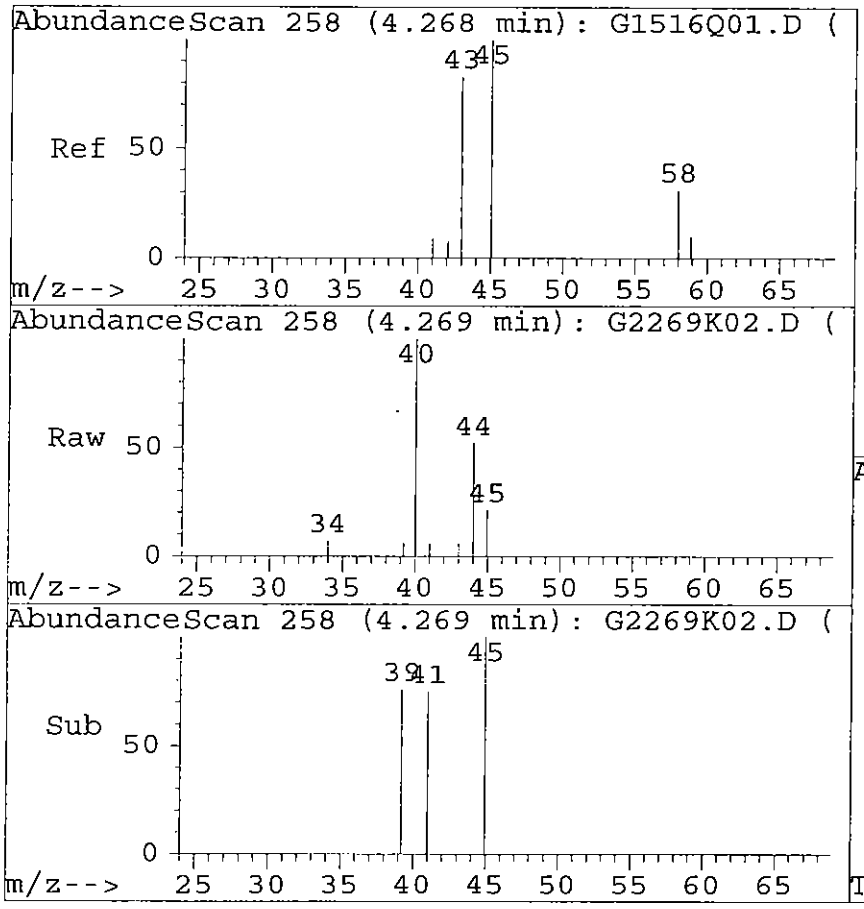
Data File : C:\HPCHEM\1\DATA\03G2269\G2269K02.D
Acq On : 30 Apr 03 9:03 pm
Sample : f=1
Misc :
Quant Time: Apr 30 21:24 2003

Vial: 26
Operator: Eddie
Inst : GCMS-G
Multiplr: 1.00
Quant Results File: quant.res

Method : C:\HPCHEM\1\METHODS\E524G003.M
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Jan 13 10:38:23 2003
Response via : Multiple Level Calibration

4911

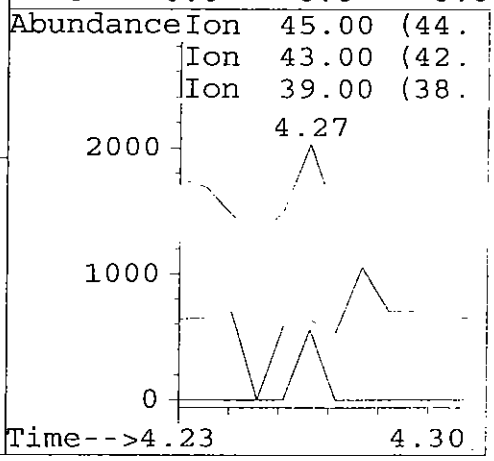


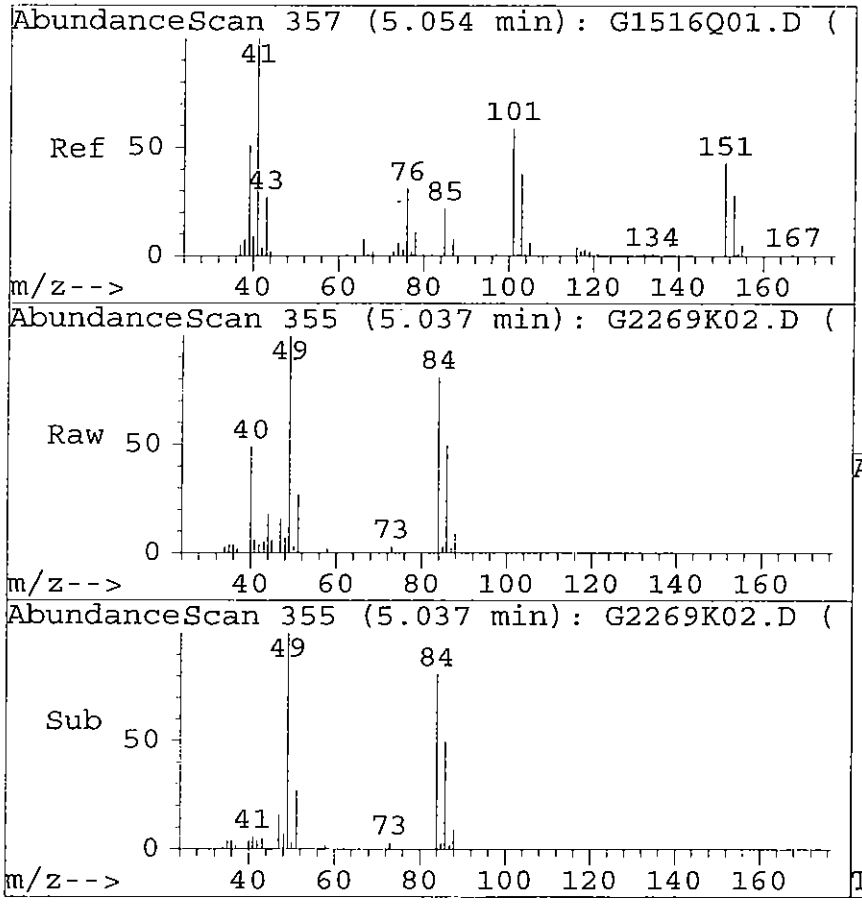


#9
111 isopropyl alcohol x10
Concen: 2.02 ppb
RT: 4.27 min Scan# 258
Delta R.T. -0.00 min
Lab File: G2269K02.D
Acq: 30 Apr 03 9:03 pm

Tgt Ion:45 Resp: 665

Ion	Ratio	Lower	Upper
45	100		
43	439.2	395.5	593:2
39	39.8	28.3	42.4
0	0.0	0.0	0.0

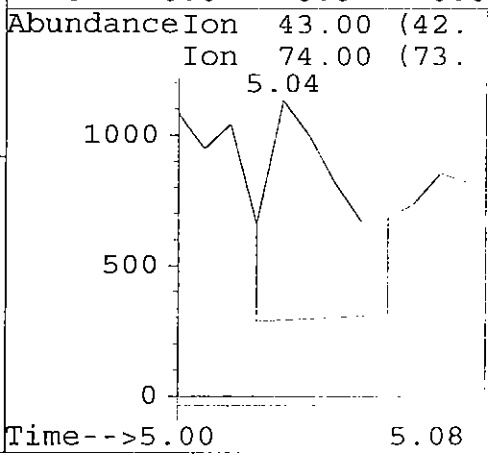


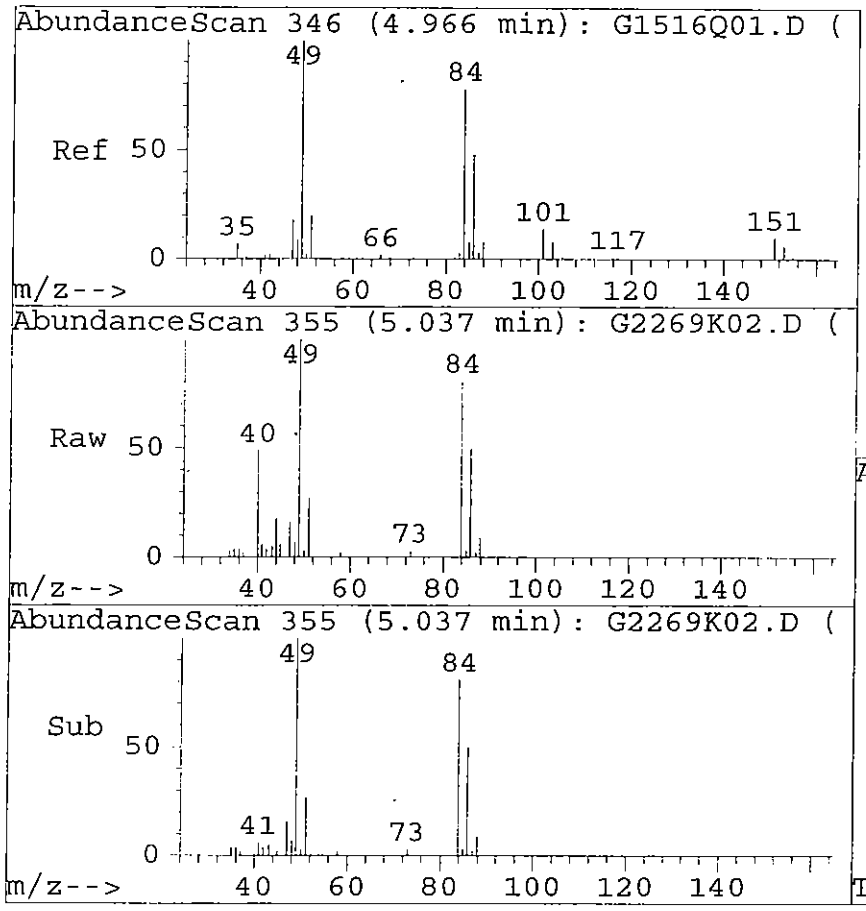


#12
119 methyl acetate
Concen: 0.41 ppb
RT: 5.04 min Scan# 355
Delta R.T. -0.02 min
Lab File: G2269K02.D
Acq: 30 Apr 03 9:03 pm

Tgt Ion:43 Resp: 1335

Ion	Ratio	Lower	Upper
43	100		
74	0.0	0.6	40.6#
0	0.0	0.0	0.0
0	0.0	0.0	0.0

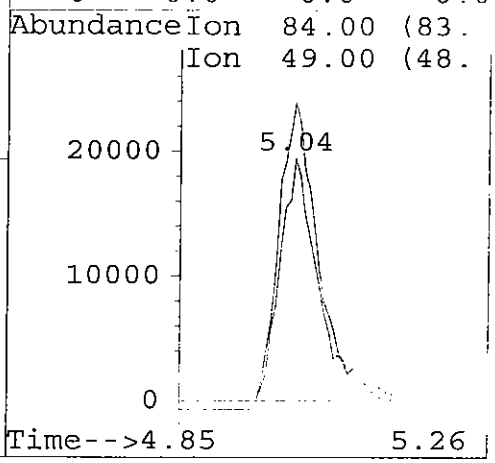


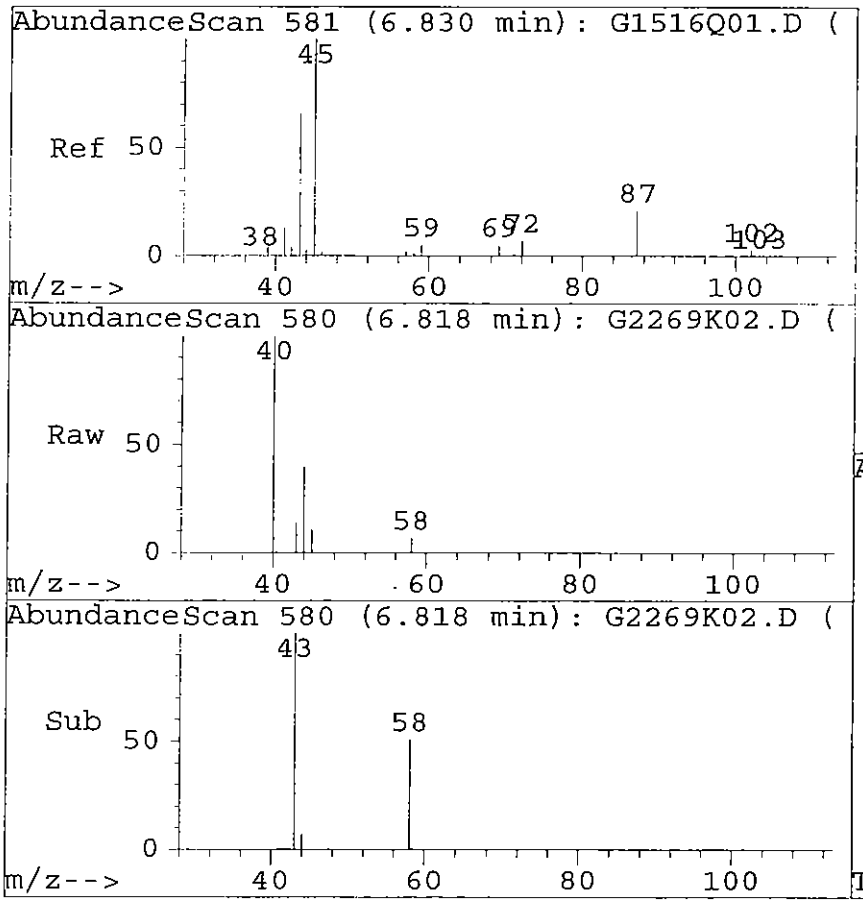


#21
18 methylene chloride 49 84
Concen: 0.98 ppb
RT: 5.04 min Scan# 355
Delta R.T. 0.07 min
Lab File: G2269K02.D
Acq: 30 Apr 03 9:03 pm

Tgt Ion:84 Resp: 84954

Ion	Ratio	Lower	Upper
84	100		
49	127.6	66.5	199.4
0	0.0	0.0	0.0
0	0.0	0.0	0.0

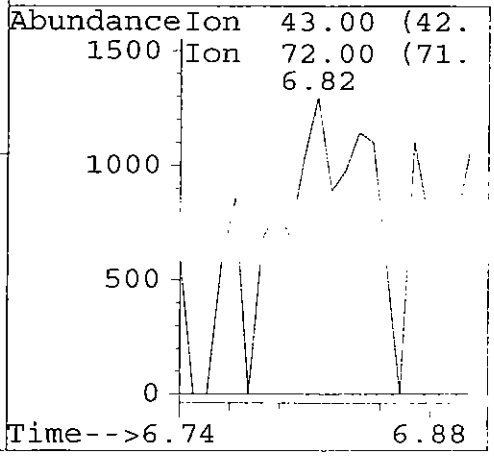


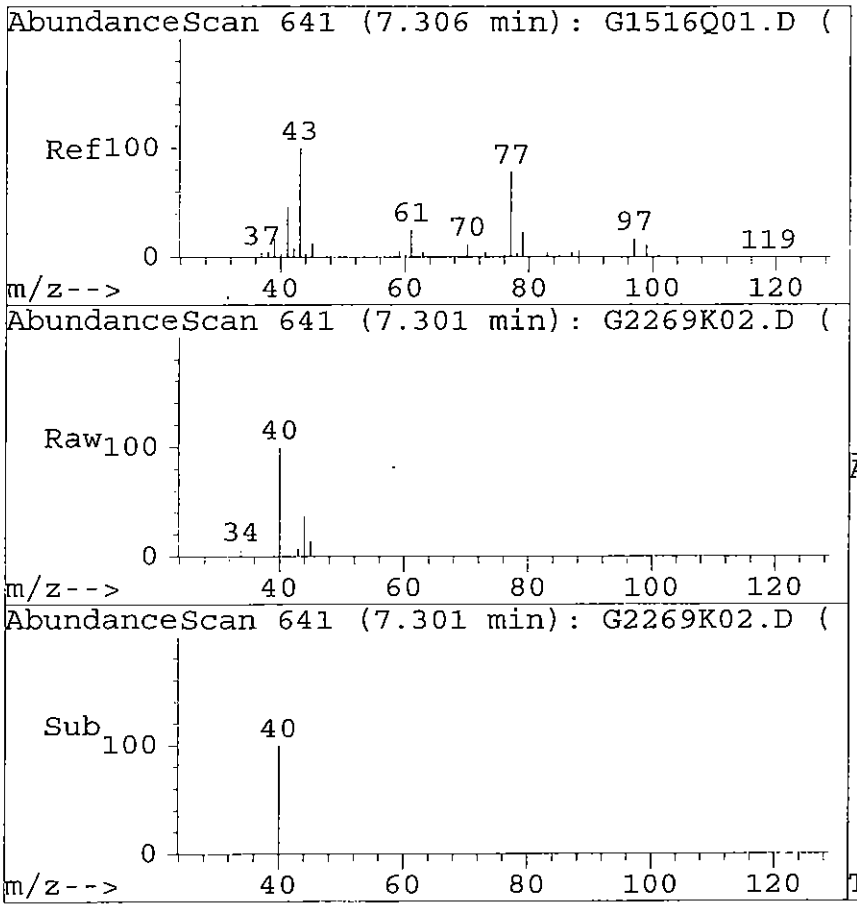


#28
91 2-butanone MEKx10
Concen: 0.64 ppb
RT: 6.82 min Scan# 580
Delta R.T. -0.02 min
Lab File: G2269K02.D
Acq: 30 Apr 03 9:03 pm

Tgt Ion:43 Resp: 4355

Ion	Ratio	Lower	Upper
43	100		
72	0.0	7.7	11.6#
0	0.0	0.0	0.0
0	0.0	0.0	0.0

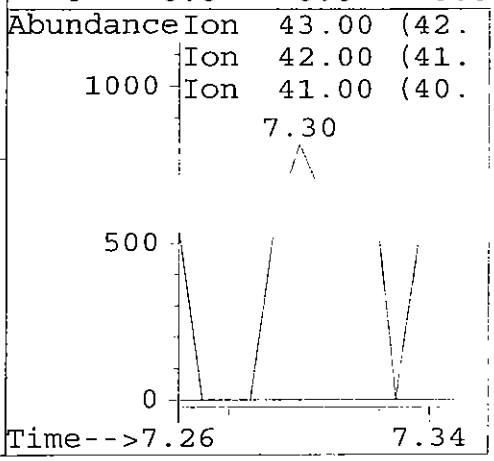


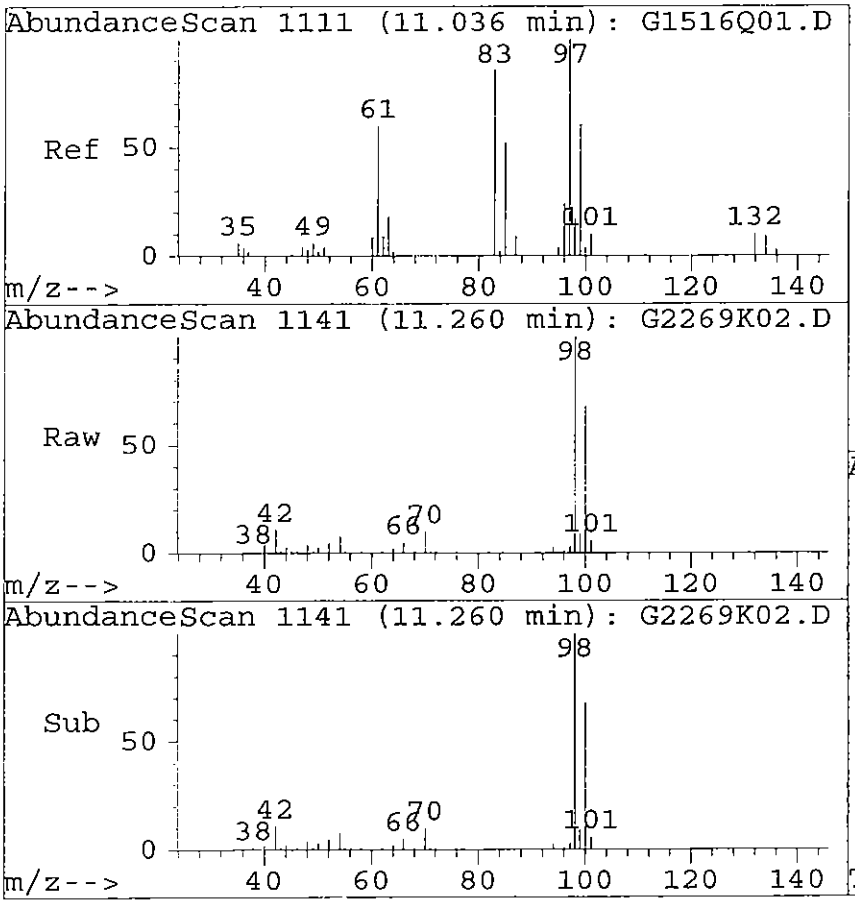


#36
117 Iso-butyl alcohol X10
Concen: 0.84 ppb
RT: 7.30 min Scan# 641
Delta R.T. -0.01 min
Lab File: G2269K02.D
Acq: 30 Apr 03 9:03 pm

Tgt Ion:43 Resp: 1636

Ion	Ratio	Lower	Upper
43	100		
42	0.0	21.1	31.6#
41	0.0	161.8	242.7#
0	0.0	0.0	0.0

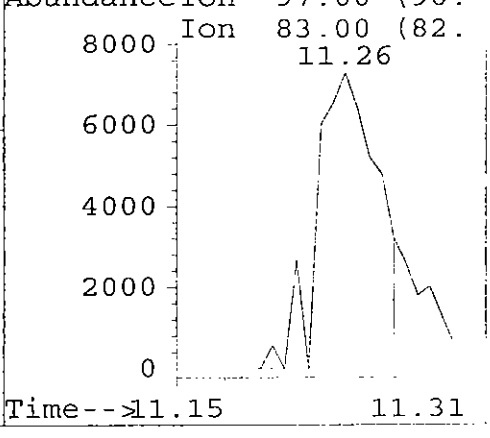


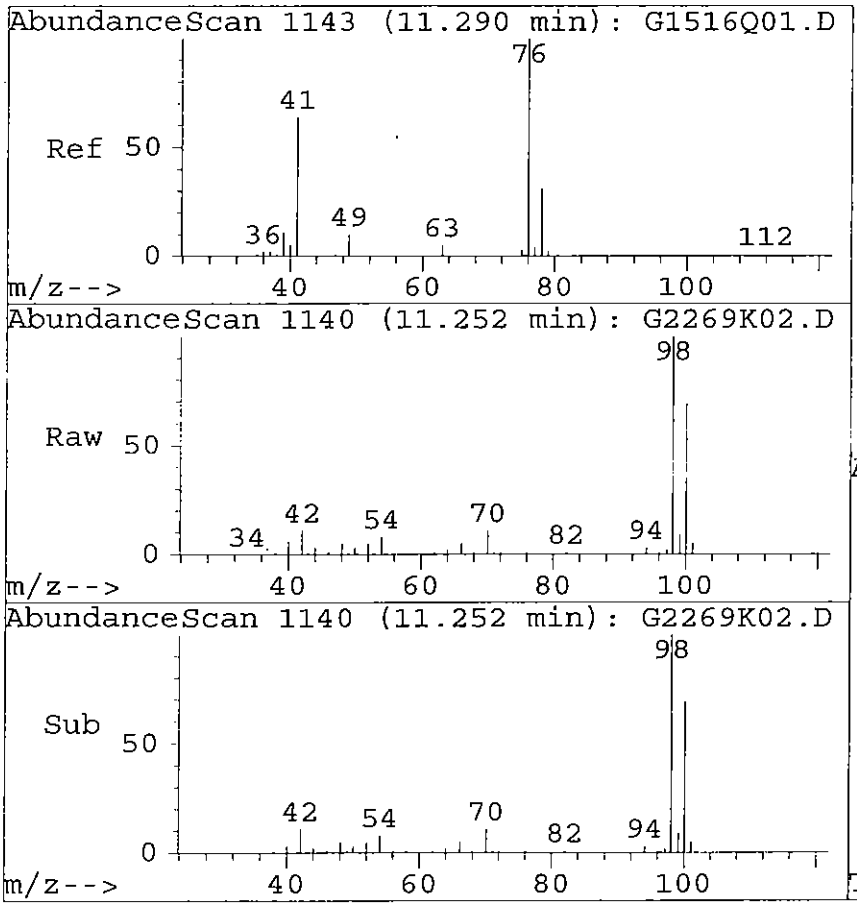


#58
48 112-tri-Cl-Et 97 83
Concen: 2.10 ppb
RT: 11.26 min Scan# 1141
Delta R.T. 0.23 min
Lab File: G2269K02.D
Acq: 30 Apr 03 9:03 pm

Tgt Ion:97 Resp: 20357

Ion	Ratio	Lower	Upper
97	100		
83	0.0	46.0	137.9#
0	0.0	0.0	0.0
0	0.0	0.0	0.0

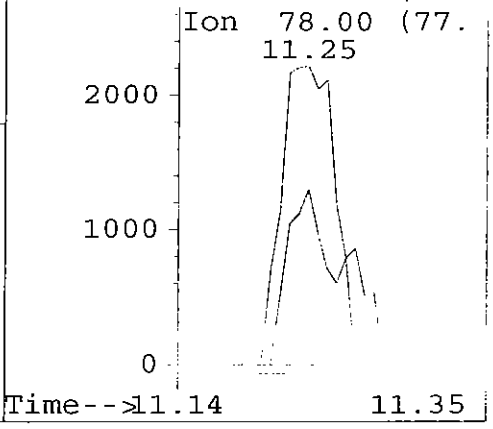




#65
49 1,3-di-cl-propane 76 78
Concen: 0.63 ppb
RT: 11.25 min Scan# 1140
Delta R.T. -0.04 min
Lab File: G2269K02.D
Acq: 30 Apr 03 9:03 pm

Tgt Ion:76 Resp: 7855

Ion	Ratio	Lower	Upper
76	100		
78	42.8	26.5	39.8#
0	0.0	0.0	0.0
0	0.0	0.0	0.0



Applied P & Ch Laboratory

Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/29/2003
Project ID:	JPL	Service ID:	32964	Collected by:	
		Lab Sample ID:	03-2964-1	Received Date:	04/29/2003
Sample ID:	**DUPE-4-2Q03**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	524.2	Prep. Date:	05/01/03	Anal. Date:	05/01/03
Batch No:	03G2269	Prep. No:	–	Anal. Time:	00:53
Data File Name:	2964-01	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	BENZENE	71-43-2	µg/L	0.5	<0.5	U
2	BROMOBENZENE	108-86-1	µg/L	0.5	<0.5	U
3	BROMOCHLOROMETHANE	74-97-5	µg/L	0.5	<0.5	U
4	BROMODICHLOROMETHANE	75-27-4	µg/L	0.5	<0.5	U
5	BROMOFORM	75-25-2	µg/L	0.5	<0.5	U
6	BROMOMETHANE	74-83-9	µg/L	0.5	<0.5	U
7	N-BUTYLBENZENE	104-51-8	µg/L	0.5	<0.5	U
8	SEC-BUTYLBENZENE	135-98-8	µg/L	0.5	<0.5	U
9	TERT-BUTYLBENZENE	98-06-6	µg/L	0.5	<0.5	U
10	2-BUTANONE	78-93-3	µg/L	10	<10	U
11	CARBON TETRACHLORIDE	56-23-5	µg/L	0.5	4.1	
12	CHLOROBENZENE	108-90-7	µg/L	0.5	<0.5	U
13	CHLORODIBROMOMETHANE	124-48-1	µg/L	0.5	<0.5	U
14	CHLOROETHANE	75-00-3	µg/L	0.5	<0.5	U
15	CHLOROFORM	67-66-3	µg/L	0.5	2.3	
16	CHLOROMETHANE	74-87-3	µg/L	0.5	<0.5	U
17	2-CHLOROTOLUENE	95-49-8	µg/L	0.5	<0.5	U
18	4-CHLOROTOLUENE	106-43-4	µg/L	0.5	<0.5	U
19	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	µg/L	1.1 (a)	<1.1	U
20	1,2-DIBROMOETHANE (EDB)	106-93-4	µg/L	0.5	<0.5	U
21	DIBROMOMETHANE	74-95-3	µg/L	0.5	<0.5	U
22	1,2-DICHLOROBENZENE	95-50-1	µg/L	0.5	<0.5	U
23	1,3-DICHLOROBENZENE	541-73-1	µg/L	0.5	<0.5	U
24	1,4-DICHLOROBENZENE	106-46-7	µg/L	0.5	<0.5	U
25	DICHLORODIFLUOROMETHANE	75-71-8	µg/L	0.5	<0.5	U
26	1,1-DICHLOROETHANE	75-34-3	µg/L	0.5	<0.5	U
27	1,2-DICHLOROETHANE	107-06-2	µg/L	0.5	<0.5	U
28	1,1-DICHLOROETHENE	75-35-4	µg/L	0.5	<0.5	U
29	CIS-1,2-DICHLOROETHENE	156-59-2	µg/L	0.5	<0.5	U
30	TRANS-1,2-DICHLOROETHENE	156-60-5	µg/L	0.5	<0.5	U
31	1,2-DICHLOROPROPANE	78-87-5	µg/L	0.5	<0.5	U
32	1,3-DICHLOROPROPANE	142-28-9	µg/L	0.5	<0.5	U
33	2,2-DICHLOROPROPANE	594-20-7	µg/L	0.5	<0.5	U
34	1,1-DICHLOROPROPENE	563-58-6	µg/L	0.5	<0.5	U
35	CIS-1,3-DICHLOROPROPENE	10061-01-5	µg/L	0.5	<0.5	U
36	TRANS-1,3-DICHLOROPROPENE	10061-02-6	µg/L	0.5	<0.5	U
37	ETHYLBENZENE	100-41-4	µg/L	0.5	<0.5	U
38	HEXACHLOROBUTADIENE	87-68-3	µg/L	0.5	<0.5	U
39	ISOPROPYLBENZENE (CUMENE)	98-82-8	µg/L	0.5	<0.5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	P-ISOPROPYLTOLUENE	99-87-6	µg/L	0.5	<0.5	U
41	METHYLENE CHLORIDE	75-09-2	µg/L	1.8 [a]	2.5	
42	METHYL-T-BUTYL ETHER (MTBE)	1634-04-4	µg/L	1	<1	U
43	4-METHYL-2-PENTANONE (MIBK)	108-10-1	µg/L	10	5	J
44	NAPHTHALENE	91-20-3	µg/L	0.5	<0.5	U
45	N-PROPYLBENZENE	103-65-1	µg/L	0.5	<0.5	U
46	STYRENE	100-42-5	µg/L	0.5	<0.5	U
47	1,1,1,2-TETRACHLOROETHANE	630-20-6	µg/L	0.5	<0.5	U
48	1,1,2,2-TETRACHLOROETHANE	79-34-5	µg/L	0.5	<0.5	U
49	TETRACHLOROETHENE	127-18-4	µg/L	0.5	<0.5	U
50	TOLUENE	108-88-3	µg/L	0.5	<0.5	U
51	1,2,3-TRICHLOROBENZENE	87-61-6	µg/L	0.5	<0.5	U
52	1,2,4-TRICHLOROBENZENE	120-82-1	µg/L	0.5	<0.5	U
53	1,1,1-TRICHLOROETHANE	71-55-6	µg/L	0.5	<0.5	U
54	1,1,2-TRICHLOROETHANE	79-00-5	µg/L	0.5	<0.5	U
55	TRICHLOROETHENE	79-01-6	µg/L	0.5	0.8	
56	TRICHLOROFLUOROMETHANE	75-69-4	µg/L	0.5	<0.5	U
57	1,2,3-TRICHLOROPROPANE	96-18-4	µg/L	0.5	<0.5	U
58	112TRICHLORO-122TRIFLUOROETHANE	76-13-1	µg/L	0.5	<0.5	U
59	1,2,4-TRIMETHYLBENZENE	95-63-6	µg/L	0.5	<0.5	U
60	1,3,5-TRIMETHYLBENZENE	108-67-8	µg/L	0.5	<0.5	U
61	VINYL CHLORIDE	75-01-4	µg/L	0.5	<0.5	U
62	O-XYLENE	95-47-6	µg/L	0.5	<0.5	U
63	M/P-XYLENE	108-38-3	µg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	1-BROMO-4-FLUOROBENZENE (4-BROMOFL	460-00-4	70-129	105
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	87
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	92
4	TOLUENE-D8	2037-26-5	73-129	104
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	CHLOROBENZENE-D5	3114-55-4	50-200	102
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	96
3	FLUOROBENZENE	462-06-6	50-200	103
# of out-of-control				0

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

[a] MDL reported.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Quantitation Report: **Applied P &Ch Lab** EPA 524.2

4918

Data Filename: C:\HPCHEM\1\DATA\03G2269\2964-01.D
Method : C:\HPCHEM\1\METHODS\E524G003.M
Acq. Time : May 1 00:53 2003
Method Update: Mon Jan 13 10:38 2003
Quant. Time : May 01 01:13 2003
Print Time : Thu May 01 09:24 2003
Miscleneous :

Sample : f=1 8
Inst. : GCMS-G
RF via : Multiple Level Calibration
Operator: Eddie
Multiplr: 1.000000

ID	Component Name	R.T.	RT0	DRRT	QIon	Q1	RF/1000	C0,ppb	C,ppb	Quality	Note
Internal Standards										Dev(Min)	
1	1 Fluorobenzene I1	9.11	9.03	0.008	96	70	785.372	10.00		0.07	
47	47 Cl-benzene-d5, I2	12.74	12.66	0.006	82	119	227.250	10.00		0.08	
62	62 1,4-DCB-d4 150 15	15.25	15.15	0.007	152	150	180.327	10.00		0.10	
System Monitoring Compounds (Surrogate)										%Recovery	
27	27 Di-Br-F-Methane (	7.51	7.44	0.005	111	113	512.334	18.40	18.4	92.00%	
29	29 1,2-di-Cl-ethane-	8.10	8.02	0.005	65	102	226.052	17.42	17.4	87.10%	
55	55 toluene-d8(S2)	11.24	11.15	0.006	100	99	818.613	20.87	20.9	104.33%	
70	70 4-Br-1-F-Bz (S3)	13.99	13.90	0.006	174	95	339.440	21.07	21.1	105.34%	
Target Compounds										Qvalue	
<<< I1 : ISTD ID = 1 >>>											
111	111 isopropyl alcoho	4.28	4.27	0.000	45	43	2.117	5.97	~~6.0~~	~~1~~	#
119	119 methyl acetate	5.08	5.06	0.002	43	74	2.901	0.56	~~0.6~~	~~56~~	#
18	18 methylene chlorid	5.02	4.97	0.006	84	49	133.373	2.50	2.5	99	
91	91 2-butanone MEKx10	6.80	6.83	-0.003	43	72	17.105	2.32	~~2.3~~	~~74~~	#
25	25 chloroform	7.33	7.27	0.007	83	85	95.945	2.33	2.3	97	
117	117 Iso-butyl alcoho	7.29	7.31	-0.002	43	42	0.813	0.39	~~0.4~~	~~1~~	#
37	37 CCl4	8.77	8.68	0.009	117	119	106.846	4.06	4.1	99	?
97	97 thiophene	8.77	8.89	-0.014	84	58	17.215	0.51	~~0.5~~	~~30~~	#?
40	40 trichloroethene	9.61	9.54	0.008	130	132	17.471	0.83	0.8	96	
93	93 2-Hexanone x5	11.47	11.48	-0.001	43	58	1.556	0.35	~~0.3~~	~~24~~	#
48	48 112-tri-Cl-Et	11.25	11.03	0.024	97	83	25.952	2.54	~~2.5~~	~~4~~	#?
<<< I2 : ISTD ID = 47 >>>											
54	54 MIBK	10.61	10.52	0.007	43	58	36.875	4.71	4.7	97	
49	49 1,3-di-cl-propane	11.25	11.29	-0.003	76	78	9.507	0.64	0.6	83	#?

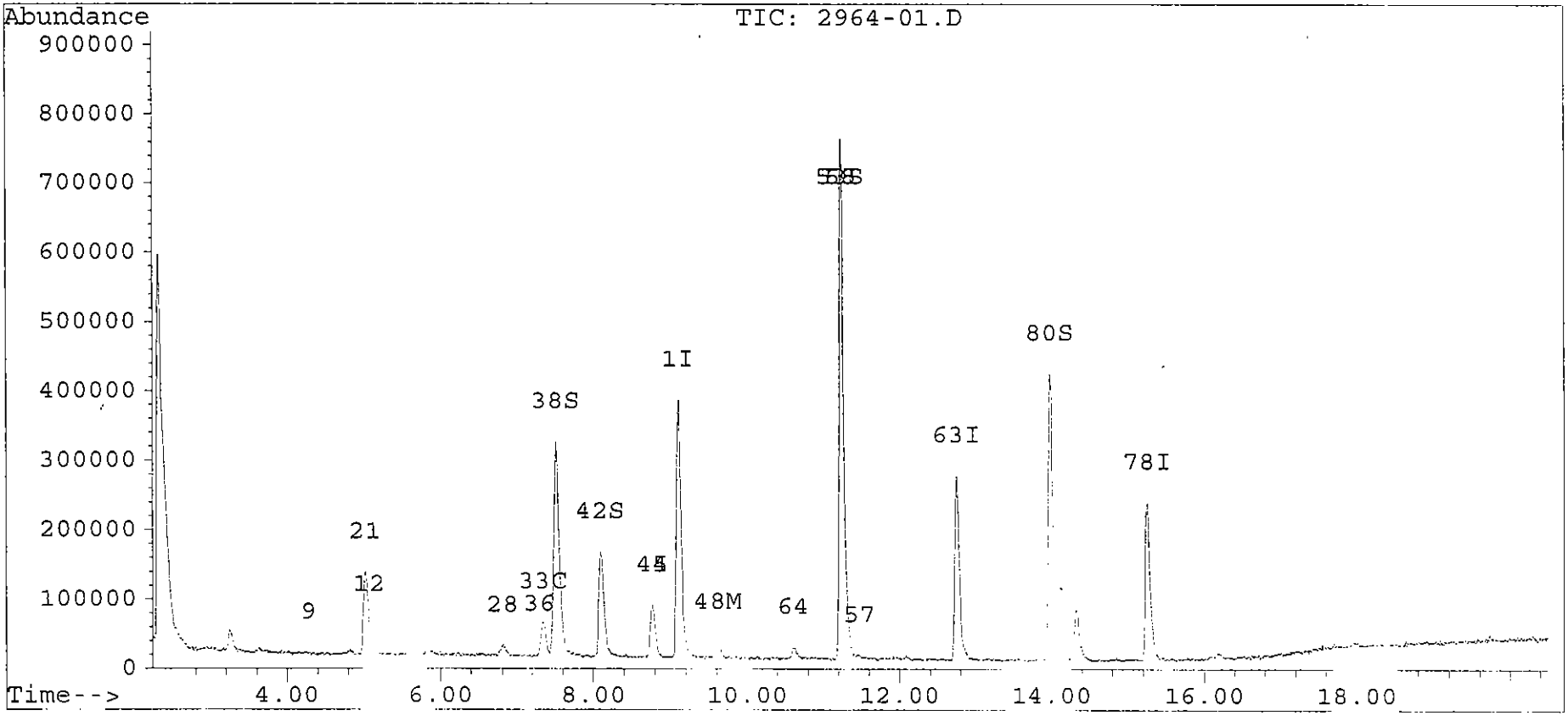
= qualifier out of range, m = manual integration, ? = RT coelution, * = DRRT > 0.06

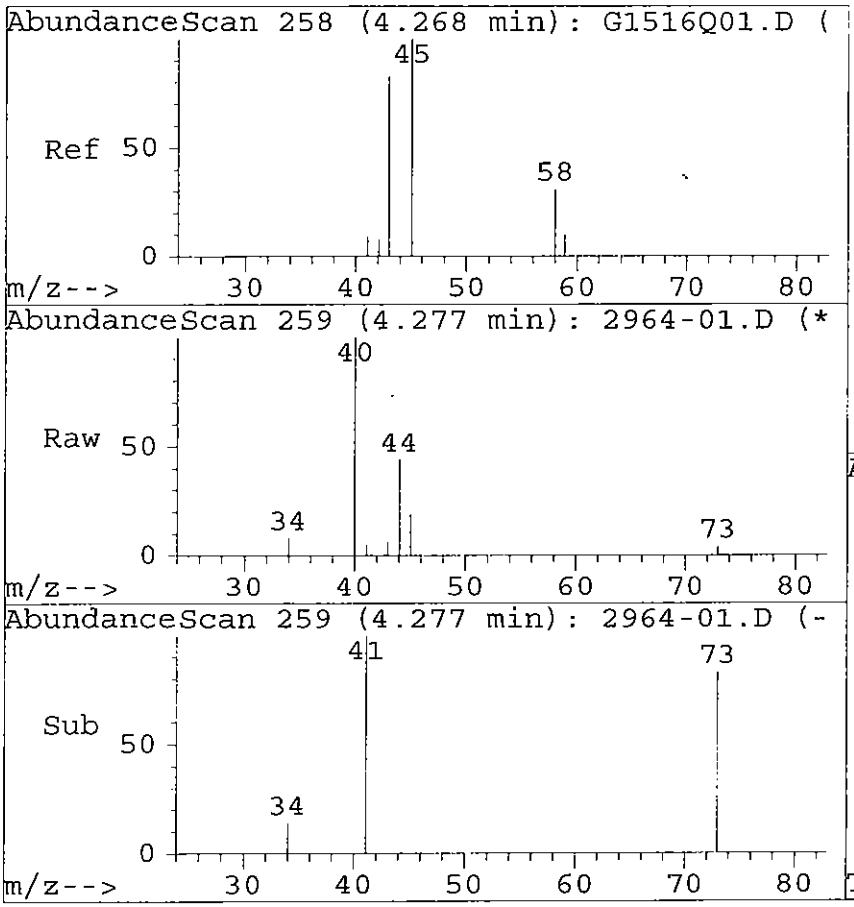
Quantitation Report

Data File : C:\HPCHEM\1\DATA\03G2269\2964-01.D Vial: 20
Acq On : 1 May 03 12:53 am Operator: Eddie
Sample : f=1 8 Inst : GCMS-G
Misc : Multiplr: 1.00
Quant Time: May 1 1:13 2003 Quant Results File: quant.res

4919

Method : C:\HPCHEM\1\METHODS\E524G003.M
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Jan 13 10:38:23 2003
Response via : Multiple Level Calibration

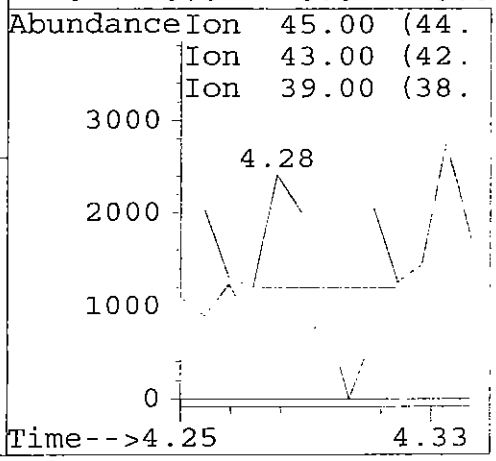


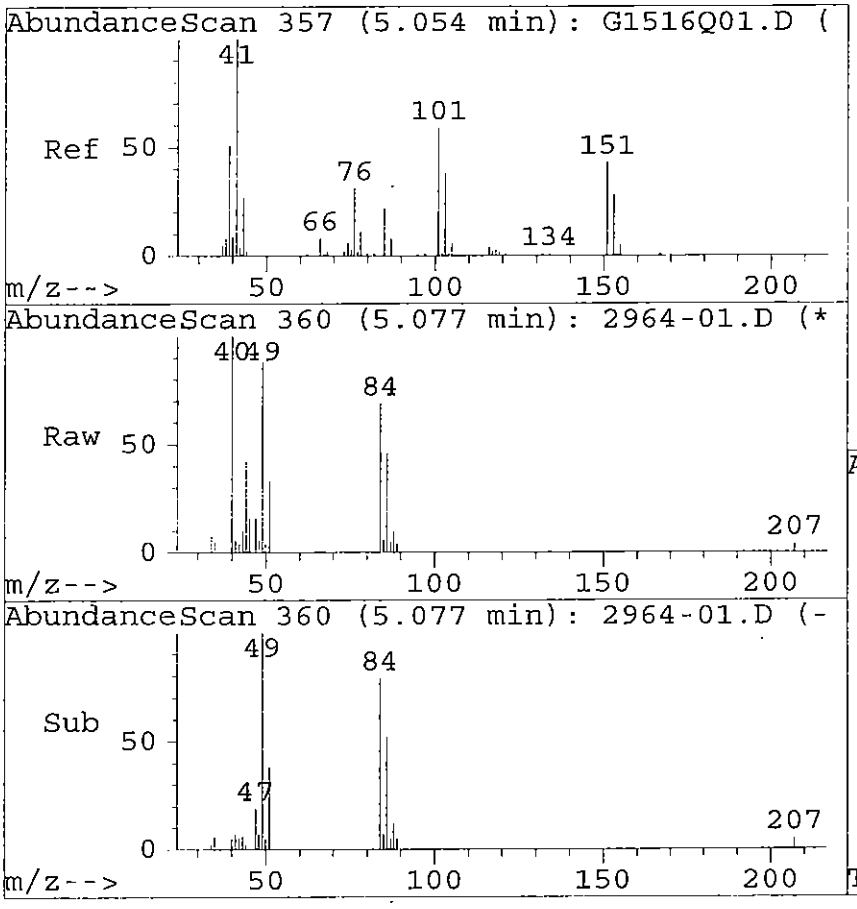


#9
111 isopropyl alcohol x10
Concen: 5.97 ppb
RT: 4.28 min Scan# 259
Delta R.T. 0.01 min
Lab File: 2964-01.D
Acq: 1 May 03 12:53 am

Tgt Ion:45 Resp: 2117

Ion	Ratio	Lower	Upper
45	100		
43	138.9	395.5	593.2#
39	0.0	28.3	42.4#
0	0.0	0.0	0.0

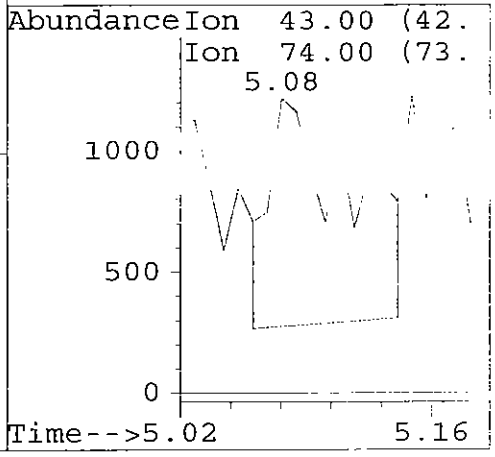


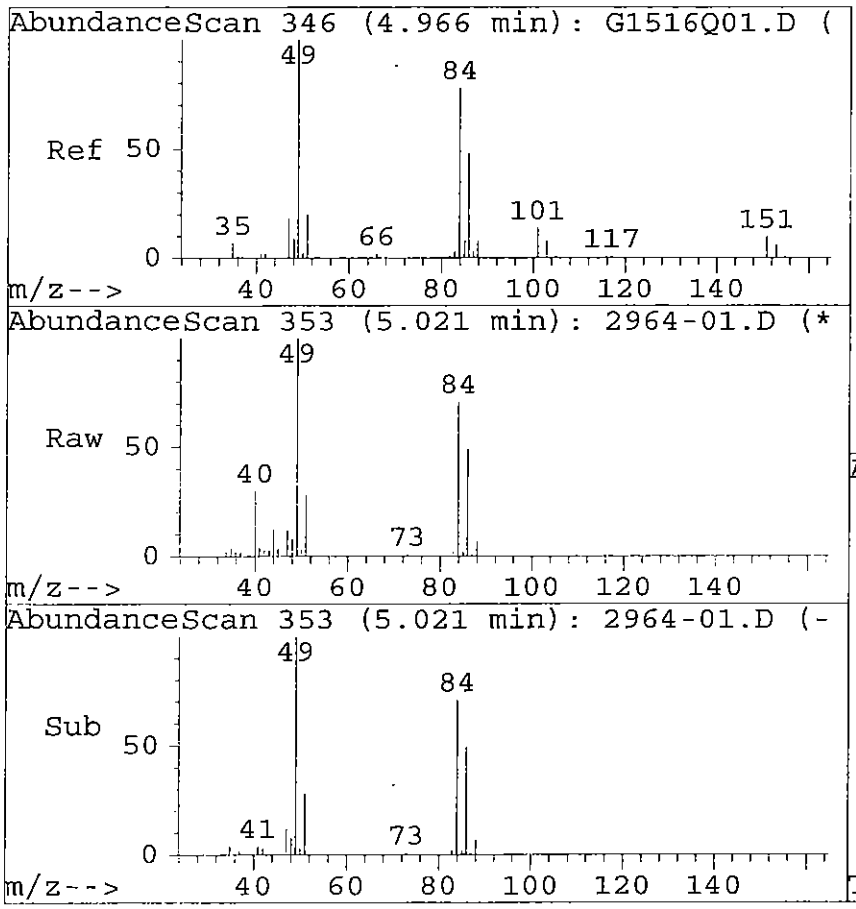


#12
119 methyl acetate
Concen: 0.56 ppb
RT: 5.08 min Scan# 360
Delta R.T. 0.02 min
Lab File: 2964-01.D
Acq: 1 May 03 12:53 am

Tgt Ion:43 Resp: 2901

Ion	Ratio	Lower	Upper
43	100		
74	0.0	0.6	40.6#
0	0.0	0.0	0.0
0	0.0	0.0	0.0

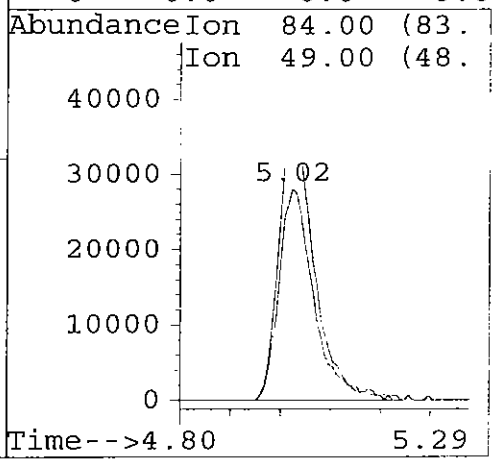


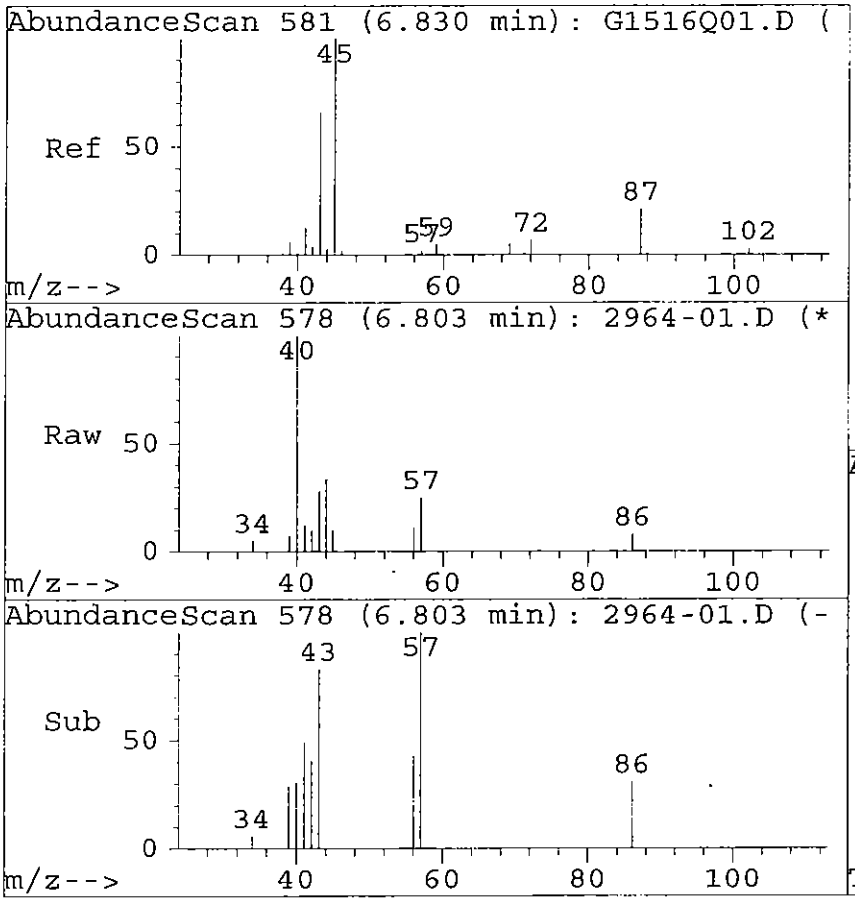


#21
18 methylene chloride 49 84
Concen: 2.50 ppb
RT: 5.02 min Scan# 353
Delta R.T. 0.05 min
Lab File: 2964-01.D
Acq: 1 May 03 12:53 am

Tgt Ion:84 Resp: 133373

Ion	Ratio	Lower	Upper
84	100		
49	134.2	66.5	199.4
0	0.0	0.0	0.0
0	0.0	0.0	0.0

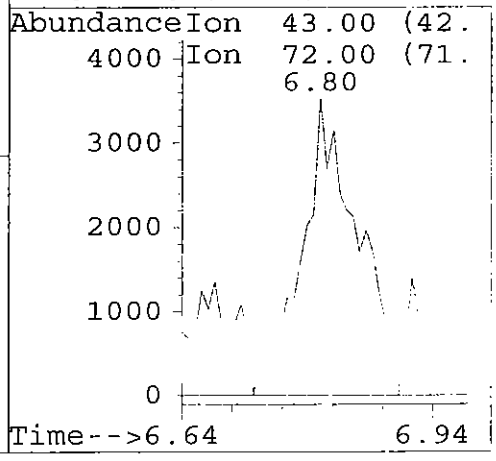


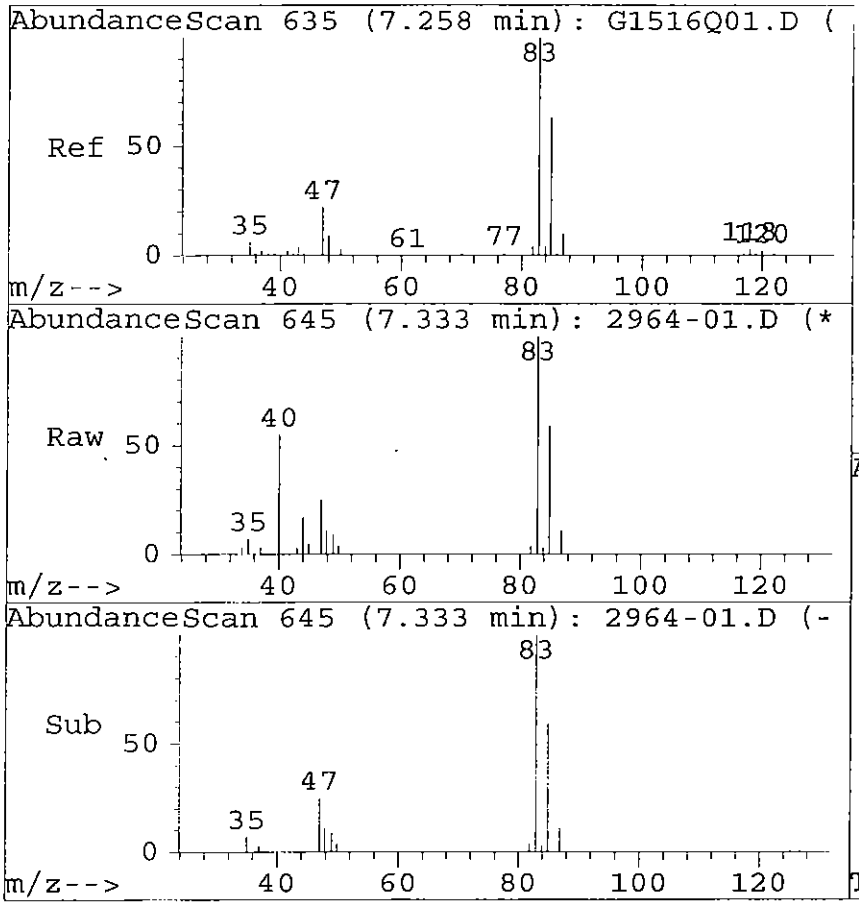


#28
91 2-butanone MEKx10
Concen: 2.32 ppb
RT: 6.80 min Scan# 578
Delta R.T. -0.03 min
Lab File: 2964-01.D
Acq: 1 May 03 12:53 am

Tgt Ion:43 Resp: 17105

Ion	Ratio	Lower	Upper
43	100		
72	0.0	7.7	11.6#
0	0.0	0.0	0.0
0	0.0	0.0	0.0

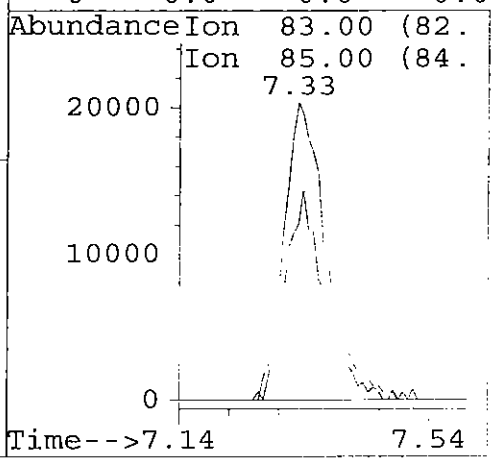


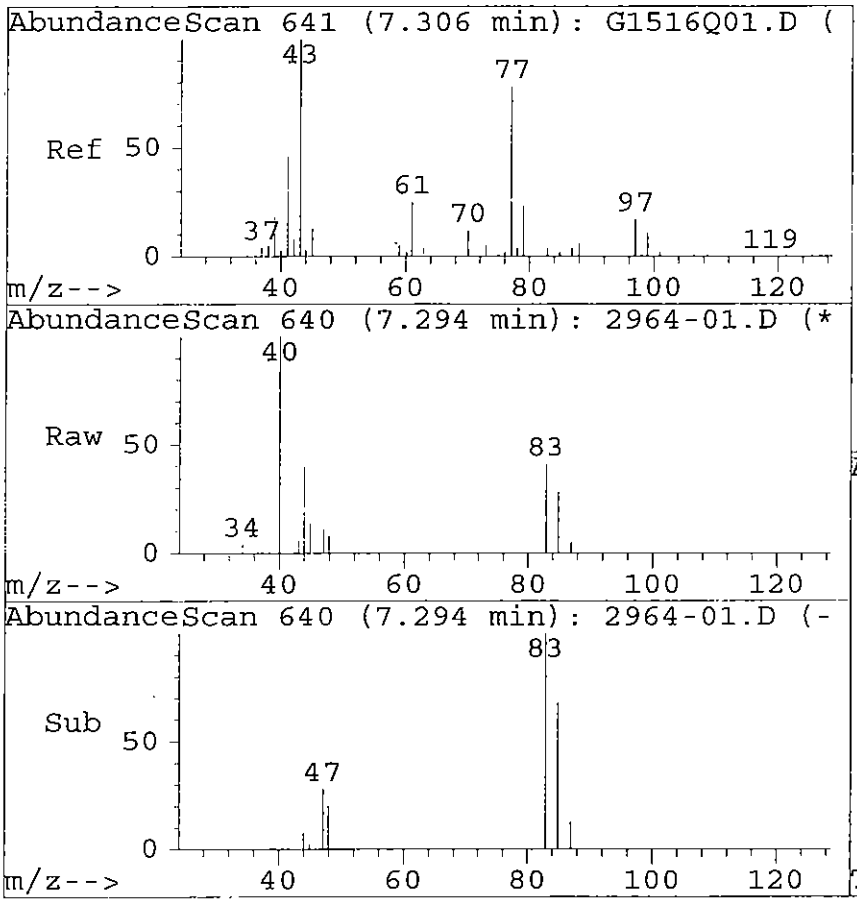


#33
25 chloroform 83 85
Concen: 2.33 ppb
RT: 7.33 min Scan# 645
Delta R.T. 0.06 min
Lab File: 2964-01.D
Acq: 1 May 03 12:53 am

Tgt Ion:83 Resp: 95945

Ion	Ratio	Lower	Upper
83	100		
85	63.3	32.8	98.3
0	0.0	0.0	0.0
0	0.0	0.0	0.0

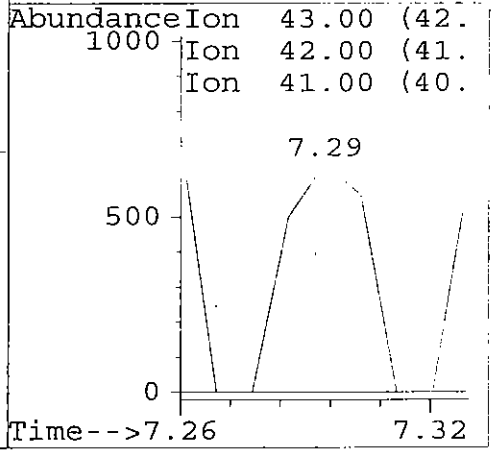


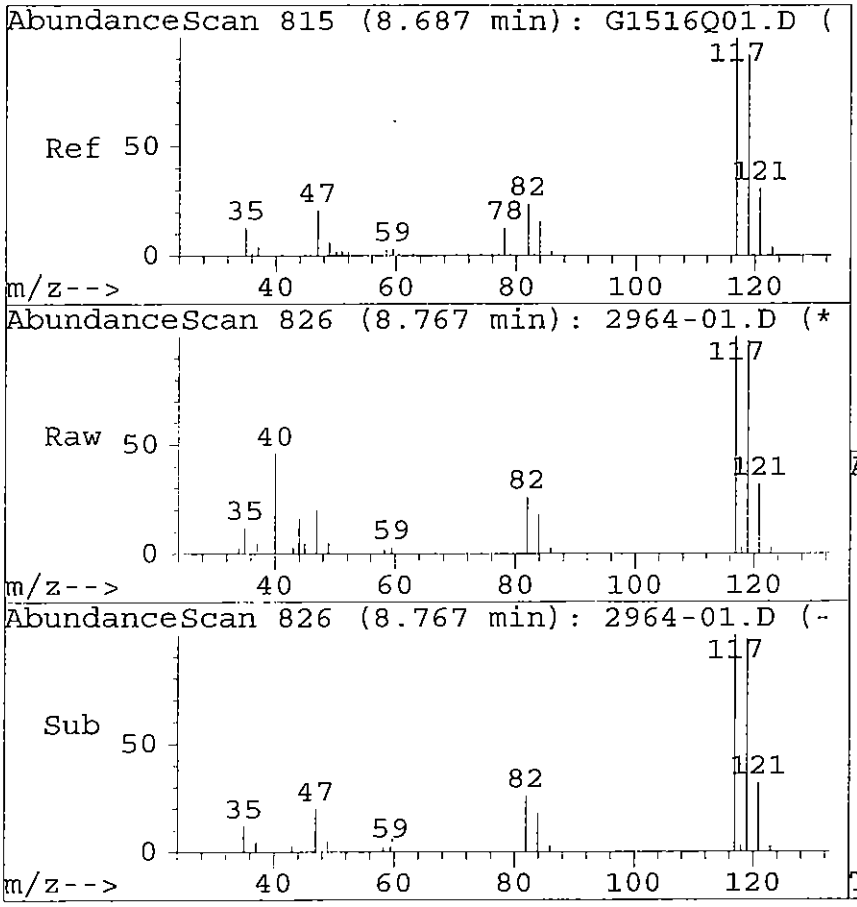


#36
117 Iso-butyl alcohol X10
Concen: 0.39 ppb
RT: 7.29 min Scan# 640
Delta R.T. -0.02 min
Lab File: 2964-01.D
Acq: 1 May 03 12:53 am

Tgt Ion:43 Resp: 813

Ion	Ratio	Lower	Upper
43	100		
42	0.0	21.1	31.6#
41	0.0	161.8	242.7#
0	0.0	0.0	0.0

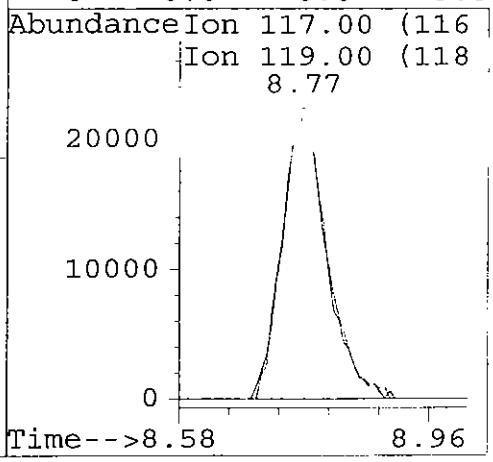


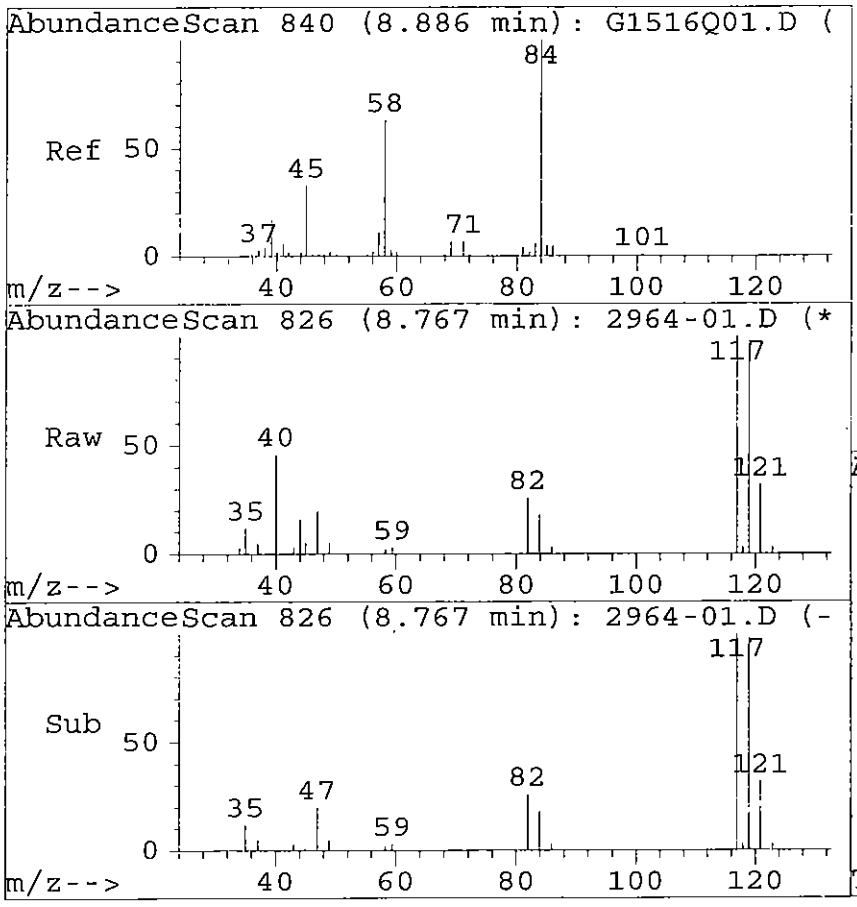


#44
37 CCl4 117 119
Concen: 4.06 ppb
RT: 8.77 min Scan# 826
Delta R.T. 0.08 min
Lab File: 2964-01.D
Acq: 1 May 03 12:53 am

Tgt Ion:117 Resp: 106846

Ion	Ratio	Lower	Upper
117	100		
119	97.4	76.8	116.8
0	0.0	0.0	0.0
0	0.0	0.0	0.0

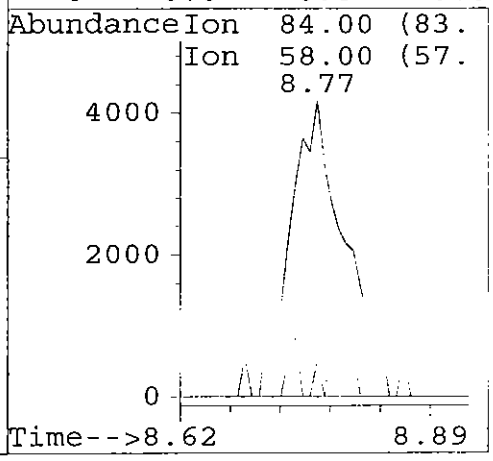


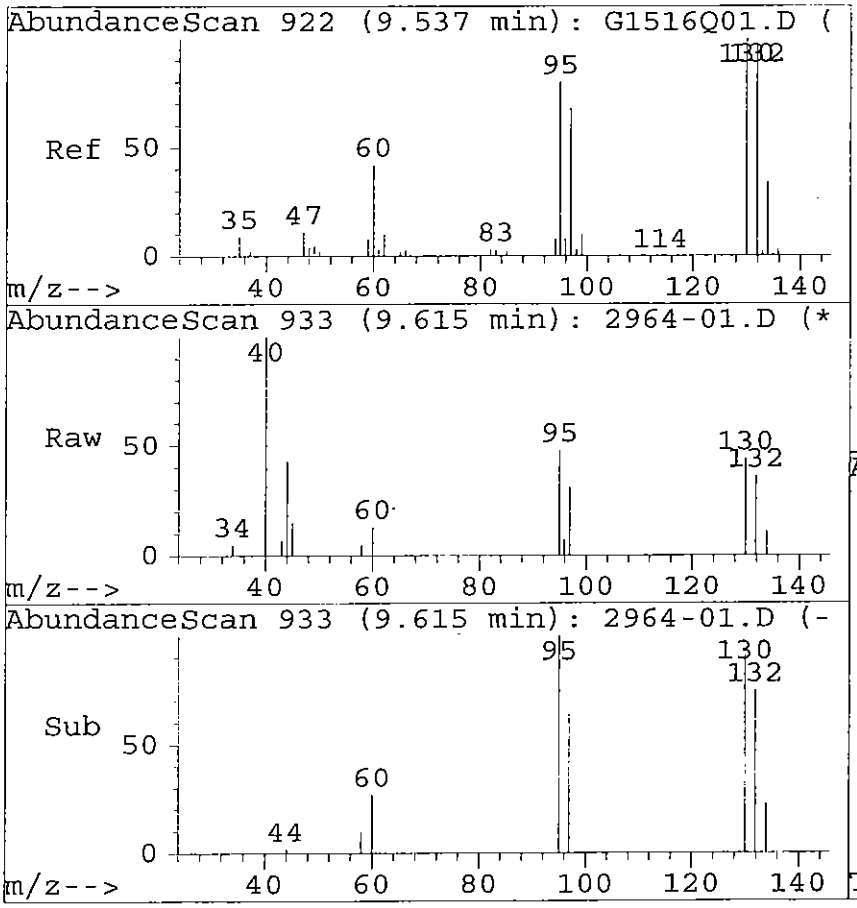


#45
97 thiophene
Concen: 0.51 ppb
RT: 8.77 min Scan# 826
Delta R.T. -0.12 min
Lab File: 2964-01.D
Acq: 1 May 03 12:53 am

Tgt Ion:84 Resp: 17215

Ion	Ratio	Lower	Upper
84	100		
58	8.4	50.5	75.8#
0	0.0	0.0	0.0
0	0.0	0.0	0.0

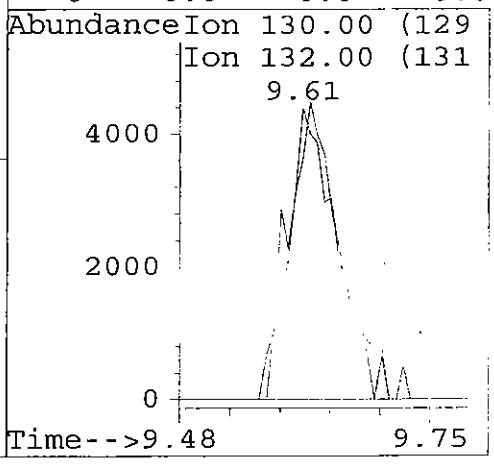


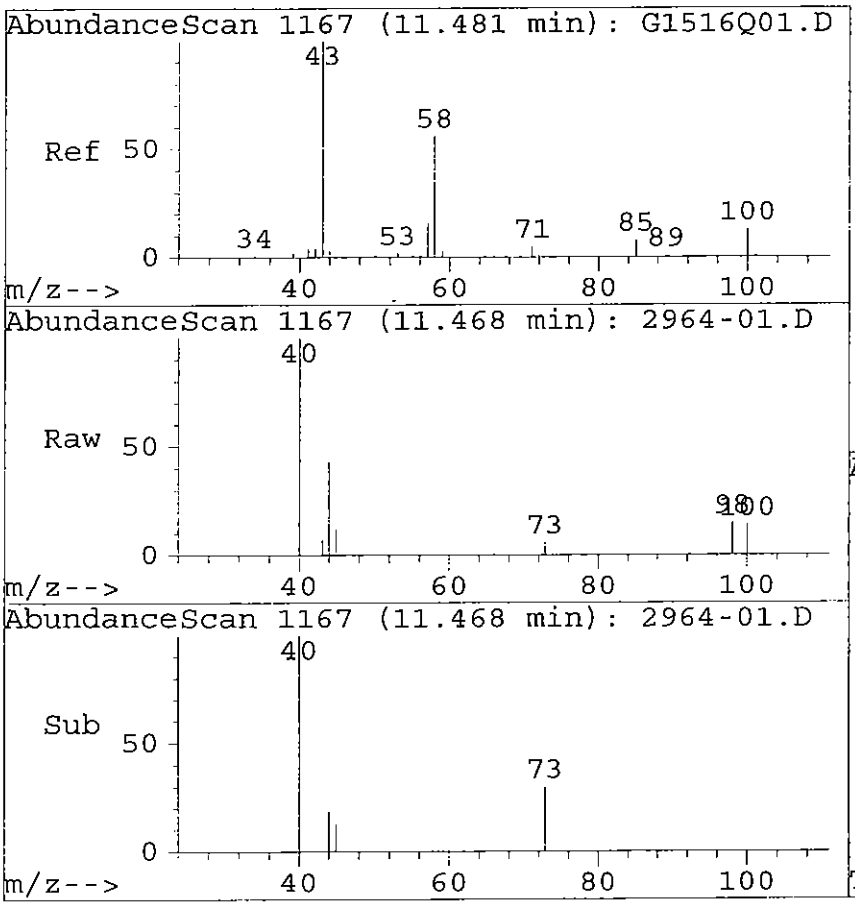


#48
40 trichloroethene 130 132
Concen: 0.83 ppb
RT: 9.61 min Scan# 933
Delta R.T. 0.07 min
Lab File: 2964-01.D
Acq: 1 May 03 12:53 am

Tgt Ion:130 Resp: 17471

Ion	Ratio	Lower	Upper
130	100		
132	93.4	48.8	146.3
0	0.0	0.0	0.0
0	0.0	0.0	0.0

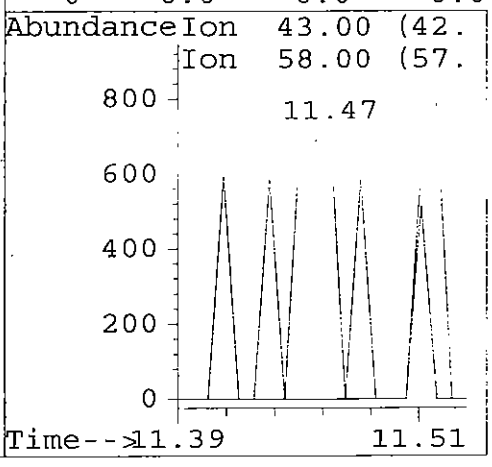


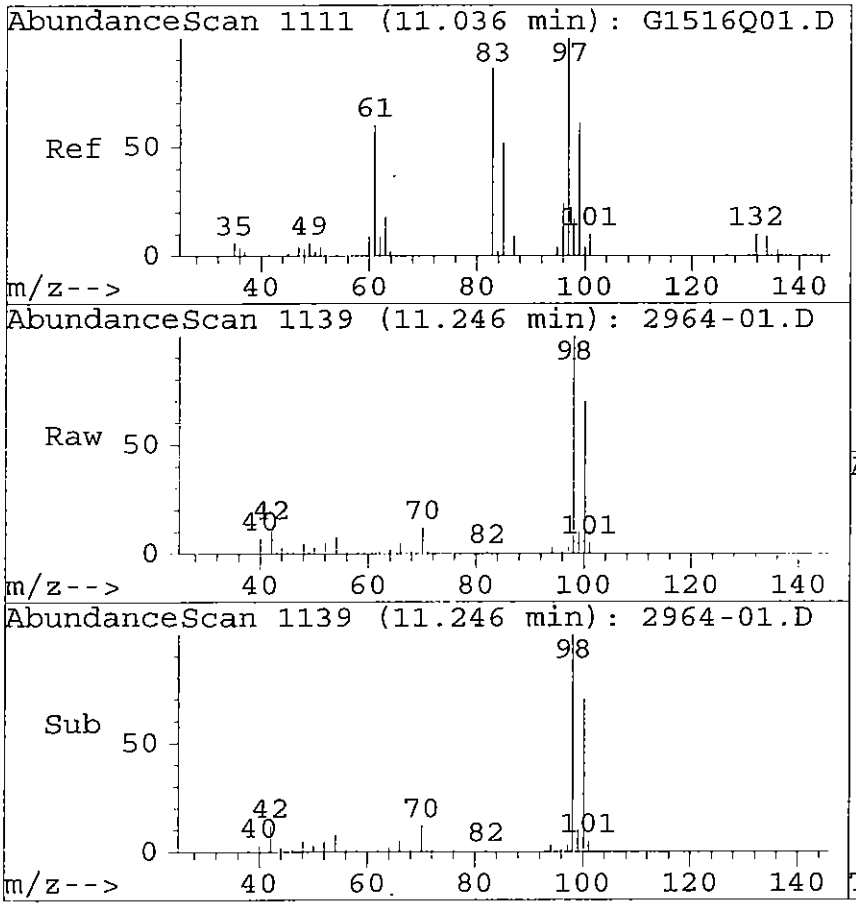


#57
93 2-Hexanone x5
Concen: 0.35 ppb
RT: 11.47 min Scan# 1167
Delta R.T. -0.01 min
Lab File: 2964-01.D
Acq: 1 May 03 12:53 am

Tgt Ion:43 Resp: 1556

Ion	Ratio	Lower	Upper
43	100		
58	0.0	44.5	66.7#
0	0.0	0.0	0.0
0	0.0	0.0	0.0

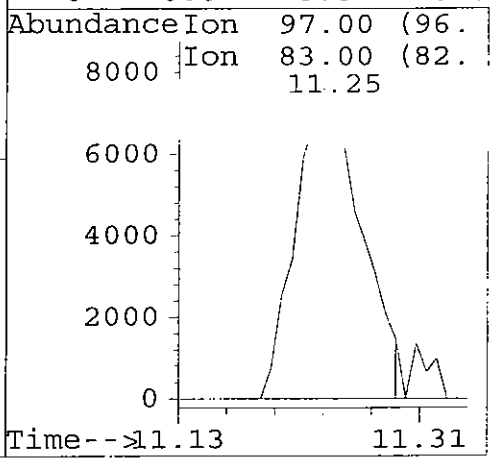


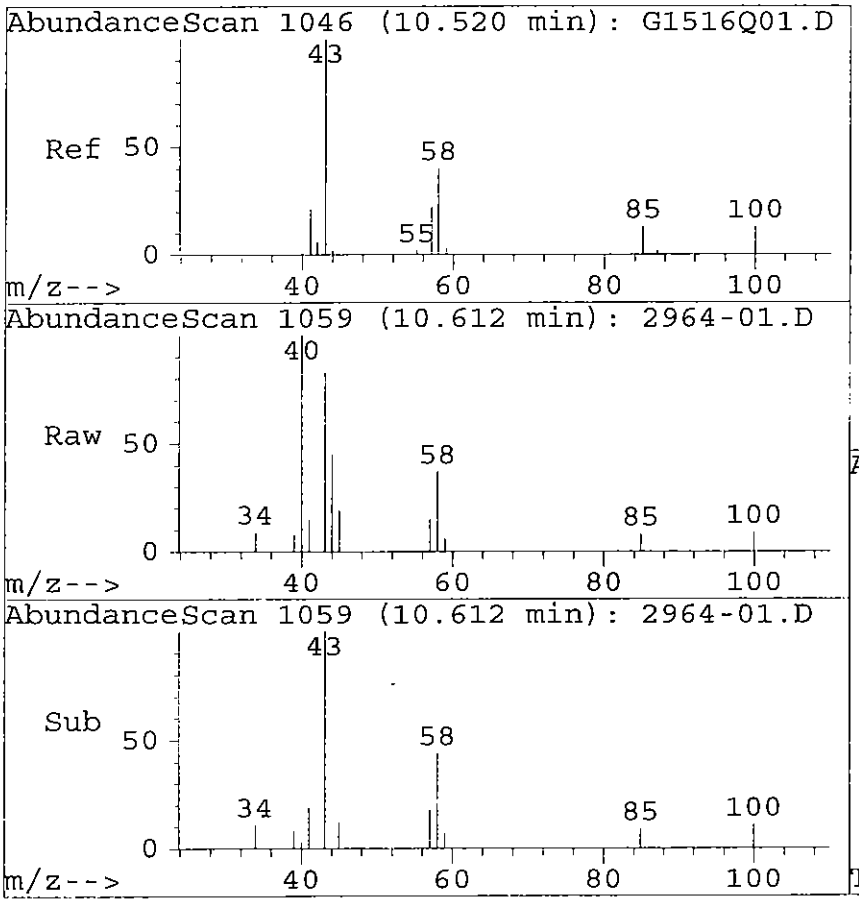


#58
48 112-tri-Cl-Et 97 83
Concen: 2.54 ppb
RT: 11.25 min Scan# 1139
Delta R.T. 0.22 min
Lab File: 2964-01.D
Acq: 1 May 03 12:53 am

Tgt Ion:97 Resp: 25952

Ion	Ratio	Lower	Upper
97	100		
83	0.0	46.0	137.9#
0	0.0	0.0	0.0
0	0.0	0.0	0.0

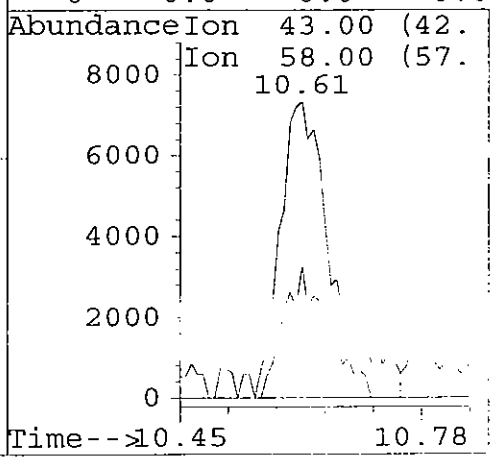


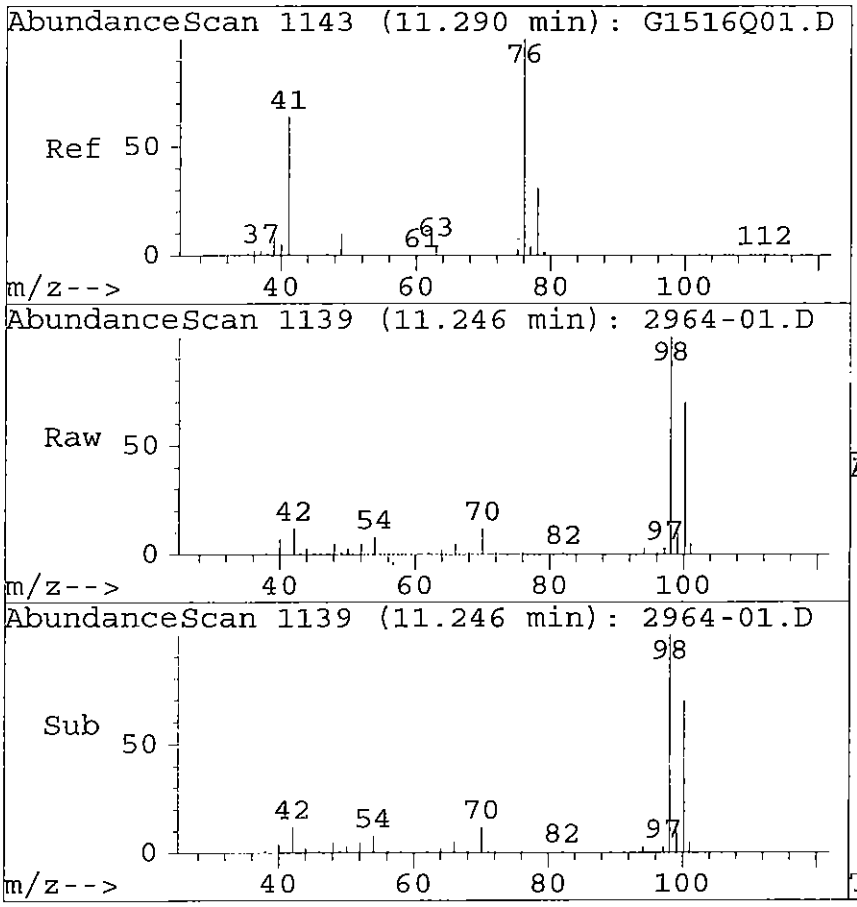


#64
54 MIBK
Concen: 4.71 ppb
RT: 10.61 min Scan# 1059
Delta R.T. 0.09 min
Lab File: 2964-01.D
Acq: 1 May 03 12:53 am

Tgt Ion:43 Resp: 36875

Ion	Ratio	Lower	Upper
43	100		
58	36.8	18.9	58.9
0	0.0	0.0	0.0
0	0.0	0.0	0.0

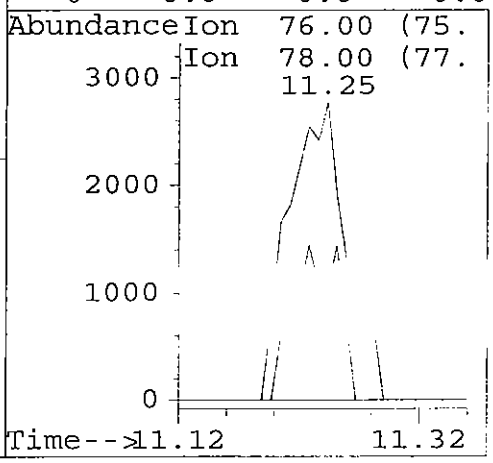




#65
49 1,3-di-cl-propane 76 78
Concen: 0.64 ppb
RT: 11.25 min Scan# 1139
Delta R.T. -0.04 min
Lab File: 2964-01.D
Acq: 1 May 03 12:53 am

Tgt Ion:76 Resp: 9507

Ion	Ratio	Lower	Upper
76	100		
78	42.6	26.5	39.8#
0	0.0	0.0	0.0
0	0.0	0.0	0.0



Applied P & Ch Laboratory

Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/29/2003
Project ID:	JPL	Service ID:	32964	Collected by:	
		Lab Sample ID:	03-2964-2	Received Date:	04/29/2003
Sample ID:	**EB-7-4/29/03**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	524.2	Prep. Date:	05/01/03	Anal. Date:	05/01/03
Batch No:	03G2269	Prep. No:	–	Anal. Time:	01:21
Data File Name:	2964-02	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	BENZENE	71-43-2	µg/L	0.5	<0.5	U
2	BROMOBENZENE	108-86-1	µg/L	0.5	<0.5	U
3	BROMOCHLOROMETHANE	74-97-5	µg/L	0.5	<0.5	U
4	BROMODICHLOROMETHANE	75-27-4	µg/L	0.5	<0.5	U
5	BROMOFORM	75-25-2	µg/L	0.5	<0.5	U
6	BROMOMETHANE	74-83-9	µg/L	0.5	<0.5	U
7	N-BUTYLBENZENE	104-51-8	µg/L	0.5	<0.5	U
8	SEC-BUTYLBENZENE	135-98-8	µg/L	0.5	<0.5	U
9	TERT-BUTYLBENZENE	98-06-6	µg/L	0.5	<0.5	U
10	2-BUTANONE	78-93-3	µg/L	10	<10	U
11	CARBON TETRACHLORIDE	56-23-5	µg/L	0.5	<0.5	U
12	CHLOROBENZENE	108-90-7	µg/L	0.5	<0.5	U
13	CHLORODIBROMOMETHANE	124-48-1	µg/L	0.5	<0.5	U
14	CHLOROETHANE	75-00-3	µg/L	0.5	<0.5	U
15	CHLOROFORM	67-66-3	µg/L	0.5	<0.5	U
16	CHLOROMETHANE	74-87-3	µg/L	0.5	<0.5	U
17	2-CHLOROTOLUENE	95-49-8	µg/L	0.5	<0.5	U
18	4-CHLOROTOLUENE	106-43-4	µg/L	0.5	<0.5	U
19	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	µg/L	1.1 (a)	<1.1	U
20	1,2-DIBROMOETHANE (EDB)	106-93-4	µg/L	0.5	<0.5	U
21	DIBROMOMETHANE	74-95-3	µg/L	0.5	<0.5	U
22	1,2-DICHLOROBENZENE	95-50-1	µg/L	0.5	<0.5	U
23	1,3-DICHLOROBENZENE	541-73-1	µg/L	0.5	<0.5	U
24	1,4-DICHLOROBENZENE	106-46-7	µg/L	0.5	<0.5	U
25	DICHLORODIFLUOROMETHANE	75-71-8	µg/L	0.5	<0.5	U
26	1,1-DICHLOROETHANE	75-34-3	µg/L	0.5	<0.5	U
27	1,2-DICHLOROETHANE	107-06-2	µg/L	0.5	<0.5	U
28	1,1-DICHLOROETHENE	75-35-4	µg/L	0.5	<0.5	U
29	CIS-1,2-DICHLOROETHENE	156-59-2	µg/L	0.5	<0.5	U
30	TRANS-1,2-DICHLOROETHENE	156-60-5	µg/L	0.5	<0.5	U
31	1,2-DICHLOROPROPANE	78-87-5	µg/L	0.5	<0.5	U
32	1,3-DICHLOROPROPANE	142-28-9	µg/L	0.5	<0.5	U
33	2,2-DICHLOROPROPANE	594-20-7	µg/L	0.5	<0.5	U
34	1,1-DICHLOROPROPENE	563-58-6	µg/L	0.5	<0.5	U
35	CIS-1,3-DICHLOROPROPENE	10061-01-5	µg/L	0.5	<0.5	U
36	TRANS-1,3-DICHLOROPROPENE	10061-02-6	µg/L	0.5	<0.5	U
37	ETHYLBENZENE	100-41-4	µg/L	0.5	<0.5	U
38	HEXACHLOROBUTADIENE	87-68-3	µg/L	0.5	<0.5	U
39	ISOPROPYLBENZENE (CUMENE)	98-82-8	µg/L	0.5	<0.5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	P-ISOPROPYLTOLUENE	99-87-6	µg/L	0.5	<0.5	U
41	METHYLENE CHLORIDE	75-09-2	µg/L	1.8 [a]	<1.8	U
42	METHYL-T-BUTYL ETHER (MTBE)	1634-04-4	µg/L	1	<1	U
43	4-METHYL-2-PENTANONE (MIBK)	108-10-1	µg/L	10	4	J
44	NAPHTHALENE	91-20-3	µg/L	0.5	<0.5	U
45	N-PROPYLBENZENE	103-65-1	µg/L	0.5	<0.5	U
46	STYRENE	100-42-5	µg/L	0.5	<0.5	U
47	1,1,1,2-TETRACHLOROETHANE	630-20-6	µg/L	0.5	<0.5	U
48	1,1,2,2-TETRACHLOROETHANE	79-34-5	µg/L	0.5	<0.5	U
49	TETRACHLOROETHENE	127-18-4	µg/L	0.5	<0.5	U
50	TOLUENE	108-88-3	µg/L	0.5	<0.5	U
51	1,2,3-TRICHLOROBENZENE	87-61-6	µg/L	0.5	<0.5	U
52	1,2,4-TRICHLOROBENZENE	120-82-1	µg/L	0.5	<0.5	U
53	1,1,1-TRICHLOROETHANE	71-55-6	µg/L	0.5	<0.5	U
54	1,1,2-TRICHLOROETHANE	79-00-5	µg/L	0.5	<0.5	U
55	TRICHLOROETHENE	79-01-6	µg/L	0.5	<0.5	U
56	TRICHLOROFLUOROMETHANE	75-69-4	µg/L	0.5	<0.5	U
57	1,2,3-TRICHLOROPROPANE	96-18-4	µg/L	0.5	<0.5	U
58	112TRICHLORO-122TRIFLUOROETHANE	76-13-1	µg/L	0.5	<0.5	U
59	1,2,4-TRIMETHYLBENZENE	95-63-6	µg/L	0.5	<0.5	U
60	1,3,5-TRIMETHYLBENZENE	108-67-8	µg/L	0.5	<0.5	U
61	VINYL CHLORIDE	75-01-4	µg/L	0.5	<0.5	U
62	O-XYLENE	95-47-6	µg/L	0.5	<0.5	U
63	M/P-XYLENE	108-38-3	µg/L	0.5	<0.5	U

Surrogates		Control Limit, %	Surro. Rec.%
1 1-BROMO-4-FLUOROBENZENE (4-BROMOFL	460-00-4	70-129	104
2 1,2-DICHLOROETHANE-D4	17060-07-0	70-129	86
3 DIBROMOFLUOROMETHANE	1868-53-7	70-122	92
4 TOLUENE-D8	2037-26-5	73-129	105
# of out-of-control			0

Internal Standard		Control Limit, %	IS Rec.%
1 CHLOROBENZENE-D5	3114-55-4	50-200	93
2 1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	94
3 FLUOROBENZENE	462-06-6	50-200	98
# of out-of-control			0

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

[a] MDL reported.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/29/2003
Project ID:	JPL	Service ID:	32964	Collected by:	
		Lab Sample ID:	03-2964-3	Received Date:	04/29/2003
Sample ID:	MW-24-1	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	524.2	Prep. Date:	05/01/03	Anal. Date:	05/01/03
Batch No:	03G2269	Prep. No:	–	Anal. Time:	01:50
Data File Name:	2964-03	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	BENZENE	71-43-2	µg/L	0.5	<0.5	U
2	BROMOBENZENE	108-86-1	µg/L	0.5	<0.5	U
3	BROMOCHLOROMETHANE	74-97-5	µg/L	0.5	<0.5	U
4	BROMODICHLOROMETHANE	75-27-4	µg/L	0.5	<0.5	U
5	BROMOFORM	75-25-2	µg/L	0.5	<0.5	U
6	BROMOMETHANE	74-83-9	µg/L	0.5	<0.5	U
7	N-BUTYLBENZENE	104-51-8	µg/L	0.5	<0.5	U
8	SEC-BUTYLBENZENE	135-98-8	µg/L	0.5	<0.5	U
9	TERT-BUTYLBENZENE	98-06-6	µg/L	0.5	<0.5	U
10	2-BUTANONE	78-93-3	µg/L	10	<10	U
11	CARBON TETRACHLORIDE	56-23-5	µg/L	0.5	7.5	
12	CHLOROBENZENE	108-90-7	µg/L	0.5	<0.5	U
13	CHLORODIBROMOMETHANE	124-48-1	µg/L	0.5	<0.5	U
14	CHLOROETHANE	75-00-3	µg/L	0.5	<0.5	U
15	CHLOROFORM	67-66-3	µg/L	0.5	5.2	
16	CHLOROMETHANE	74-87-3	µg/L	0.5	<0.5	U
17	2-CHLOROTOLUENE	95-49-8	µg/L	0.5	<0.5	U
18	4-CHLOROTOLUENE	106-43-4	µg/L	0.5	<0.5	U
19	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	µg/L	1.1 [a]	<1.1	U
20	1,2-DIBROMOETHANE (EDB)	106-93-4	µg/L	0.5	<0.5	U
21	DIBROMOMETHANE	74-95-3	µg/L	0.5	<0.5	U
22	1,2-DICHLOROBENZENE	95-50-1	µg/L	0.5	<0.5	U
23	1,3-DICHLOROBENZENE	541-73-1	µg/L	0.5	<0.5	U
24	1,4-DICHLOROBENZENE	106-46-7	µg/L	0.5	<0.5	U
25	DICHLORODIFLUOROMETHANE	75-71-8	µg/L	0.5	<0.5	U
26	1,1-DICHLOROETHANE	75-34-3	µg/L	0.5	<0.5	U
27	1,2-DICHLOROETHANE	107-06-2	µg/L	0.5	<0.5	U
28	1,1-DICHLOROETHENE	75-35-4	µg/L	0.5	<0.5	U
29	CIS-1,2-DICHLOROETHENE	156-59-2	µg/L	0.5	<0.5	U
30	TRANS-1,2-DICHLOROETHENE	156-60-5	µg/L	0.5	<0.5	U
31	1,2-DICHLOROPROPANE	78-87-5	µg/L	0.5	<0.5	U
32	1,3-DICHLOROPROPANE	142-28-9	µg/L	0.5	<0.5	U
33	2,2-DICHLOROPROPANE	594-20-7	µg/L	0.5	<0.5	U
34	1,1-DICHLOROPROPENE	563-58-6	µg/L	0.5	<0.5	U
35	CIS-1,3-DICHLOROPROPENE	10061-01-5	µg/L	0.5	<0.5	U
36	TRANS-1,3-DICHLOROPROPENE	10061-02-6	µg/L	0.5	<0.5	U
37	ETHYLBENZENE	100-41-4	µg/L	0.5	<0.5	U
38	HEXACHLOROBUTADIENE	87-68-3	µg/L	0.5	<0.5	U
39	ISOPROPYLBENZENE (CUMENE)	98-82-8	µg/L	0.5	<0.5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	P-ISOPROPYLTOLUENE	99-87-6	μg/L	0.5	<0.5	U
41	METHYLENE CHLORIDE	75-09-2	μg/L	1.8 [a]	<1.8	U
42	METHYL-T-BUTYL ETHER (MTBE)	1634-04-4	μg/L	1	<1	U
43	4-METHYL-2-PENTANONE (MIBK)	108-10-1	μg/L	10	4	J
44	NAPHTHALENE	91-20-3	μg/L	0.5	<0.5	U
45	N-PROPYLBENZENE	103-65-1	μg/L	0.5	<0.5	U
46	STYRENE	100-42-5	μg/L	0.5	<0.5	U
47	1,1,1,2-TETRACHLOROETHANE	630-20-6	μg/L	0.5	<0.5	U
48	1,1,2,2-TETRACHLOROETHANE	79-34-5	μg/L	0.5	<0.5	U
49	TETRACHLOROETHENE	127-18-4	μg/L	0.5	0.4	J
50	TOLUENE	108-88-3	μg/L	0.5	<0.5	U
51	1,2,3-TRICHLOROBENZENE	87-61-6	μg/L	0.5	<0.5	U
52	1,2,4-TRICHLOROBENZENE	120-82-1	μg/L	0.5	<0.5	U
53	1,1,1-TRICHLOROETHANE	71-55-6	μg/L	0.5	<0.5	U
54	1,1,2-TRICHLOROETHANE	79-00-5	μg/L	0.5	<0.5	U
55	TRICHLOROETHENE	79-01-6	μg/L	0.5	2.9	
56	TRICHLOROFLUOROMETHANE	75-69-4	μg/L	0.5	<0.5	U
57	1,2,3-TRICHLOROPROPANE	96-18-4	μg/L	0.5	<0.5	U
58	112TRICHLORO-122TRIFLUOROETHANE	76-13-1	μg/L	0.5	<0.5	U
59	1,2,4-TRIMETHYLBENZENE	95-63-6	μg/L	0.5	<0.5	U
60	1,3,5-TRIMETHYLBENZENE	108-67-8	μg/L	0.5	<0.5	U
61	VINYL CHLORIDE	75-01-4	μg/L	0.5	<0.5	U
62	O-XYLENE	95-47-6	μg/L	0.5	<0.5	U
63	M/P-XYLENE	108-38-3	μg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	1-BROMO-4-FLUOROBENZENE (4-BROMOFL	460-00-4	70-129	112
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	92
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	96
4	TOLUENE-D8	2037-26-5	73-129	107
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	CHLOROBENZENE-D5	3114-55-4	50-200	95
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	90
3	FLUOROBENZENE	462-06-6	50-200	100
# of out-of-control				0

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

[a] MDL reported.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/29/2003
Project ID:	JPL	Service ID:	32964	Collected by:	
		Lab Sample ID:	03-2964-4	Received Date:	04/29/2003
Sample ID:	**MW-24-2**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	524.2	Prep. Date:	05/01/03	Anal. Date:	05/01/03
Batch No:	03G2269	Prep. No:	–	Anal. Time:	02:19
Data File Name:	2964-04	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	BENZENE	71-43-2	µg/L	0.5	<0.5	U
2	BROMOBENZENE	108-86-1	µg/L	0.5	<0.5	U
3	BROMOCHLOROMETHANE	74-97-5	µg/L	0.5	<0.5	U
4	BROMODICHLOROMETHANE	75-27-4	µg/L	0.5	<0.5	U
5	BROMOFORM	75-25-2	µg/L	0.5	<0.5	U
6	BROMOMETHANE	74-83-9	µg/L	0.5	<0.5	U
7	N-BUTYLBENZENE	104-51-8	µg/L	0.5	<0.5	U
8	SEC-BUTYLBENZENE	135-98-8	µg/L	0.5	<0.5	U
9	TERT-BUTYLBENZENE	98-06-6	µg/L	0.5	<0.5	U
10	2-BUTANONE	78-93-3	µg/L	10	<10	U
11	CARBON TETRACHLORIDE	56-23-5	µg/L	0.5	8.9	
12	CHLOROBENZENE	108-90-7	µg/L	0.5	<0.5	U
13	CHLORODIBROMOMETHANE	124-48-1	µg/L	0.5	<0.5	U
14	CHLOROETHANE	75-00-3	µg/L	0.5	<0.5	U
15	CHLOROFORM	67-66-3	µg/L	0.5	3.8	
16	CHLOROMETHANE	74-87-3	µg/L	0.5	<0.5	U
17	2-CHLOROTOLUENE	95-49-8	µg/L	0.5	<0.5	U
18	4-CHLOROTOLUENE	106-43-4	µg/L	0.5	<0.5	U
19	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	µg/L	1.1 [a]	<1.1	U
20	1,2-DIBROMOETHANE (EDB)	106-93-4	µg/L	0.5	<0.5	U
21	DIBROMOMETHANE	74-95-3	µg/L	0.5	<0.5	U
22	1,2-DICHLOROBENZENE	95-50-1	µg/L	0.5	<0.5	U
23	1,3-DICHLOROBENZENE	541-73-1	µg/L	0.5	<0.5	U
24	1,4-DICHLOROBENZENE	106-46-7	µg/L	0.5	<0.5	U
25	DICHLORODIFLUOROMETHANE	75-71-8	µg/L	0.5	<0.5	U
26	1,1-DICHLOROETHANE	75-34-3	µg/L	0.5	<0.5	U
27	1,2-DICHLOROETHANE	107-06-2	µg/L	0.5	<0.5	U
28	1,1-DICHLOROETHENE	75-35-4	µg/L	0.5	0.5	
29	CIS-1,2-DICHLOROETHENE	156-59-2	µg/L	0.5	<0.5	U
30	TRANS-1,2-DICHLOROETHENE	156-60-5	µg/L	0.5	<0.5	U
31	1,2-DICHLOROPROPANE	78-87-5	µg/L	0.5	<0.5	U
32	1,3-DICHLOROPROPANE	142-28-9	µg/L	0.5	<0.5	U
33	2,2-DICHLOROPROPANE	594-20-7	µg/L	0.5	<0.5	U
34	1,1-DICHLOROPROPENE	563-58-6	µg/L	0.5	<0.5	U
35	CIS-1,3-DICHLOROPROPENE	10061-01-5	µg/L	0.5	<0.5	U
36	TRANS-1,3-DICHLOROPROPENE	10061-02-6	µg/L	0.5	<0.5	U
37	ETHYLBENZENE	100-41-4	µg/L	0.5	<0.5	U
38	HEXACHLOROBUTADIENE	87-68-3	µg/L	0.5	<0.5	U
39	ISOPROPYLBENZENE (CUMENE)	98-82-8	µg/L	0.5	<0.5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	P-ISOPROPYLTOLUENE	99-87-6	µg/L	0.5	<0.5	U
41	METHYLENE CHLORIDE	75-09-2	µg/L	1.8 [a]	<1.8	U
42	METHYL-T-BUTYL ETHER (MTBE)	1634-04-4	µg/L	1	<1	U
43	4-METHYL-2-PENTANONE (MIBK)	108-10-1	µg/L	10	4	J
44	NAPHTHALENE	91-20-3	µg/L	0.5	<0.5	U
45	N-PROPYLBENZENE	103-65-1	µg/L	0.5	<0.5	U
46	STYRENE	100-42-5	µg/L	0.5	<0.5	U
47	1,1,1,2-TETRACHLOROETHANE	630-20-6	µg/L	0.5	<0.5	U
48	1,1,2,2-TETRACHLOROETHANE	79-34-5	µg/L	0.5	<0.5	U
49	TETRACHLOROETHENE	127-18-4	µg/L	0.5	0.3	J
50	TOLUENE	108-88-3	µg/L	0.5	<0.5	U
51	1,2,3-TRICHLOROBENZENE	87-61-6	µg/L	0.5	<0.5	U
52	1,2,4-TRICHLOROBENZENE	120-82-1	µg/L	0.5	<0.5	U
53	1,1,1-TRICHLOROETHANE	71-55-6	µg/L	0.5	<0.5	U
54	1,1,2-TRICHLOROETHANE	79-00-5	µg/L	0.5	<0.5	U
55	TRICHLOROETHENE	79-01-6	µg/L	0.5	1.6	
56	TRICHLOROFLUOROMETHANE	75-69-4	µg/L	0.5	<0.5	U
57	1,2,3-TRICHLOROPROPANE	96-18-4	µg/L	0.5	<0.5	U
58	112TRICHLORO-122TRIFLUOROETHANE	76-13-1	µg/L	0.5	<0.5	U
59	1,2,4-TRIMETHYLBENZENE	95-63-6	µg/L	0.5	<0.5	U
60	1,3,5-TRIMETHYLBENZENE	108-67-8	µg/L	0.5	<0.5	U
61	VINYL CHLORIDE	75-01-4	µg/L	0.5	<0.5	U
62	O-XYLENE	95-47-6	µg/L	0.5	<0.5	U
63	M/P-XYLENE	108-38-3	µg/L	0.5	<0.5	U

Surrogates		Control Limit, %	Surro. Rec.%
1 1-BROMO-4-FLUOROBENZENE (4-BROMOFL	460-00-4	70-129	107
2 1,2-DICHLOROETHANE-D4	17060-07-0	70-129	90
3 DIBROMOFLUOROMETHANE	1868-53-7	70-122	94
4 TOLUENE-D8	2037-26-5	73-129	105
# of out-of-control			0

Internal Standard		Control Limit, %	IS Rec.%
1 CHLOROBENZENE-D5	3114-55-4	50-200	93
2 1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	90
3 FLUOROBENZENE	462-06-6	50-200	96
# of out-of-control			0

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

[a] MDL reported.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/29/2003
Project ID:	JPL	Service ID:	32964	Collected by:	
		Lab Sample ID:	03-2964-5	Received Date:	04/29/2003
Sample ID:	**MW-24-3**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	524.2	Prep. Date:	05/01/03	Anal. Date:	05/01/03
Batch No:	03G2269	Prep. No:	–	Anal. Time:	02:48
Data File Name:	2964-05	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	BENZENE	71-43-2	µg/L	0.5	<0.5	U
2	BROMOBENZENE	108-86-1	µg/L	0.5	<0.5	U
3	BROMOCHLOROMETHANE	74-97-5	µg/L	0.5	<0.5	U
4	BROMODICHLOROMETHANE	75-27-4	µg/L	0.5	<0.5	U
5	BROMOFORM	75-25-2	µg/L	0.5	<0.5	U
6	BROMOMETHANE	74-83-9	µg/L	0.5	<0.5	U
7	N-BUTYLBENZENE	104-51-8	µg/L	0.5	<0.5	U
8	SEC-BUTYLBENZENE	135-98-8	µg/L	0.5	<0.5	U
9	TERT-BUTYLBENZENE	98-06-6	µg/L	0.5	<0.5	U
10	2-BUTANONE	78-93-3	µg/L	10	<10	U
11	CARBON TETRACHLORIDE	56-23-5	µg/L	0.5	<0.5	U
12	CHLOROBENZENE	108-90-7	µg/L	0.5	<0.5	U
13	CHLORODIBROMOMETHANE	124-48-1	µg/L	0.5	<0.5	U
14	CHLOROETHANE	75-00-3	µg/L	0.5	<0.5	U
15	CHLOROFORM	67-66-3	µg/L	0.5	<0.5	U
16	CHLOROMETHANE	74-87-3	µg/L	0.5	<0.5	U
17	2-CHLOROTOLUENE	95-49-8	µg/L	0.5	<0.5	U
18	4-CHLOROTOLUENE	106-43-4	µg/L	0.5	<0.5	U
19	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	µg/L	1.1 [a]	<1.1	U
20	1,2-DIBROMOETHANE (EDB)	106-93-4	µg/L	0.5	<0.5	U
21	DIBROMOMETHANE	74-95-3	µg/L	0.5	<0.5	U
22	1,2-DICHLOROBENZENE	95-50-1	µg/L	0.5	<0.5	U
23	1,3-DICHLOROBENZENE	541-73-1	µg/L	0.5	<0.5	U
24	1,4-DICHLOROBENZENE	106-46-7	µg/L	0.5	<0.5	U
25	DICHLORODIFLUOROMETHANE	75-71-8	µg/L	0.5	<0.5	U
26	1,1-DICHLOROETHANE	75-34-3	µg/L	0.5	<0.5	U
27	1,2-DICHLOROETHANE	107-06-2	µg/L	0.5	<0.5	U
28	1,1-DICHLOROETHENE	75-35-4	µg/L	0.5	<0.5	U
29	CIS-1,2-DICHLOROETHENE	156-59-2	µg/L	0.5	<0.5	U
30	TRANS-1,2-DICHLOROETHENE	156-60-5	µg/L	0.5	<0.5	U
31	1,2-DICHLOROPROPANE	78-87-5	µg/L	0.5	<0.5	U
32	1,3-DICHLOROPROPANE	142-28-9	µg/L	0.5	<0.5	U
33	2,2-DICHLOROPROPANE	594-20-7	µg/L	0.5	<0.5	U
34	1,1-DICHLOROPROPENE	563-58-6	µg/L	0.5	<0.5	U
35	CIS-1,3-DICHLOROPROPENE	10061-01-5	µg/L	0.5	<0.5	U
36	TRANS-1,3-DICHLOROPROPENE	10061-02-6	µg/L	0.5	<0.5	U
37	ETHYLBENZENE	100-41-4	µg/L	0.5	<0.5	U
38	HEXACHLOROBUTADIENE	87-68-3	µg/L	0.5	<0.5	U
39	ISOPROPYLBENZENE (CUMENE)	98-82-8	µg/L	0.5	<0.5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	P-ISOPROPYLTOLUENE	99-87-6	µg/L	0.5	<0.5	U
41	METHYLENE CHLORIDE	75-09-2	µg/L	1.8 [a]	<1.8	U
42	METHYL-T-BUTYL ETHER (MTBE)	1634-04-4	µg/L	1	<1	U
43	4-METHYL-2-PENTANONE (MIBK)	108-10-1	µg/L	10	5	J
44	NAPHTHALENE	91-20-3	µg/L	0.5	<0.5	U
45	N-PROPYLBENZENE	103-65-1	µg/L	0.5	<0.5	U
46	STYRENE	100-42-5	µg/L	0.5	<0.5	U
47	1,1,1,2-TETRACHLOROETHANE	630-20-6	µg/L	0.5	<0.5	U
48	1,1,2,2-TETRACHLOROETHANE	79-34-5	µg/L	0.5	<0.5	U
49	TETRACHLOROETHENE	127-18-4	µg/L	0.5	<0.5	U
50	TOLUENE	108-88-3	µg/L	0.5	<0.5	U
51	1,2,3-TRICHLOROBENZENE	87-61-6	µg/L	0.5	<0.5	U
52	1,2,4-TRICHLOROBENZENE	120-82-1	µg/L	0.5	<0.5	U
53	1,1,1-TRICHLOROETHANE	71-55-6	µg/L	0.5	<0.5	U
54	1,1,2-TRICHLOROETHANE	79-00-5	µg/L	0.5	<0.5	U
55	TRICHLOROETHENE	79-01-6	µg/L	0.5	<0.5	U
56	TRICHLOROFLUOROMETHANE	75-69-4	µg/L	0.5	<0.5	U
57	1,2,3-TRICHLOROPROPANE	96-18-4	µg/L	0.5	<0.5	U
58	112TRICHLORO-122TRIFLUOROETHANE	76-13-1	µg/L	0.5	<0.5	U
59	1,2,4-TRIMETHYLBENZENE	95-63-6	µg/L	0.5	<0.5	U
60	1,3,5-TRIMETHYLBENZENE	108-67-8	µg/L	0.5	<0.5	U
61	VINYL CHLORIDE	75-01-4	µg/L	0.5	<0.5	U
62	O-XYLENE	95-47-6	µg/L	0.5	<0.5	U
63	M/P-XYLENE	108-38-3	µg/L	0.5	<0.5	U

Surrogates		Control Limit, %	Surro. Rec.%
1 1-BROMO-4-FLUOROBENZENE (4-BROMOFL	460-00-4	70-129	103
2 1,2-DICHLOROETHANE-D4	17060-07-0	70-129	88
3 DIBROMOFLUOROMETHANE	1868-53-7	70-122	89
4 TOLUENE-D8	2037-26-5	73-129	103
# of out-of-control			0

Internal Standard		Control Limit, %	IS Rec.%
1 CHLOROBENZENE-D5	3114-55-4	50-200	98
2 1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	95
3 FLUOROBENZENE	462-06-6	50-200	105
# of out-of-control			0

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

[a]MDL reported.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/29/2003
Project ID:	JPL	Service ID:	32964	Collected by:	
		Lab Sample ID:	03-2964-6	Received Date:	04/29/2003
Sample ID:	**MW-24-4**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	524.2	Prep. Date:	05/01/03	Anal. Date:	05/01/03
Batch No:	03G2269	Prep. No:	–	Anal. Time:	03:17
Data File Name:	2964-06	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	BENZENE	71-43-2	µg/L	0.5	<0.5	U
2	BROMOBENZENE	108-86-1	µg/L	0.5	<0.5	U
3	BROMOCHLOROMETHANE	74-97-5	µg/L	0.5	<0.5	U
4	BROMODICHLOROMETHANE	75-27-4	µg/L	0.5	<0.5	U
5	BROMOFORM	75-25-2	µg/L	0.5	<0.5	U
6	BROMOMETHANE	74-83-9	µg/L	0.5	<0.5	U
7	N-BUTYLBENZENE	104-51-8	µg/L	0.5	<0.5	U
8	SEC-BUTYLBENZENE	135-98-8	µg/L	0.5	<0.5	U
9	TERT-BUTYLBENZENE	98-06-6	µg/L	0.5	<0.5	U
10	2-BUTANONE	78-93-3	µg/L	10	<10	U
11	CARBON TETRACHLORIDE	56-23-5	µg/L	0.5	<0.5	U
12	CHLOROBENZENE	108-90-7	µg/L	0.5	<0.5	U
13	CHLORODIBROMOMETHANE	124-48-1	µg/L	0.5	<0.5	U
14	CHLOROETHANE	75-00-3	µg/L	0.5	<0.5	U
15	CHLOROFORM	67-66-3	µg/L	0.5	<0.5	U
16	CHLOROMETHANE	74-87-3	µg/L	0.5	<0.5	U
17	2-CHLOROTOLUENE	95-49-8	µg/L	0.5	<0.5	U
18	4-CHLOROTOLUENE	106-43-4	µg/L	0.5	<0.5	U
19	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	µg/L	1.1 (a)	<1.1	U
20	1,2-DIBROMOETHANE (EDB)	106-93-4	µg/L	0.5	<0.5	U
21	DIBROMOMETHANE	74-95-3	µg/L	0.5	<0.5	U
22	1,2-DICHLOROBENZENE	95-50-1	µg/L	0.5	<0.5	U
23	1,3-DICHLOROBENZENE	541-73-1	µg/L	0.5	<0.5	U
24	1,4-DICHLOROBENZENE	106-46-7	µg/L	0.5	<0.5	U
25	DICHLORODIFLUOROMETHANE	75-71-8	µg/L	0.5	<0.5	U
26	1,1-DICHLOROETHANE	75-34-3	µg/L	0.5	<0.5	U
27	1,2-DICHLOROETHANE	107-06-2	µg/L	0.5	<0.5	U
28	1,1-DICHLOROETHENE	75-35-4	µg/L	0.5	<0.5	U
29	CIS-1,2-DICHLOROETHENE	156-59-2	µg/L	0.5	<0.5	U
30	TRANS-1,2-DICHLOROETHENE	156-60-5	µg/L	0.5	<0.5	U
31	1,2-DICHLOROPROPANE	78-87-5	µg/L	0.5	<0.5	U
32	1,3-DICHLOROPROPANE	142-28-9	µg/L	0.5	<0.5	U
33	2,2-DICHLOROPROPANE	594-20-7	µg/L	0.5	<0.5	U
34	1,1-DICHLOROPROPENE	563-58-6	µg/L	0.5	<0.5	U
35	CIS-1,3-DICHLOROPROPENE	10061-01-5	µg/L	0.5	<0.5	U
36	TRANS-1,3-DICHLOROPROPENE	10061-02-6	µg/L	0.5	<0.5	U
37	ETHYLBENZENE	100-41-4	µg/L	0.5	<0.5	U
38	HEXACHLOROBUTADIENE	87-68-3	µg/L	0.5	<0.5	U
39	ISOPROPYLBENZENE (CUMENE)	98-82-8	µg/L	0.5	<0.5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	P-ISOPROPYLTOLUENE	99-87-6	µg/L	0.5	<0.5	U
41	METHYLENE CHLORIDE	75-09-2	µg/L	1.8 [a]	<1.8	U
42	METHYL-T-BUTYL ETHER (MTBE)	1634-04-4	µg/L	1	<1	U
43	4-METHYL-2-PENTANONE (MIBK)	108-10-1	µg/L	10	5	J
44	NAPHTHALENE	91-20-3	µg/L	0.5	<0.5	U
45	N-PROPYLBENZENE	103-65-1	µg/L	0.5	<0.5	U
46	STYRENE	100-42-5	µg/L	0.5	<0.5	U
47	1,1,1,2-TETRACHLOROETHANE	630-20-6	µg/L	0.5	<0.5	U
48	1,1,2,2-TETRACHLOROETHANE	79-34-5	µg/L	0.5	<0.5	U
49	TETRACHLOROETHENE	127-18-4	µg/L	0.5	<0.5	U
50	TOLUENE	108-88-3	µg/L	0.5	<0.5	U
51	1,2,3-TRICHLOROBENZENE	87-61-6	µg/L	0.5	<0.5	U
52	1,2,4-TRICHLOROBENZENE	120-82-1	µg/L	0.5	<0.5	U
53	1,1,1-TRICHLOROETHANE	71-55-6	µg/L	0.5	<0.5	U
54	1,1,2-TRICHLOROETHANE	79-00-5	µg/L	0.5	<0.5	U
55	TRICHLOROETHENE	79-01-6	µg/L	0.5	<0.5	U
56	TRICHLOROFLUOROMETHANE	75-69-4	µg/L	0.5	<0.5	U
57	1,2,3-TRICHLOROPROPANE	96-18-4	µg/L	0.5	<0.5	U
58	112TRICHLORO-122TRIFLUOROETHANE	76-13-1	µg/L	0.5	<0.5	U
59	1,2,4-TRIMETHYLBENZENE	95-63-6	µg/L	0.5	<0.5	U
60	1,3,5-TRIMETHYLBENZENE	108-67-8	µg/L	0.5	<0.5	U
61	VINYL CHLORIDE	75-01-4	µg/L	0.5	<0.5	U
62	O-XYLENE	95-47-6	µg/L	0.5	<0.5	U
63	M/P-XYLENE	108-38-3	µg/L	0.5	<0.5	U

Surrogates		Control Limit, %	Surro. Rec.%
1 1-BROMO-4-FLUOROBENZENE (4-BROMOFL	460-00-4	70-129	104
2 1,2-DICHLOROETHANE-D4	17060-07-0	70-129	84
3 DIBROMOFLUOROMETHANE	1868-53-7	70-122	88
4 TOLUENE-D8	2037-26-5	73-129	99
# of out-of-control			0

Internal Standard		Control Limit, %	IS Rec.%
1 CHLOROBENZENE-D5	3114-55-4	50-200	103
2 1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	94
3 FLUOROBENZENE	462-06-6	50-200	107
# of out-of-control			0

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

[a] MDL reported.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/29/2003
Project ID:	JPL	Service ID:	32964	Collected by:	
		Lab Sample ID:	03-2964-7	Received Date:	04/29/2003
Sample ID:	**MW-24-5**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	524.2	Prep. Date:	05/01/03	Anal. Date:	05/01/03
Batch No:	03G2269	Prep. No:	–	Anal. Time:	03:46
Data File Name:	2964-07	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	BENZENE	71-43-2	µg/L	0.5	<0.5	U
2	BROMOBENZENE	108-86-1	µg/L	0.5	<0.5	U
3	BROMOCHLOROMETHANE	74-97-5	µg/L	0.5	<0.5	U
4	BROMODICHLOROMETHANE	75-27-4	µg/L	0.5	<0.5	U
5	BROMOFORM	75-25-2	µg/L	0.5	<0.5	U
6	BROMOMETHANE	74-83-9	µg/L	0.5	<0.5	U
7	N-BUTYLBENZENE	104-51-8	µg/L	0.5	<0.5	U
8	SEC-BUTYLBENZENE	135-98-8	µg/L	0.5	<0.5	U
9	TERT-BUTYLBENZENE	98-06-6	µg/L	0.5	<0.5	U
10	2-BUTANONE	78-93-3	µg/L	10	<10	U
11	CARBON TETRACHLORIDE	56-23-5	µg/L	0.5	<0.5	U
12	CHLOROBENZENE	108-90-7	µg/L	0.5	<0.5	U
13	CHLORODIBROMOMETHANE	124-48-1	µg/L	0.5	<0.5	U
14	CHLOROETHANE	75-00-3	µg/L	0.5	<0.5	U
15	CHLOROFORM	67-66-3	µg/L	0.5	<0.5	U
16	CHLOROMETHANE	74-87-3	µg/L	0.5	<0.5	U
17	2-CHLOROTOLUENE	95-49-8	µg/L	0.5	<0.5	U
18	4-CHLOROTOLUENE	106-43-4	µg/L	0.5	<0.5	U
19	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	µg/L	1.1 (a)	<1.1	U
20	1,2-DIBROMOETHANE (EDB)	106-93-4	µg/L	0.5	<0.5	U
21	DIBROMOMETHANE	74-95-3	µg/L	0.5	<0.5	U
22	1,2-DICHLOROBENZENE	95-50-1	µg/L	0.5	<0.5	U
23	1,3-DICHLOROBENZENE	541-73-1	µg/L	0.5	<0.5	U
24	1,4-DICHLOROBENZENE	106-46-7	µg/L	0.5	<0.5	U
25	DICHLORODIFLUOROMETHANE	75-71-8	µg/L	0.5	<0.5	U
26	1,1-DICHLOROETHANE	75-34-3	µg/L	0.5	<0.5	U
27	1,2-DICHLOROETHANE	107-06-2	µg/L	0.5	<0.5	U
28	1,1-DICHLOROETHENE	75-35-4	µg/L	0.5	<0.5	U
29	CIS-1,2-DICHLOROETHENE	156-59-2	µg/L	0.5	<0.5	U
30	TRANS-1,2-DICHLOROETHENE	156-60-5	µg/L	0.5	<0.5	U
31	1,2-DICHLOROPROPANE	78-87-5	µg/L	0.5	<0.5	U
32	1,3-DICHLOROPROPANE	142-28-9	µg/L	0.5	<0.5	U
33	2,2-DICHLOROPROPANE	594-20-7	µg/L	0.5	<0.5	U
34	1,1-DICHLOROPROPENE	563-58-6	µg/L	0.5	<0.5	U
35	CIS-1,3-DICHLOROPROPENE	10061-01-5	µg/L	0.5	<0.5	U
36	TRANS-1,3-DICHLOROPROPENE	10061-02-6	µg/L	0.5	<0.5	U
37	ETHYLBENZENE	100-41-4	µg/L	0.5	<0.5	U
38	HEXACHLOROBUTADIENE	87-68-3	µg/L	0.5	<0.5	U
39	ISOPROPYLBENZENE (CUMENE)	98-82-8	µg/L	0.5	<0.5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	P-ISOPROPYLTOLUENE	99-87-6	µg/L	0.5	<0.5	U
41	METHYLENE CHLORIDE	75-09-2	µg/L	1.8 [a]	<1.8	U
42	METHYL-T-BUTYL ETHER (MTBE)	1634-04-4	µg/L	1	<1	U
43	4-METHYL-2-PENTANONE (MIBK)	108-10-1	µg/L	10	5	J
44	NAPHTHALENE	91-20-3	µg/L	0.5	<0.5	U
45	N-PROPYLBENZENE	103-65-1	µg/L	0.5	<0.5	U
46	STYRENE	100-42-5	µg/L	0.5	<0.5	U
47	1,1,1,2-TETRACHLOROETHANE	630-20-6	µg/L	0.5	<0.5	U
48	1,1,2,2-TETRACHLOROETHANE	79-34-5	µg/L	0.5	<0.5	U
49	TETRACHLOROETHENE	127-18-4	µg/L	0.5	<0.5	U
50	TOLUENE	108-88-3	µg/L	0.5	<0.5	U
51	1,2,3-TRICHLOROBENZENE	87-61-6	µg/L	0.5	<0.5	U
52	1,2,4-TRICHLOROBENZENE	120-82-1	µg/L	0.5	<0.5	U
53	1,1,1-TRICHLOROETHANE	71-55-6	µg/L	0.5	<0.5	U
54	1,1,2-TRICHLOROETHANE	79-00-5	µg/L	0.5	<0.5	U
55	TRICHLOROETHENE	79-01-6	µg/L	0.5	<0.5	U
56	TRICHLOROFLUOROMETHANE	75-69-4	µg/L	0.5	<0.5	U
57	1,2,3-TRICHLOROPROPANE	96-18-4	µg/L	0.5	<0.5	U
58	112TRICHLORO-122TRIFLUOROETHANE	76-13-1	µg/L	0.5	<0.5	U
59	1,2,4-TRIMETHYLBENZENE	95-63-6	µg/L	0.5	<0.5	U
60	1,3,5-TRIMETHYLBENZENE	108-67-8	µg/L	0.5	<0.5	U
61	VINYL CHLORIDE	75-01-4	µg/L	0.5	<0.5	U
62	O-XYLENE	95-47-6	µg/L	0.5	<0.5	U
63	M/P-XYLENE	108-38-3	µg/L	0.5	<0.5	U

Surrogates		Control Limit, %	Surro. Rec.%
1 1-BROMO-4-FLUOROBENZENE (4-BROMOFL	460-00-4	70-129	110
2 1,2-DICHLOROETHANE-D4	17060-07-0	70-129	87
3 DIBROMOFLUOROMETHANE	1868-53-7	70-122	95
4 TOLUENE-D8	2037-26-5	73-129	106
# of out-of-control			0

Internal Standard		Control Limit, %	IS Rec.%
1 CHLOROBENZENE-D5	3114-55-4	50-200	97
2 1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	91
3 FLUOROBENZENE	462-06-6	50-200	102
# of out-of-control			0

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

[a] MDL reported.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/29/2003
Project ID:	JPL	Service ID:	32964	Collected by:	
		Lab Sample ID:	03-2964-8	Received Date:	04/29/2003
Sample ID:	**TB-7-4/29/03**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	524.2	Prep. Date:	05/01/03	Anal. Date:	05/01/03
Batch No:	03G2269	Prep. No:	–	Anal. Time:	04:15
Data File Name:	2964-08	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	BENZENE	71-43-2	µg/L	0.5	<0.5	U
2	BROMOBENZENE	108-86-1	µg/L	0.5	<0.5	U
3	BROMOCHLOROMETHANE	74-97-5	µg/L	0.5	<0.5	U
4	BROMODICHLOROMETHANE	75-27-4	µg/L	0.5	<0.5	U
5	BROMOFORM	75-25-2	µg/L	0.5	<0.5	U
6	BROMOMETHANE	74-83-9	µg/L	0.5	<0.5	U
7	N-BUTYLBENZENE	104-51-8	µg/L	0.5	<0.5	U
8	SEC-BUTYLBENZENE	135-98-8	µg/L	0.5	<0.5	U
9	TERT-BUTYLBENZENE	98-06-6	µg/L	0.5	<0.5	U
10	2-BUTANONE	78-93-3	µg/L	10	<10	U
11	CARBON TETRACHLORIDE	56-23-5	µg/L	0.5	<0.5	U
12	CHLOROBENZENE	108-90-7	µg/L	0.5	<0.5	U
13	CHLORODIBROMOMETHANE	124-48-1	µg/L	0.5	<0.5	U
14	CHLOROETHANE	75-00-3	µg/L	0.5	<0.5	U
15	CHLOROFORM	67-66-3	µg/L	0.5	<0.5	U
16	CHLOROMETHANE	74-87-3	µg/L	0.5	<0.5	U
17	2-CHLOROTOLUENE	95-49-8	µg/L	0.5	<0.5	U
18	4-CHLOROTOLUENE	106-43-4	µg/L	0.5	<0.5	U
19	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	µg/L	1.1 [a]	<1.1	U
20	1,2-DIBROMOETHANE (EDB)	106-93-4	µg/L	0.5	<0.5	U
21	DIBROMOMETHANE	74-95-3	µg/L	0.5	<0.5	U
22	1,2-DICHLOROBENZENE	95-50-1	µg/L	0.5	<0.5	U
23	1,3-DICHLOROBENZENE	541-73-1	µg/L	0.5	<0.5	U
24	1,4-DICHLOROBENZENE	106-46-7	µg/L	0.5	<0.5	U
25	DICHLORODIFLUOROMETHANE	75-71-8	µg/L	0.5	<0.5	U
26	1,1-DICHLOROETHANE	75-34-3	µg/L	0.5	<0.5	U
27	1,2-DICHLOROETHANE	107-06-2	µg/L	0.5	<0.5	U
28	1,1-DICHLOROETHENE	75-35-4	µg/L	0.5	<0.5	U
29	CIS-1,2-DICHLOROETHENE	156-59-2	µg/L	0.5	<0.5	U
30	TRANS-1,2-DICHLOROETHENE	156-60-5	µg/L	0.5	<0.5	U
31	1,2-DICHLOROPROPANE	78-87-5	µg/L	0.5	<0.5	U
32	1,3-DICHLOROPROPANE	142-28-9	µg/L	0.5	<0.5	U
33	2,2-DICHLOROPROPANE	594-20-7	µg/L	0.5	<0.5	U
34	1,1-DICHLOROPROPENE	563-58-6	µg/L	0.5	<0.5	U
35	CIS-1,3-DICHLOROPROPENE	10061-01-5	µg/L	0.5	<0.5	U
36	TRANS-1,3-DICHLOROPROPENE	10061-02-6	µg/L	0.5	<0.5	U
37	ETHYLBENZENE	100-41-4	µg/L	0.5	<0.5	U
38	HEXACHLOROBUTADIENE	87-68-3	µg/L	0.5	<0.5	U
39	ISOPROPYLBENZENE (CUMENE)	98-82-8	µg/L	0.5	<0.5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	P-ISOPROPYLTOLUENE	99-87-6	µg/L	0.5	<0.5	U
41	METHYLENE CHLORIDE	75-09-2	µg/L	1.8 [a]	1.8	
42	METHYL-T-BUTYL ETHER (MTBE)	1634-04-4	µg/L	1	<1	U
43	4-METHYL-2-PENTANONE (MIBK)	108-10-1	µg/L	10	<10	U
44	NAPHTHALENE	91-20-3	µg/L	0.5	<0.5	U
45	N-PROPYLBENZENE	103-65-1	µg/L	0.5	<0.5	U
46	STYRENE	100-42-5	µg/L	0.5	<0.5	U
47	1,1,1,2-TETRACHLOROETHANE	630-20-6	µg/L	0.5	<0.5	U
48	1,1,2,2-TETRACHLOROETHANE	79-34-5	µg/L	0.5	<0.5	U
49	TETRACHLOROETHENE	127-18-4	µg/L	0.5	<0.5	U
50	TOLUENE	108-88-3	µg/L	0.5	<0.5	U
51	1,2,3-TRICHLOROBENZENE	87-61-6	µg/L	0.5	<0.5	U
52	1,2,4-TRICHLOROBENZENE	120-82-1	µg/L	0.5	<0.5	U
53	1,1,1-TRICHLOROETHANE	71-55-6	µg/L	0.5	<0.5	U
54	1,1,2-TRICHLOROETHANE	79-00-5	µg/L	0.5	<0.5	U
55	TRICHLOROETHENE	79-01-6	µg/L	0.5	<0.5	U
56	TRICHLOROFLUOROMETHANE	75-69-4	µg/L	0.5	<0.5	U
57	1,2,3-TRICHLOROPROPANE	96-18-4	µg/L	0.5	<0.5	U
58	112TRICHLORO-122TRIFLUOROETHANE	76-13-1	µg/L	0.5	<0.5	U
59	1,2,4-TRIMETHYLBENZENE	95-63-6	µg/L	0.5	<0.5	U
60	1,3,5-TRIMETHYLBENZENE	108-67-8	µg/L	0.5	<0.5	U
61	VINYL CHLORIDE	75-01-4	µg/L	0.5	<0.5	U
62	O-XYLENE	95-47-6	µg/L	0.5	<0.5	U
63	M/P-XYLENE	108-38-3	µg/L	0.5	<0.5	U

Surrogates		Control Limit, %	Surro. Rec.%
1 1-BROMO-4-FLUOROBENZENE (4-BROMOFL	460-00-4	70-129	105
2 1,2-DICHLOROETHANE-D4	17060-07-0	70-129	87
3 DIBROMOFLUOROMETHANE	1868-53-7	70-122	91
4 TOLUENE-D8	2037-26-5	73-129	104
# of out-of-control			0

Internal Standard		Control Limit, %	IS Rec.%
1 CHLOROBENZENE-D5	3114-55-4	50-200	101
2 1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	93
3 FLUOROBENZENE	462-06-6	50-200	102
# of out-of-control			0

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

[a]MDL reported.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

FORM-2C

Applied P & Ch Laboratory

Surrogate Recovery Summary for Method 524.2

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		SDG Number:	032964
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03G2269		

#	Client Sample No	Lab Sample ID	S1 % #	S2 % #	S3 % #	S4 % #	TOT OUT
1	03G2269-LCS-01	03G2269-LCS-01	102	87	96	101	0
2	MW-17-2MS	03-2933-3MS	103	84	96	105	0
3	MW-17-2MSD	03-2933-3MSD	103	84	98	104	0
4	03G2269-MB-01	03G2269-MB-01	110	85	91	103	0
5	DUPE-4-2Q03	03-2964-1	105	87	92	104	0
6	EB-7-4/29/03	03-2964-2	104	86	92	105	0
7	MW-24-1	03-2964-3	112	92	96	107	0
8	MW-24-2	03-2964-4	107	90	94	105	0
9	MW-24-3	03-2964-5	103	88	89	103	0
10	MW-24-4	03-2964-6	104	84	88	99	0
11	MW-24-5	03-2964-7	110	87	95	106	0
12	TB-7-4/29/03	03-2964-8	105	87	91	104	0
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

	QC Control Limit
S1 = 1-BROMO-4-FLUOROBENZENE (4-BROMOFL	70-129
S2 = 1,2-DICHLOROETHANE-D4	70-129
S3 = DIBROMOFLUOROMETHANE	70-122
S4 = TOLUENE-D8	73-129

Column to be used to flag recovery values:

* – Values outside of contract required QC Limits D – Surrogate diluted out I – Matrix Interference

FORM-3A

Applied P & Ch Laboratory

Lab Control Spike/Lab Control Spike Duplicate Recovery for Method 524.2

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	32964
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03G2269		
LCS Filename:	G2269L01	Date Analyzed:	043003	Time Analyzed:	18:09
LCSD Filename:	–	Date Analyzed:	–	Time Analyzed:	–

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
BENZENE	µg/L	20	0	20.1	101	65-120
CHLOROBENZENE	µg/L	20	0	22.3	112	65-134
1,1-DICHLOROETHENE	µg/L	20	0	18.7	94	65-127
TOLUENE	µg/L	20	0	19.7	99	65-134
TRICHLOROETHENE	µg/L	20	0	19.8	99	67-122
# 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: _____

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