APCL

Applied Physics & Chemistry Laboratory

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

December 8, 2003

GEOFON, Inc.
Attention: Brad Shojaee
22632 Golden Spring Dr Ste 270
Diamond Bar CA 91765

Dear Brad,

This package contains samples in our Service ID 03-5973 and your project : 04-4428.10 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: Brad Shojaee
22632 Golden Spring Dr Ste 270
Diamond Bar CA 91765
Tel: (909)396-7662 Fax: (909)396-1455

Service ID #: 801-035973
Collected by: JR
Collected on: 11/05/03

Received: 11/05/03
Extracted: N/A
Tested: 11/05-10/03
Reported: 11/11/03

Sample Description: Water from MW-9,3.
Project Description: 04-4428.10 JPL

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result MW-9 03-05973-1	MW-3-1 03-05973-2	MW-3-2 03-05973-3	TB-10-11-5-03 03-05973-4
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	3.0J	<4	5.6	-
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	0.8	<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	0.5	<0.5	<0.5	<0.5	<0.5
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

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result MW-9 03-05973-1	MW-3-1 03-05973-2	MW-3-2 03-05973-3	TB-10-11-5-03 03-05973-4
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	0.5	<0.5	<0.5	<0.5	0.5J
METHYL-T-BUTYL ETHER (MTBE)	524.2	µg/L	1	<1	<1	<1	<1
4-METHYL-2-PENTANONE (MIBK)	524.2	µg/L	10	<10	<10	<10	<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	0.3J	<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

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

Respectfully submitted,

Dominik Lau
Laboratory Director
Applied P & Ch Laboratory

Level C Data Package Deliverables

General Information

Project: 04-4428.10 JPL

APCL Service ID: 03-5973

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

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Case Narrative

Project: JPL/MW-9,3./04-4428.10

For GEOFON, Inc.

APCL Service No: 03-5973

1. Sample Identification

The sample identifications are listed in the following table:

GEOFON, Inc. Sample ID	APCL Sample ID
MW-9	03-05973-1
MW-3-2	03-05973-3
MW-3-1	03-05973-2
TB-10-11-5-03	03-05973-4

2. Analytical Methodology

Samples are analyzed by EPA methods

524.2 (Volatile Organic Compounds),
7196 (Chromium (VI)),
314.0 (Perchlorate, low level),

3. Holding Time

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

4. Preservation

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

5. Tele-log

None

6. Anomaly

None

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

Respectfully submitted,

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

0069

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

Shallon Wells

GEOFON's LAB COORDINATOR	LAB COORDINATOR'S PHONE	LAB COORDINATOR'S FAX	LABORATORY SERVICE ID	LABORATORY CONTACT	MAIL REPORT (COMPANY NAME)
Scott Buhman	909 396 7662	909 396 1455		Kenny Chan	Geofon
PROJECT NAME	**PROJECT LOCATION**	**PROJECT NUMBER**	**LABORATORY PHONE**	**LABORATORY FAX**	**RECIPIENT NAME**
SPL Celo Mon-4003	MW-9, MW-11.5.03	04-4428.10	909 590 1828	909 590 1498	Tony Ford
PROJECT CONTACT	**PROJECT PHONE NUMBER**	**PROJECT FAX**	**LABORATORY ADDRESS**		**ADDRESS**
Brad Shojaie	909-396-7662	909 396 1455	13760 Magnolia Ave.		22632 Golden Springs Dr. Ste 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		Diamond Bar, CA 91765
PROJECT MANAGER	**PROJECT MANAGER'S PHONE**	**PROJECT MANAGER'S FAX**			
Tony Ford	909 396 7662	909 396 1455			

10.8.03

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont.	QC Level	T.A.T.	Analyses: 524.2 (VOCs)	314.0 (Cl04)	200.8 (Cr)	7196A (Cr(VI))	Comments
1	MW-9	W	11.5.03	0952	HCl HNO3 NONE	5	III	Normal	X	X	X	X	
2	MW-								X	X	X	X	
3													5973
4													
5													
6									11.5.03				
7													
8													
9													
10													

SAMPLES COLLECTED BY:	COURIER AND AIR BILL NUMBER:			COOLER TEMPERATURE UPON RECEIPT
RELINQUISHED BY	RECEIVED BY	DATE	TIME	SAMPLE'S CONDITION UPON RECEIPT
		11/5/03	11:15	

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

EC 778

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-3

GEOFON's LAB COORDINATOR	LAB COORDINATOR'S PHONE	LAB COORDINATOR'S FAX	LABORATORY SERVICE ID	LABORATORY CONTACT	MAIL REPORT (COMPANY NAME)
Brad Slojaer	909 396 7662	909 396 1455		Kenny Chan	Geofon
PROJECT NAME:	**PROJECT LOCATION**	**PROJECT NUMBER**	**LABORATORY PHONE**	**LABORATORY FAX**	**RECIPIENT NAME**
JPL GW Mon-4Q03	MW-3	04-4428.10	9095901828	909 590 1498	Tony Ford
PROJECT CONTACT	**PROJECT PHONE NUMBER**	**PROJECT FAX**	**LABORATORY ADDRESS**		**ADDRESS**
Scott Buhmer	909 396 7662	909 396 1455	13760 Magnolia Ave.		22632 Golden Springs Dr. St 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		Diamond Bar, CA 91765
PROJECT MANAGER	**PROJECT MANAGER'S PHONE**	**PROJECT MANAGER'S FAX**			
Tony Ford	909 396 7662	909 396 1455			

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont	QC Level	T.A.T	Analyses: 524.2 (VOCs)	314.0 (ClO4)	200.8 (Cr)	7196A (Hex Cr)	Comments
1	MW-3-2	W	11.5.03	0729	HCl HNO3 NONE	5	III	Normal	X	X	X	X	
2	MW-3-1	↓	↓	0751	↓	↓	↓	↓	X	X	X	X	MS/MSD
3	TB-10-11-5-03	↓	↓	—	HCl	2	↓	↓	X				
4													5973
5													
6													
7													
8													
9													
10													

11.5.03

SAMPLES COLLECTED BY:	COURIER AND AIR BILL NUMBER:				COOLER TEMPERATURE UPON RECEIPT
JL					
RELINQUISHED BY	**RECEIVED BY**	**DATE**	**TIME**	**SAMPLE'S CONDITION UPON RECEIPT**	
		11/5/03	11:15		

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

Applied P & Ch Laboratory
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Sample Receiving Checklist

APCL ServiceID: 5973 **Client Name/Project:** Geofon

1. Sample Arrival

Date/Time Received 11/5/03 1115 Date/Time Opened 11/5/03 1115 By (name): Adam W.

Custody Transfer: ☒ Client ☐ Golden State ☐ UPS ☐ US Mail ☐ FedEx ☐ APCL Empl: _____

2. Chain-of-Custody (CoC)

☒ With Samples? ☐ Faxed? ☒ Client has Copy? ☐ Signed, dated? By: _____

☒ Project ID? ☒ Analyses Clear? ☐ Hold Samples? #on Hold _____ # Received _____

☐ 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 3.8 _____ _____ _____ _____ _____

(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: 5 days ☐ 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: _____ Printed: 5 Nov 2003 7:41 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.

2nd

Applied P & Ch Laboratory
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Sample Login: Check List

03-05973 (0470_ 187) (2202777_ 187)

11/05/03

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?	*Adam Wood*
		Receiving Date/Time:	*11/05/03 1115*
		COC No.	*0069 0077*
☐	Shipping Information	Shipping Company	*by Client*
		Packing Information:	*Cooler/Ice Chester*
		Cooler Temperature:	*3.8 °C*
☐	Container Information	Container Provider:	*Client*
☐	Sampling Information	Sampling Person:	*JR*
		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-9	524.2	03-05973-1-α	W	V	C	40	3	G	110503	N	0	7	☐
	MW-9	CrVI	03-05973-1-β	W	P		500	1	G	110503	N	0	7	☐
2	MW-3-2	524.2	03-05973-3-α	W	V	C	40	3	G	110503	N	0	7	☐
	MW-3-2	CrVI	03-05973-3-β	W	P		500	1	G	110503	N	0	7	☐
3	MW-3-1	524.2	03-05973-2-α	W	V	C	40	6	G	110503	N	0	7	☐
	MW-3-1	CrVI	03-05973-2-β	W	P		500	2	G	110503	N	0	7	☐
4	TB-10-11-5-03	524.2	03-05973-4	W	V	C	40	3	G	110503	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/SM4500NO3C*	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-9	524.2	03-05973-1-α	W	X								☐
	MW-9	CrVI	03-05973-1-β	W		X	X						☐
2	MW-3-2	524.2	03-05973-3-α	W	X								☐
	MW-3-2	CrVI	03-05973-3-β	W		X	X						☐
3	MW-3-1	524.2	03-05973-2-α	W	X								☐

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:	11/06/2003
Project ID:	JPL	Service ID:	35973	Collected by:	
		Lab Sample ID:	03G4717-MB-01	Received Date:	11/06/2003
Sample ID:	**03G4717-MB-01**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Method Blank	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	11/06/03	Anal. Date:	11/06/03
Batch No:	03G4717	Prep. No:	–	Anal. Time:	13:54
Data File Name:	G4717K01	Sample Amount:	25.0 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	0.5	J
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	0.5	<0.5	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	0.5	<0.5	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	108
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	108
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	107
4	TOLUENE-D8	2037-26-5	73-129	108
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	CHLOROBENZENE-D5	3114-55-4	50-200	99
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	97
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.

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:	11/05/2003
Project ID:	JPL	Service ID:	35973	Collected by:	JR
		Lab Sample ID:	03-5973-1	Received Date:	11/05/2003
Sample ID:	**MW-9**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	11/06/03	Anal. Date:	11/06/03
Batch No:	03G4717	Prep. No:	–	Anal. Time:	15:38
Data File Name:	5973-01	Sample Amount:	25.0 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	0.5	<0.5	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	0.5	<0.5	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	1-BROMO-4-FLUOROBENZENE (4-BROMOFL	460-00-4	70-129	107
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	106
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	106
4	TOLUENE-D8	2037-26-5	73-129	108
# 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	95
3	FLUOROBENZENE	462-06-6	50-200	101
# 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

Applied P & Ch Laboratory

Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	11/05/2003
Project ID:	JPL	Service ID:	35973	Collected by:	JR
		Lab Sample ID:	03-5973-2	Received Date:	11/05/2003
Sample ID:	**MW-3-1**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	11/06/03	Anal. Date:	11/06/03
Batch No:	03G4717	Prep. No:	–	Anal. Time:	15:12
Data File Name:	5973-02	Sample Amount:	25.0 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
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15	CHLOROFORM	67-66-3	µg/L	0.5	<0.5	U
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19	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	µg/L	0.5	<0.5	U
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29	CIS-1,2-DICHLOROETHENE	156-59-2	µg/L	0.5	<0.5	U
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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	0.5	<0.5	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	1-BROMO-4-FLUOROBENZENE (4-BROMOFL	460-00-4	70-129	108
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	107
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	105
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	97
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	94
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.

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:	11/05/2003
Project ID:	JPL	Service ID:	35973	Collected by:	JR
		Lab Sample ID:	03-5973-3	Received Date:	11/05/2003
Sample ID:	**MW-3-2**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	11/06/03	Anal. Date:	11/06/03
Batch No:	03G4717	Prep. No:	–	Anal. Time:	16:04
Data File Name:	5973-03	Sample Amount:	25.0 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	0.8	
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	0.5	<0.5	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	0.5	<0.5	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	0.3	J
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	108
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	109
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	108
4	TOLUENE-D8	2037-26-5	73-129	109
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	CHLOROBENZENE-D5	3114-55-4	50-200	96
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	95
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.

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:	11/05/2003
Project ID:	JPL	Service ID:	35973	Collected by:	JR
		Lab Sample ID:	03-5973-4	Received Date:	11/05/2003
Sample ID:	**TB-10-11-5-03**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	11/06/03	Anal. Date:	11/06/03
Batch No:	03G4717	Prep. No:	–	Anal. Time:	14:46
Data File Name:	5973-04	Sample Amount:	25.0 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	0.5	<0.5	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	0.5	0.5	J
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	106
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	107
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	105
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	99
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	96
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.

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-2A

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:	035973
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03G4717		

#	Client Sample No	Lab Sample ID	S1 %	#	S2 %	#	S3 %	#	S4 %	#	TOT OUT
1	03G4717-LCS-01	03G4717-LCS-01	96		98		97		96		0
2	MW-3-1MS	03-5973-2MS	98		97		97		94		0
3	MW-3-1MSD	03-5973-2MSD	92		97		95		92		0
4	03G4717-MB-01	03G4717-MB-01	108		108		107		108		0
5	TB-10-11-5-03	03-5973-4	106		107		105		107		0
6	MW-3-1	03-5973-2	108		107		105		107		0
7	MW-9	03-5973-1	107		106		106		108		0
8	MW-3-2	03-5973-3	108		109		108		109		0
9											
10											
11											
12											
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:	35973
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03G4717		
LCS Filename:	G4717L01	Date Analyzed:	110603	Time Analyzed:	10:53
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	17.9	90	65-120
CHLOROBENZENE	µg/L	20	0	18.9	95	65-134
1,1-DICHLOROETHENE	µg/L	20	0	20.8	104	65-127
TOLUENE	µg/L	20	0	17.8	89	65-134
TRICHLOROETHENE	µg/L	20	0	19.6	98	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: _____

_____

FORM-3A

Applied P & Ch Laboratory

Matrix Spike/Matrix Spike Duplicate Recovery for Method 524.2

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	35973
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03G4717		
MS Filename:	G4717M01	Date Analyzed:	110603	Time Analyzed:	11:19
MSD Filename:	G4717N01	Date Analyzed:	110603	Time Analyzed:	11:44
MS Sample No:	**MW-3-1**	Sample Lab ID:	03-5973-2		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
BENZENE	µg/L	20	0	17.9	90	65-121
CHLOROBENZENE	µg/L	20	0	18.6	93	65-134
1,1-DICHLOROETHENE	µg/L	20	0	21.1	106	65-127
TOLUENE	µg/L	20	0	17.6	88	65-134
TRICHLOROETHENE	µg/L	20	0	19.5	98	65-125
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
BENZENE	µg/L	20	17.6	88	2	28	65-121
CHLOROBENZENE	µg/L	20	18.1	91	2	35	65-134
1,1-DICHLOROETHENE	µg/L	20	20.9	105	1	31	65-127
TOLUENE	µg/L	20	17.3	87	1	35	65-134
TRICHLOROETHENE	µg/L	20	19.6	98	0	30	65-125
# 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-4A

Applied P & Ch Laboratory

Method Blank Summary for Method 524.2

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	35973
Project ID:	JPL	Project No:	04-4428.10	Analysis Date:	11/06/03
		Sample Matrix:	Water	Analysis Time:	13:54
Sample ID:	**03G4717-MB-01**	Batch No:	03G4717	Instrument ID:	GC/MS: A
Lab Sample ID:	03G4717-MB-01	Data File Name:	G4717K01	GC Column:	HP-VOC
		Heated Purge: (Y/N)	N	Column ID:	0.20 mm

This Method Blank applies to the following samples and QC samples:

#	Client Sample No	Lab Sample ID	Sample Type	Data Filename	Analysis Date	Analysis Time
1	03G4717-LCS-01	03G4717-LCS-01	Lab Control Spike	G4717L01	11/06/03	10:53
2	MW-3-1MS	03-5973-2MS	Matrix Spike	G4717M01	11/06/03	11:19
3	MW-3-1MSD	03-5973-2MSD	Matrix Spike Duplicate	G4717N01	11/06/03	11:44
4	TB-10-11-5-03	03-5973-4	Field Sample	5973-04	11/06/03	14:46
5	MW-3-1	03-5973-2	Field Sample	5973-02	11/06/03	15:12
6	MW-9	03-5973-1	Field Sample	5973-01	11/06/03	15:38
7	MW-3-2	03-5973-3	Field Sample	5973-03	11/06/03	16:04
8						
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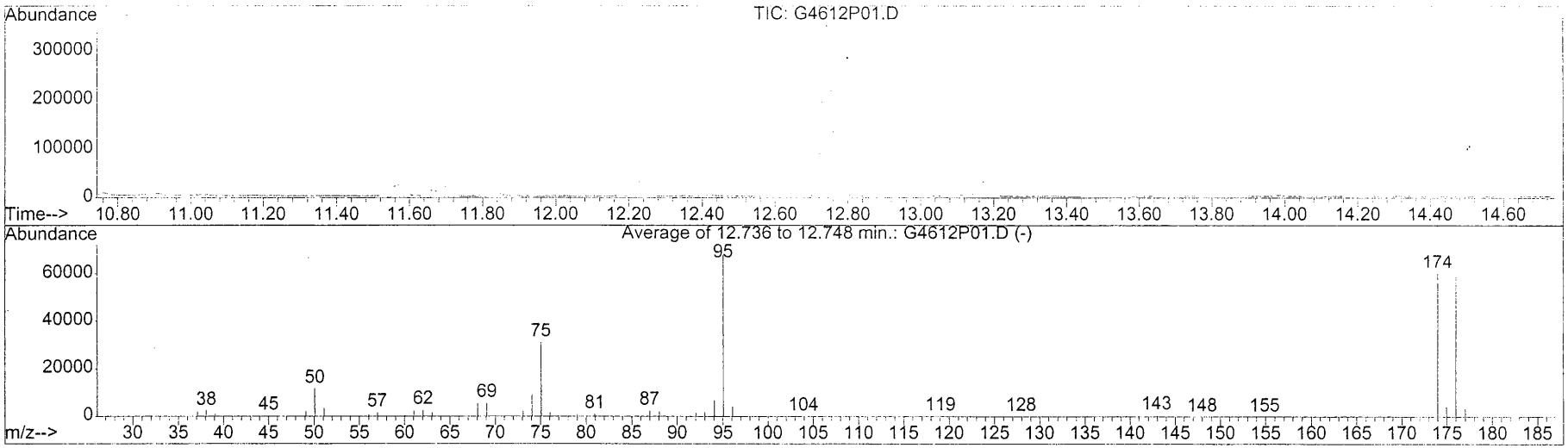
22						
23						
24						
25						

Data File : C:\MSDCHEM\1\DATA\03G4612\G4612P01.D Vial: 1
Acq On : 21 Oct 2003 9:14 am Operator: zou
Sample : ##03g4565,w 50ng Inst : GCMS-A
Misc : Multiplr: 1.00
MS Integration Params: Lscint.p
Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2



Spectrum Information: Average of 12.736 to 12.748 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.0	11745	PASS
75	95	30	60	45.0	31162	PASS
95	95	100	100	100.0	69181	PASS
96	95	5	9	6.6	4558	PASS
173	174	0.00	2	0.5	275	PASS
174	95	50	100	87.4	60456	PASS
175	174	5	9	7.7	4634	PASS
176	174	95	101	98.1	59312	PASS
177	176	5	9	7.0	4135	PASS

G4612P01.D E524A003.M Mon Oct 27 13:27:33 2003

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name : APPLIED P & CH LAB Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 035973

Lab File ID: G4612 P01 BFB Injection Date: 10/21/2003

Instrument ID: GCMS-A BFB Injection Time: 0914

GC Column: HP-VOC ID: 0.20 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.0
75	30.0 - 60.0% of mass 95	45.0
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.4 (0.5)1
174	50.0 - 100.0% of mass 95	87.4
175	5.0 - 9.0% of mass 174	6.7 (7.7)1
176	95.0 - 101.0% of mass 174	85.7 (98.1)1
177	5.0 - 9.0% of mass 176	6.0 (7.0)2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following SAMPLES, MS, MSD, BLANKS and STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0003	3-A0003	3-A0003.D	10/21/2003	1005
02	VSTD002	3-0002	3-0002.D	10/21/2003	1031
03	VSTD010	3-0010	3-0010.D	10/21/2003	1056
04	VSTD020	3-0020	3-0020.D	10/21/2003	1122
05	VSTD040	3-0040	3-0040.D	10/21/2003	1147
06	VSTD060	3-0060	3-0060.D	10/21/2003	1214
07					
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22					

INITIAL CALIBRATION SUMMARY

Method File	e524a003		
Last Calibration Update	Mon Oct 27 13:56:31 2003		
Level 1 File Name	3-A0003.D	**Level 1 ID**	.3
Level 2 File Name	3-002.D	**Level 2 ID**	2
Level 3 File Name	3-0010.D	**Level 3 ID**	10
Level 4 File Name	3-0020.D	**Level 4 ID**	20
Level 5 File Name	3-0040.D	**Level 5 ID**	40
Level 6 File Name	3-0060.D	**Level 6 ID**	60
Level 7 File Name	3-0020.D	**Level 7 ID**	cc

Compound Name	Level 1 Response	Level 2 Response	Level 3 Response	Level 4 Response	Level 5 Response	Level 6 Response	Level 7 Response	Coeff X^0	Coeff X^1 / ave RF	Coeff X^2	R^2 / RSD
1 Fluorobenzene	920067	916201	919392	955116	907151	1006211	-1	------	------	------	------
3 di-Cl-di-F-methane	6437	39097	199979	303885	731076	1099511	-1	0.0000	0.2011	0.0000	0.1330
4 Chloromethane	6136	37417	181676	348991	739859	1132557	-1	0.0000	0.1997	0.0000	0.0704
2 F114	1527	19306	101058	155932	367886	551592	-1	0.0028	0.0932	0.0000	0.9919
5 vinyl chloride	4876	33446	161213	285451	640709	982033	-1	0.0000	0.1705	0.0000	0.0717
6 bromomethane	2539	18408	87613	168214	383891	601141	-1	0.0000	0.0969	0.0000	0.0659
7 chloroethane	2197	17752	90280	159905	376464	536590	-1	0.0000	0.0918	0.0000	0.1013
8 tri-Cl-F-methane	8394	56082	277768	461283	1030751	1532166	-1	0.0000	0.2819	0.0000	0.0992
91 Acetonitrile X10	10689	82041	382813	794170	1713507	2428244	-1	0.0000	0.0431	0.0000	0.0662
9 acrolein X10	5645	40130	201945	381523	807796	1232252	-1	0.0000	0.0212	0.0000	0.0467
11 acetone X10	-1	64324	288996	538495	1267205	1816586	-1	0.0000	0.0319	0.0000	0.0947
12 ethyl ether X5	13693	93915	436367	874255	1704647	2654028	-1	0.0000	0.0950	0.0000	0.0552
13 11-dichloroethene	6637	46215	229524	410040	877445	1367991	-1	0.0000	0.2376	0.0000	0.0605
14 Iodomethane	3461	29384	183879	356970	751141	1123042	-1	0.0038	0.1913	0.0000	0.9951
15 F-113	4492	28088	146108	224035	516639	784890	-1	0.0000	0.1441	0.0000	0.1231
16 acrylonitrile X10	10574	78358	419836	794346	1709905	2532493	-1	0.0000	0.0429	0.0000	0.0731
17 carbon disulfide	13839	85463	420250	772812	1671671	2561651	-1	0.0000	0.4524	0.0000	0.0750
94 Isopropyl Alcoholx10	331	1284	1238	28714	240070	128634	-1	0.0000	0.0020	0.0000	1.1427
18 methylene chloride	10278	48191	203033	407143	804880	1192483	-1	0.0203	0.2012	0.0000	0.9947
19 t-12-di-Cl-ethene	6615	45733	217854	407874	774111	1126298	-1	0.0000	0.2233	0.0000	0.1039
20 t-Bu-Me-ether	9529	70095	362056	751228	1592599	2437498	-1	0.0000	0.3929	0.0000	0.0773
95 Tert butyl alcoholx10	1332	4624	88338	76985	452680	251872	-1	0.0000	0.0066	0.0000	0.6496

94 allyl chloride	10689	82041	426268	794170	1724483	2428244	-1	0.0000	0.4409	0.0000	0.0706
21 11-dichloroethane	10035	71189	342138	689918	1398310	2101878	-1	0.0000	0.3698	0.0000	0.0415
97 propionitrile	103	3119	18745	29270	62391	109975	-1	0.0000	0.0176	0.0000	0.1055
22 c-12-di-Cl-ethene	6459	46844	225560	436935	845644	1210430	-1	0.0000	0.2329	0.0000	0.0801
23 22-Dichloropropane	5693	38859	218612	456844	979998	1513030	-1	0.0000	0.2360	0.0000	0.1011
24 Br-Cl-methane	3294	23046	109590	215148	438926	655419	-1	0.0000	0.1177	0.0000	0.0523
25 chloroform	13164	80631	375460	741683	1492648	2229387	-1	0.0000	0.4157	0.0000	0.0920
26 tetrahydrofuranX5	4044	28808	169729	317711	726346	1114014	-1	0.0000	0.0346	0.0000	0.1155
98 Diisopropyl ether	16931	136442	688556	1387177	2723439	4088155	-1	0.0000	0.7101	0.0000	0.0772
27 Di-Br-F-Me (surr)	6137	45047	218874	439096	880145	1314263	-1	0.0000	0.2348	0.0000	0.0481
99 ETBE	9591	74005	411030	879689	1934215	2984281	-1	0.0000	0.4477	0.0000	0.1468
29 1,2-Di-Cl-Et-d4 (S1)	5167	39287	192209	385356	801084	1206050	-1	0.0000	0.2091	0.0000	0.0418
30 12-dichloroethane	2318	14864	77221	146461	303955	463659	-1	0.0000	0.0811	0.0000	0.0434
32 vinyl acetate X5	36279	291623	1683396	3463521	7301957	11062661	-1	0.0000	0.3465	0.0000	0.1412
92 Nitro Methane(x10)	1574	10571	358371	95786	134103	298076	-1	0.0000	0.0117	0.0000	1.3083
33 2-butanoneMEK X10	14739	98541	459782	956754	2014463	3034414	-1	0.0000	0.0522	0.0000	0.0453
93 Ethyl Acetate x2	6463	37342	237607	465630	1199719	1687653	-1	0.0000	0.1292	0.0000	0.1682
34 111-trichloroethane	9393	63933	333945	629233	1352461	2070811	-1	0.0000	0.3496	0.0000	0.0454
35 11-Di-Cl-propene	6749	49362	260487	484228	1020849	1516179	-1	0.0000	0.2639	0.0000	0.0625
36 benzene	23536	167998	811668	1581767	3067808	4519766	-1	0.0000	0.8457	0.0000	0.0673
37 CCl4	9052	59763	312695	555550	1228562	1842053	-1	0.0000	0.3215	0.0000	0.0608

Compound Name	Level 1 Response	Level 2 Response	Level 3 Response	Level 4 Response	Level 5 Response	Level 6 Response	Level 7 Response	Coeff X^0	Coeff X^1 / ave RF	Coeff X^2	R^2 / RSD
100 Isobutyl alcoholx10	2932	21047	112031	247109	552842	880424	-1	------	------	------	------
38 thiophene	10222	83170	428533	868274	1718044	2554816	-1	0.0000	0.4403	0.0000	0.0870
39 12-di-Cl-propane	4815	37555	178169	370946	752605	1124998	-1	0.0000	0.1935	0.0000	0.0628
40 trichloroethene	7696	50098	255616	501517	1020048	1520360	-1	0.0000	0.2710	0.0000	0.0423
41 dibromomethane	3770	26033	124373	247759	508912	747601	-1	0.0000	0.1346	0.0000	0.0506
101 TAME	7879	59032	335735	716981	1622049	2525816	-1	-0.0345	0.4304	0.0000	0.9963
42 Br-di-Cl-methane	9392	56733	274489	546104	1129675	1703118	-1	0.0000	0.3046	0.0000	0.0694
43 Me-methacrylate	1457	14747	87065	188318	435160	662734	-1	-0.0095	0.1138	0.0000	0.9946
44 2-ClEt-Vi-ether10	4887	45249	275793	591932	1294105	1950851	-1	-0.0367	0.0357	0.0000	0.9955
45 c-13-di-Cl-propene	6769	54923	293425	608486	1252896	1891415	-1	0.0000	0.3069	0.0000	0.1096
46 t-1,3-dichloropropene	5153	40425	231011	505285	1067475	1638452	-1	-0.0097	0.2792	0.0000	0.9968
47 Chlorobezene-d5	745928	732691	724575	731811	659336	705610	-1	0.0000	1.0000	0.0000	0.0000

48 112-tri-Cl-Et	4896	31570	158039	308164	644393	936372	-1	0.0000	0.2214	0.0000	0.0533
49 13-di-Cl-propane	7569	48826	251096	479955	958048	1392110	-1	0.0000	0.3397	0.0000	0.0396
50 Et methacrylate	2785	29334	189197	404574	897662	1374874	-1	-0.0430	0.3345	0.0000	0.9960

Compound Name	Level 1 Response	Level 2 Response	Level 3 Response	Level 4 Response	Level 5 Response	Level 6 Response	Level 7 Response	Coeff X^0	Coeff X^1 / ave RF	Coeff X^2	R^2 / RSD
51 di-Br-Cl-methane	7359	44728	219307	430191	895491	1332246	-1	0.0000	0.3141	0.0000	0.0548
52 bromoform	4029	26611	127022	257402	537161	813031	-1	0.0000	0.1848	0.0000	0.0599
53 1,4-dichlorobutane-2	7248	52525	270048	530472	1118631	1708578	-1	0.0000	0.3742	0.0000	0.0947
54 MIBK	2727	20267	114402	244409	567049	883730	-1	-0.0334	0.2144	0.0000	0.9947
55 toluene-d8	22176	162055	811859	1597728	3175057	4699033	-1	0.0000	1.1038	0.0000	0.0617
56 toluene	32453	204349	957684	1867212	3679239	5453434	-1	0.0000	1.3542	0.0000	0.0513
57 2-hexanone X5	8296	70148	400071	806303	1789801	2714840	-1	-0.0660	0.1318	0.0000	0.9958
58 12-dibromoethane	4393	32436	159989	322735	683020	1029927	-1	0.0000	0.2269	0.0000	0.0954
59 tetra-Cl-ethene	8603	59173	281865	498130	1001817	1436032	-1	0.0000	0.3728	0.0000	0.0719
60 chlorobenzene	21200	144953	676974	1307160	2492370	3536493	-1	0.0000	0.9241	0.0000	0.0576
61 1112-tetra-Cl-Et	7365	51367	249086	487380	969491	1437439	-1	0.0000	0.3439	0.0000	0.0403
62 1,4-Dichlorobenzene-d4	436784	441685	431820	433290	398842	428493	-1	0.0000	1.0000	0.0000	0.0000
63 1-chlorohexane	3125	20185	105292	181129	379300	546400	-1	0.0000	0.2284	0.0000	0.0636
64 Et-Bz	31613	225200	1128701	2162672	4307205	6378701	-1	0.0000	2.5420	0.0000	0.0404
65 m/p-Xylenes X2	51588	364290	1753788	3322945	6407191	9314343	-1	0.0000	1.9663	0.0000	0.0463
66 styrene	19899	158986	755749	1448349	2712603	3842415	-1	0.0000	1.6558	0.0000	0.0748
67 o-xylene	25030	181225	888564	1715323	3289680	4761198	-1	0.0000	1.9855	0.0000	0.0445
68 1122-Tetra-Cl-Et	4786	35408	176142	333638	679431	1005365	-1	0.0000	0.3960	0.0000	0.0524
69 123-tri-Cl-Pr	1463	11857	58506	111098	231129	345542	-1	0.0000	0.1315	0.0000	0.0844
70 4-Br-1-F-Bz (S3)	9236	60769	292727	571173	1114624	1638683	-1	0.0000	0.6776	0.0000	0.0376
71 isopropylbenzene	31809	228075	1204677	2257352	4576796	6821750	-1	0.0000	2.6544	0.0000	0.0592
72 bromobenzene	8279	62596	299551	577972	1123002	1610222	-1	0.0000	0.6719	0.0000	0.0539
92 t-1,4-dichloro-2-butene	370	3850	26890	58909	138278	214154	-1	-0.0139	0.0860	0.0000	0.9950
73 n-propylbenzene	9091	70513	355352	656540	1290074	1877926	-1	0.0000	0.7686	0.0000	0.0653
74 2-Cl-Toluene	7570	61543	297725	558317	1084812	1601091	-1	0.0000	0.6518	0.0000	0.0707
75 4-Cl-Toluene	9182	64367	296683	566381	1062470	1497703	-1	0.0000	0.6698	0.0000	0.0750
76 135-tri-Me-Benzene	28727	213694	1063069	2008540	3906361	5670674	-1	0.0000	2.3409	0.0000	0.0517
77 4-iso-Pr-toluene	31720	226621	1149787	2111126	4215398	6174914	-1	0.0000	2.5215	0.0000	0.0463
78 124-tri-Me-Benzene	29971	222021	1078747	2103275	4147713	6124395	-1	0.0000	2.4513	0.0000	0.0448
79 tert-butylbenzene	24279	177466	929162	1736357	3598467	5289165	-1	0.0000	2.0550	0.0000	0.0671

80 13-DCB	19447	131664	611576	1176380	2227519	3166301	-1	0.0000	1.3960	0.0000	0.0684
81 sec-butylbenzene	38627	268975	1387531	2530666	5231475	7732088	-1	0.0000	3.0688	0.0000	0.0475
82 14-DCB	21754	133604	619366	1184125	2334471	3417867	-1	0.0000	1.4610	0.0000	0.0806
83 Cl-benzyl	871	5857	44122	106539	268318	431461	-1	-0.0412	0.1731	0.0000	0.9920
84 12-DCB	17721	121367	559240	1055514	2046326	2953834	-1	0.0000	1.2785	0.0000	0.0657
85 n-butylbenzene	8164	59910	307483	567085	1127859	1596385	-1	0.0000	0.6659	0.0000	0.0599
86 12-diBr-2-Cl-Pra	1032	7477	40003	83208	177685	276212	-1	0.0000	0.0951	0.0000	0.1330
87 124-tri-Cl-Bz	9169	66792	354819	702123	1402301	2085639	-1	0.0000	0.7963	0.0000	0.0771
88 naphthalene	11079	87277	545491	1159824	2506296	3927146	-1	-0.1762	1.5623	0.0000	0.9976
89 hx-Cl-butadiene	6445	40287	205532	360400	746186	1096494	-1	0.0000	0.4557	0.0000	0.0644
90 123-Tri-Cl-Bz	7754	57941	307963	600915	1229181	1798500	-1	0.0000	0.6874	0.0000	0.0870

1326

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 13:56:31 2003
Response via : Initial Calibration

Calibration Files
.3 =3-A0003.D 2 =3-002.D 10 =3-0010.D
20 =3-0020.D 40 =3-0040.D 60 =3-0060.D

			Compound	.3	2	10	20	40	60	Avg	%RSD	r2
1)	I	1	Fluorobenzene	ISTD								
2)		3	di-Cl-di-F-m	0.233	0.213	0.218	0.159	0.201	0.182	0.201	13.30	
3)	p	4	Chloromethan	0.222	0.204	0.198	0.183	0.204	0.188	0.200	7.04	
4)		2	F114	0.055	0.105	0.110	0.082	0.101	0.091	0.091	22.20	0.990
5)	C	5	vinyl chlori	0.177	0.183	0.175	0.149	0.177	0.163	0.171	7.17	
6)		6	bromomethane	0.092	0.100	0.095	0.088	0.106	0.100	0.097	6.59	
7)		7	chloroethane	0.080	0.097	0.098	0.084	0.104	0.089	0.092	10.13	
8)		8	tri-Cl-F-met	0.304	0.306	0.302	0.241	0.284	0.254	0.282	9.92	
9)		91	Acetonitrile		0.045	0.042	0.042	0.047	0.040	0.043	6.62	
10)		9	acrolein	0.020	0.022	0.022	0.020	0.022	0.020	0.021	4.67	
11)		11	acetone X		0.035	0.031	0.028	0.035	0.030	0.032	9.47	
12)		12	ethyl ether	0.099	0.103	0.095	0.092	0.094	0.088	0.095	5.52	
13)	M, C13	11	-dichloroe	0.240	0.252	0.250	0.215	0.242	0.227	0.238	6.05#	
14)		14	Iodomethane	0.125	0.160	0.200	0.187	0.207	0.186	0.178	16.98	0.995
15)		15	F-113	0.163	0.153	0.159	0.117	0.142	0.130	0.144	12.31	
16)		16	acrylonitril	0.038	0.043	0.046	0.042	0.047	0.042	0.043	7.31	
17)		17	carbon disul	0.501	0.466	0.457	0.405	0.461	0.424	0.452	7.50	
18)		94	Isopropyl Al	0.001	0.001	0.000	0.002	0.007	0.002	0.002	114.27	
19)		18	methylene ch	0.372	0.263	0.221	0.213	0.222	0.198	0.248	26.04	0.995
20)		19	t-12-di-Cl-e	0.240	0.250	0.237	0.214	0.213	0.187	0.223	10.39	
21)		20	t-Bu-Me-ethe	0.345	0.383	0.394	0.393	0.439	0.404	0.393	7.73	
22)		95	Tert butyl a		0.003	0.010	0.004	0.012	0.004	0.007	64.96	
23)		94	allyl chlori		0.448	0.464	0.416	0.475	0.402	0.441	7.06	
24)	p	21	11-dichloroe	0.364	0.389	0.372	0.361	0.385	0.348	0.370	4.15	
25)		97	propionitril		0.017	0.020	0.015	0.017	0.018	0.018	10.55	
26)		22	c-12-di-Cl-e	0.234	0.256	0.245	0.229	0.233	0.200	0.233	8.01	
27)		23	22-Dichlorop	0.206	0.212	0.238	0.239	0.270	0.251	0.236	10.11	
28)		24	Br-Cl-methan	0.119	0.126	0.119	0.113	0.121	0.109	0.118	5.23	

(#) = Out of Range

Response F or Report GCMS-A

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 13:56:31 2003
Response via : Initial Calibration

Calibration Files
.3 =3-A0003.D 2 =3-002.D 10 =3-0010.D
20 =3-0020.D 40 =3-0040.D 60 =3-0060.D

			Compound	.3	2	10	20	40	60	Avg	%RSD	
29)	C	25	chloroform	0.477	0.440	0.408	0.388	0.411	0.369	0.416	9.20	
30)		26	tetrahydrofu	0.029	0.031	0.037	0.033	0.040	0.037	0.035	11.55	
31)		98	Diisopropyl	0.613	0.745	0.749	0.726	0.751	0.677	0.710	7.72	
32)	S	27	Di-Br-F-Me (		0.246	0.238	0.230	0.243	0.218	0.235	4.81	
33)		99	ETBE	0.347	0.404	0.447	0.461	0.533	0.494	0.448	14.68	
34)	S	29	1,2-Di-Cl-Et		0.214	0.209	0.202	0.221	0.200	0.209	4.18	
35)		30	12-dichloroe	0.084	0.081	0.084	0.077	0.084	0.077	0.081	4.34	
36)		32	vinyl acetat	0.263	0.318	0.366	0.363	0.402	0.366	0.346	14.12	
37)		92	Nitro Methan		0.006	0.039	0.005	0.004	0.005	0.012	130.83	
38)		33	2-butanoneME	0.053	0.054	0.050	0.050	0.056	0.050	0.052	4.53	
39)		93	Ethyl Acetat	0.117	0.102	0.129	0.122	0.165	0.140	0.129	16.82	
40)		34	111-trichlor	0.340	0.349	0.363	0.329	0.373	0.343	0.350	4.54	
41)		35	11-Di-Cl-pro	0.245	0.269	0.283	0.253	0.281	0.251	0.264	6.25	
42)	M	36	benzene	0.853	0.917	0.883	0.828	0.845	0.749	0.846	6.73	
43)		37	CCl4	0.328	0.326	0.340	0.291	0.339	0.305	0.321	6.08	
44)		100	Isobutyl al	0.011	0.011	0.012	0.013	0.015	0.015	0.013	13.92	
45)		38	thiophene	0.370	0.454	0.466	0.455	0.473	0.423	0.440	8.70	
46)	C	39	12-di-Cl-pro	0.174	0.205	0.194	0.194	0.207	0.186	0.194	6.28#	
47)	M	40	trichloroeth	0.279	0.273	0.278	0.263	0.281	0.252	0.271	4.23	
48)		41	dibromometha	0.137	0.142	0.135	0.130	0.140	0.124	0.135	5.06	
49)		101	TAME	0.285	0.322	0.365	0.375	0.447	0.418	0.369	16.15	0.995
50)		42	Br-di-Cl-met	0.340	0.310	0.299	0.286	0.311	0.282	0.305	6.94	
51)		43	Me-methacryl	0.053	0.080	0.095	0.099	0.120	0.110	0.093	25.59	0.994
52)		44	2-ClEt-Vi-et	0.018	0.025	0.030	0.031	0.036		0.028	24.68	0.993
53)		45	c-13-di-Cl-p	0.245	0.300	0.319	0.319	0.345	0.313	0.307	10.96	
54)		46	t-1,3-dichlo	0.187	0.221	0.251	0.265	0.294	0.271	0.248	15.58	0.997
55)	I	47	Chlorobezene-d5	----------ISTD----------								
56)		48	112-tri-Cl-E	0.219	0.215	0.218	0.211	0.244	0.221	0.221	5.33	

(#) = Out of Range

Response F or Report GCMS-A

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 13:56:31 2003
Response via : Initial Calibration

Calibration Files
.3 =3-A0003.D 2 =3-002.D 10 =3-0010.D
20 =3-0020.D 40 =3-0040.D 60 =3-0060.D

			Compound	.3	2	10	20	40	60	Avg	%RSD	
57)		49	13-di-Cl-pro	0.338	0.333	0.347	0.328	0.363	0.329	0.340	3.96	
58)		50	Et methacryl	0.124	0.200	0.261	0.276	0.340	0.325	0.255	31.77	0.995
59)		51	di-Br-Cl-met	0.329	0.305	0.303	0.294	0.340	0.315	0.314	5.48	
60)	P	52	bromoform	0.180	0.182	0.175	0.176	0.204	0.192	0.185	5.99	
61)		53	1,4-dichloro	0.324	0.358	0.373	0.362	0.424	0.404	0.374	9.47	
62)		54	MIBK	0.122	0.138	0.158	0.167	0.215	0.209	0.168	22.23	0.992
63)	s	55	toluene-d8	0.991	1.106	1.120	1.092	1.204	1.110	1.104	6.17	
64)	M,C	56	toluene	1.450	1.395	1.322	1.276	1.395	1.288	1.354	5.13	
65)		57	2-hexanone X	0.074	0.096	0.110	0.110	0.136	0.128	0.109	20.41	0.994
66)		58	12-dibromoet	0.196	0.221	0.221	0.221	0.259	0.243	0.227	9.54	
67)		59	tetra-Cl-eth	0.384	0.404	0.389	0.340	0.380	0.339	0.373	7.19	
68)	M,P	60	chlorobenzen	0.947	0.989	0.934	0.893	0.945	0.835	0.924	5.76	
69)		61	1112-tetra-C	0.329	0.351	0.344	0.333	0.368	0.340	0.344	4.03	
70)	I	62	1,4-Dichlorobenzen	----------	----------	----------	ISTD	----------	----------	----------	----------	
71)		63	1-chlorohexa	0.238	0.228	0.244	0.209	0.238	0.213	0.228	6.36	
72)	C	64	Et-Bz	2.413	2.549	2.614	2.496	2.700	2.481	2.542	4.04#	
73)		65	m/p-Xylenes	1.968	2.062	2.031	1.917	2.008	1.811	1.966	4.63	
74)		66	styrene	1.519	1.800	1.750	1.671	1.700	1.495	1.656	7.48	
75)		67	o-xylene	1.910	2.052	2.058	1.979	2.062	1.852	1.985	4.45	
76)	p	68	1122-Tetra-C	0.365	0.401	0.408	0.385	0.426	0.391	0.396	5.24	
77)		69	123-tri-Cl-P	0.112	0.134	0.135	0.128	0.145	0.134	0.131	8.44	
78)	S	70	4-Br-1-F-Bz	0.705	0.688	0.678	0.659	0.699	0.637	0.678	3.76	
79)		71	isopropylben	2.428	2.582	2.790	2.605	2.869	2.653	2.654	5.92	
80)		72	bromobenzene	0.632	0.709	0.694	0.667	0.704	0.626	0.672	5.39	
81)		92	t-1,4-dichlo	0.028	0.044	0.062	0.068	0.087	0.083	0.062	36.62	0.993
82)		73	n-propylbenz	0.694	0.798	0.823	0.758	0.809	0.730	0.769	6.53	
83)		74	2-Cl-Toluene	0.578	0.697	0.689	0.644	0.680	0.623	0.652	7.07	
84)		75	4-Cl-Toluene	0.701	0.729	0.687	0.654	0.666	0.583	0.670	7.50	

(#) = Out of Range

1329

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 13:56:31 2003
Response via : Initial Calibration

Calibration Files
.3 =3-A0003.D 2 =3-002.D 10 =3-0010.D
20 =3-0020.D 40 =3-0040.D 60 =3-0060.D

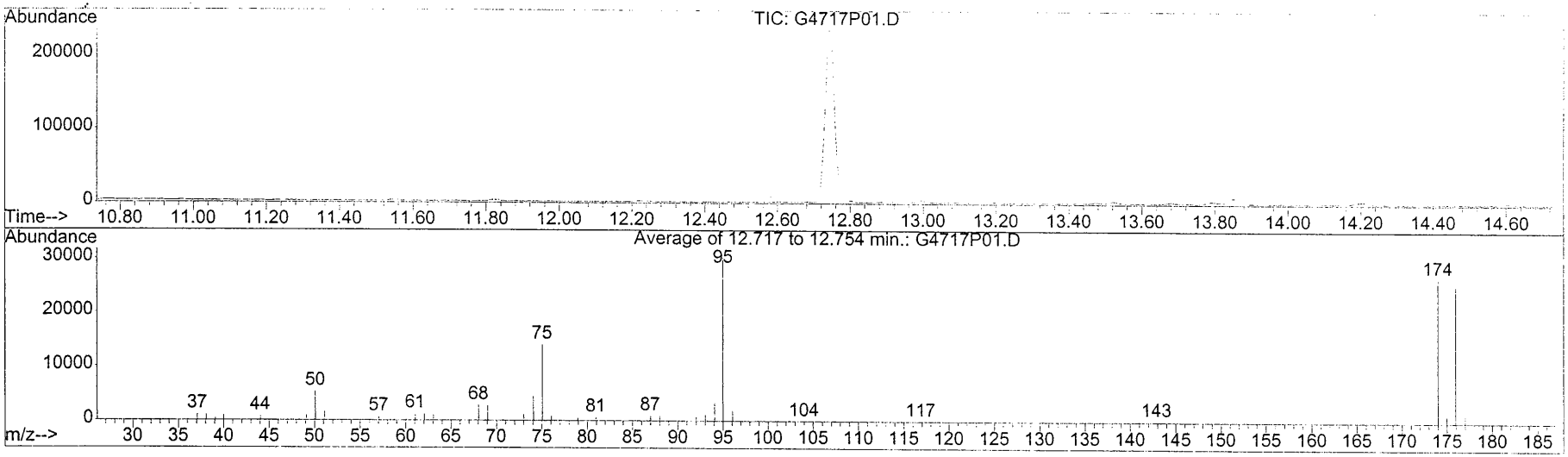
		Compound	.3	2	10	20	40	60	Avg	%RSD	
85)	76	135-tri-Me-B	2.192	2.419	2.462	2.318	2.449	2.206	2.341	5.17	
86)	77	4-iso-Pr-tol	2.421	2.565	2.663	2.436	2.642	2.402	2.522	4.63	
87)	78	124-tri-Me-B	2.287	2.513	2.498	2.427	2.600	2.382	2.451	4.48	
88)	79	tert-butylbe	1.853	2.009	2.152	2.004	2.256	2.057	2.055	6.71	
89)	80	13-DCB	1.484	1.490	1.416	1.357	1.396	1.232	1.396	6.84	
90)	81	sec-butylben	2.948	3.045	3.213	2.920	3.279	3.007	3.069	4.75	
91)	82	14-DCB	1.660	1.512	1.434	1.366	1.463	1.329	1.461	8.06	
92)	83	Cl-benzyl	0.066	0.066	0.102	0.123	0.168	0.168	0.116	39.76	0.989
93)	84	12-DCB	1.352	1.374	1.295	1.218	1.283	1.149	1.278	6.57	
94)	85	n-butylbenze	0.623	0.678	0.712	0.654	0.707	0.621	0.666	5.99	
95)	86	12-diBr-2-Cl	0.079	0.085	0.093	0.096	0.111	0.107	0.095	13.30	
96)	87	124-tri-Cl-B	0.700	0.756	0.822	0.810	0.879	0.811	0.796	7.71	
97)	88	naphthalene	0.845	0.988	1.263	1.338	1.571	1.528	1.256	23.09	0.997
98)	89	hx-Cl-butadi	0.492	0.456	0.476	0.416	0.468	0.426	0.456	6.44	
99)	90	123-Tri-Cl-B	0.592	0.656	0.713	0.693	0.770	0.700	0.687	8.70	

(#) = Out of Range

BFB

Data File : C:\MSDCHEM\1\DATA\03G4717\G4717P01.D
Acq On : 6 Nov 2003 10:02 am
Sample : ##03g4717, w 50 ng
Misc :
MS Integration Params: Lscint.p
Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2

Vial: 1
Operator: zou
Inst : GCMS-A
Multiplr: 1.00



Spectrum Information: Average of 12.717 to 12.754 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.7	5373	PASS
75	95	30	60	46.6	14115	PASS
95	95	100	100	100.0	30317	PASS
96	95	5	9	6.7	2038	PASS
173	174	0.00	2	0.5	124	PASS
174	95	50	100	88.2	26740	PASS
175	174	5	9	7.7	2050	PASS
176	174	95	101	96.2	25730	PASS
177	176	5	9	6.2	1595	PASS

G4717P01.D E524A003.M Thu Nov 06 17:48:26 2003

FORM-5A

Applied P & Ch Laboratory

Volatile Organic Instrument Performance Check for Method 524.2

Bromofluorobenzene (BFB), Part II

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	035973
Project ID:	JPL	BFB Inj. Date:	11/06/03	Batch No:	03G4717
		BFB Inj. Time:	10:02	Sequence No:	03G4717
Project No:	04-4428.10	Instrument ID:	A	GC Column:	HP-VOC
Data File Name:	G4717P01	Heated Purge: (Y/N)	N	Column ID:	0.20 mm

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

#	Client Sample No	Lab Sample ID	Data File Name	Date Analyzed	Time Analyzed
1	03G4717-CCV-01	03G4717-CCV-01	G4717Q01	11/06/03	10:27
2	03G4717-LCS-01	03G4717-LCS-01	G4717L01	11/06/03	10:53
3	MW-3-1MS	03-5973-2MS	G4717M01	11/06/03	11:19
4	MW-3-1MSD	03-5973-2MSD	G4717N01	11/06/03	11:44
5	03G4717-MB-01	03G4717-MB-01	G4717K01	11/06/03	13:54
6	TB-10-11-5-03	03-5973-4	5973-04	11/06/03	14:46
7	MW-3-1	03-5973-2	5973-02	11/06/03	15:12
8	MW-9	03-5973-1	5973-01	11/06/03	15:38
9	MW-3-2	03-5973-3	5973-03	11/06/03	16:04
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Continuing Calibration Concentration Summary

Data File G4717Q01
Method File E524A003

Compound Name	Amount	Actual	Units	%Dev	Target Response
1 Fluorobenzene	10	10.00	ppb	0.00	650919
3 di-Cl-di-F-methane	20	18.22	ppb	8.88	238592
4 Chloromethane	20	13.80	ppb	30.98	179442
2 F114	20	20.05	ppb	0.27	123464
5 vinyl chloride	20	17.07	ppb	14.66	189466
6 bromomethane	20	11.10	ppb	44.52	69956
7 chloroethane	20	17.89	ppb	10.54	106954
8 tri-Cl-F-methane	20	22.97	ppb	14.84	421501
91 Acetonitrile X10	200	164.55	ppb	17.72	461496
9 acrolein X10	200	164.28	ppb	17.86	226269
11 acetone X10	200	241.05	ppb	20.52	501271
12 ethyl ether X5	100	88.59	ppb	11.41	547856
13 11-dichloroethene	20	20.53	ppb	2.64	317434
14 Iodomethane	20	12.52	ppb	37.42	158325
15 F-113	20	23.05	ppb	15.26	216223
16 acrylonitrile X10	200	157.84	ppb	21.08	440756
17 carbon disulfide	20	16.93	ppb	15.35	498576
94 Isopropyl Alcoholx10	200	265.70	ppb	32.85	35410
18 methylene chloride	20	17.33	ppb	13.37	240082
19 t-12-di-Cl-ethene	20	18.20	ppb	9.01	264471
20 t-Bu-Me-ether	20	19.39	ppb	3.05	495885
95 Tert butyl alcoholx10	200	319.44	ppb	59.72	136440
94 allyl chloride	20	12.76	ppb	36.19	366268
21 11-dichloroethane	20	18.11	ppb	9.43	436044
97 propionitrile	20	16.83	ppb	15.84	19315
22 c-12-di-Cl-ethene	20	17.76	ppb	11.21	269178
23 22-Dichloropropane	20	26.43	ppb	32.14	405964
24 Br-Cl-methane	20	17.74	ppb	11.32	135937
25 chloroform	20	18.79	ppb	6.03	508556
26 tetrahydrofuranX5	100	76.20	ppb	23.80	171834
98 Diisopropyl ether	20	17.49	ppb	12.54	808540
27 Di-Br-F-Me (surr)	20	19.14	ppb	4.30	292546
99 ETBE	20	20.53	ppb	2.65	598312
29 1,2-Di-Cl-Et-d4 (S1)	20	19.72	ppb	1.38	268507
30 12-dichloroethane	20	19.68	ppb	1.60	103834
32 vinyl acetate X5	100	93.02	ppb	6.98	2098034
92 Nitro Methane(x10)	200	76.72	ppb	61.64	58322
33 2-butanoneMEK X10	200	191.23	ppb	4.39	649430
93 Ethyl Acetate x2	40	31.52	ppb	21.20	265051
34 111-trichloroethane	20	22.51	ppb	12.57	512316
35 11-Di-Cl-propene	20	20.75	ppb	3.77	356458
36 benzene	20	17.70	ppb	11.52	974138
37 CCl4	20	24.14	ppb	20.69	505080

Compound Name	Amount	Actual	Units	%Dev	Target Response
100 Isobutyl alcoholx10	200	195.71	ppb	2.15	163588
38 thiophene	20	18.31	ppb	8.47	524615
39 12-di-Cl-propane	20	17.31	ppb	13.47	217989
40 trichloroethene	20	19.19	ppb	4.05	338447
41 dibromomethane	20	18.41	ppb	7.94	161333
101 TAME	20	18.08	ppb	9.61	483990
42 Br-di-Cl-methane	20	19.01	ppb	4.97	376858
43 Me-methacrylate	20	15.75	ppb	21.26	110408
44 2-ClEt-Vi-ether10	200	127.89	ppb	36.06	273681
45 c-13-di-Cl-propene	20	19.44	ppb	2.79	388349
46 t-1,3-dichloropropene	20	19.12	ppb	4.39	341152
47 Chlorobezene-d5	10	10.00	ppb	0.00	496725
48 112-tri-Cl-Et	20	17.71	ppb	11.45	194772
49 13-di-Cl-propane	20	17.89	ppb	10.53	301908
50 Et methacrylate	20	15.88	ppb	20.59	242544

Compound Name	Amount	Actual	Units	%Dev	Target Response
51 di-Br-Cl-methane	20	18.97	ppb	5.15	296008
52 bromoform	20	19.27	ppb	3.64	176864
53 1,4-dichlorobutane-2	20	17.76	ppb	11.22	330045
54 MIBK	20	14.24	ppb	28.78	135067
55 toluene-d8	20	18.89	ppb	5.57	1035489
56 toluene	20	17.78	ppb	11.08	1196236
57 2-hexanone X5	100	82.32	ppb	17.68	506148
58 12-dibromoethane	20	18.00	ppb	10.02	202794
59 tetra-Cl-ethene	20	21.23	ppb	6.16	393147
60 chlorobenzene	20	18.89	ppb	5.56	866936
61 1112-tetra-Cl-Et	20	20.40	ppb	1.99	348480
62 1,4-Dichlorobenzene-d4	10	10.00	ppb	0.00	305376
63 1-chlorohexane	20	20.02	ppb	0.08	139579
64 Et-Bz	20	19.02	ppb	4.88	1476804
65 m/p-Xylenes X2	40	38.77	ppb	3.07	2328165
66 styrene	20	18.95	PPB	5.23	958401
67 o-xylene	20	19.41	ppb	2.93	1177124
68 1122-Tetra-Cl-Et	20	17.06	ppb	14.68	206349
69 123-tri-Cl-Pr	20	18.84	ppb	5.78	75659
70 4-Br-1-F-Bz (S3)	20	19.24	ppb	3.80	398140
71 isopropylbenzene	20	20.42	ppb	2.12	1655609
72 bromobenzene	20	19.65	ppb	1.74	403196
92 t-1,4-dichloro-2-butene	20	17.50	ppb	12.50	41711
73 n-propylbenzene	20	20.72	ppb	3.61	486356
74 2-Cl-Toluene	20	19.73	ppb	1.37	392657
75 4-Cl-Toluene	20	19.22	ppb	3.89	393162
76 135-tri-Me-Benzene	20	20.43	ppb	2.15	1460395
77 4-iso-Pr-toluene	20	20.99	ppb	4.94	1616052
78 124-tri-Me-Benzene	20	19.88	ppb	0.58	1488485
79 tert-butylbenzene	20	21.12	ppb	5.59	1325271
80 13-DCB	20	19.38	ppb	3.08	826362
81 sec-butylbenzene	20	20.81	ppb	4.06	1950300

82 14-DCB	20	18.58	ppb	7.11	828869
83 Cl-benzyl	20	19.80	ppb	0.99	92095
84 12-DCB	20	19.06	ppb	4.69	744207
85 n-butylbenzene	20	20.97	ppb	4.86	426496
86 12-diBr-2-Cl-Pra	20	18.03	ppb	9.85	52386
87 124-tri-Cl-Bz	20	20.36	ppb	1.78	495011
88 naphthalene	20	15.77	ppb	21.16	698457
89 hx-Cl-butadiene	20	23.45	ppb	17.23	326253
90 123-Tri-Cl-Bz	20	20.11	ppb	0.57	422215

Average D % 10.906831

Evaluate Continuing Calibration Report

1335

Data File : C:\MSDCHEM\1\DATA\03G4717\G4717Q01.D Vial: 2
Acq On : 6 Nov 2003 10:27 am Operator: zou
Sample : f=1 Inst : GCMS-A
Misc : Multiplr: 1.00
MS Integration Params: Lscint.p

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 14:05:06 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

			Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1	Fluorobenzene	1.000	1.000	0.0	68	0.00
2		3	di-Cl-di-F-methane	0.201	0.183	9.0	79	0.00
3	p	4	Chloromethane	0.200	0.138	31.0#	51	0.00
4		2	F114	0.091	0.095	-4.4	79	0.00
5	C	5	vinyl chloride	0.171	0.146	14.6	66	0.00
6		6	bromomethane	0.097	0.054	44.3#	42#	0.00
7		7	chloroethane	0.092	0.082	10.9	67	0.00
8		8	tri-Cl-F-methane	0.282	0.324	-14.9	91	0.00
9		91	Acetonitrile X10	0.043	0.035	18.6	58	0.00
10		9	acrolein X10	0.021	0.017	19.0	59	0.00
11		11	acetone X10	0.032	0.039	-21.9#	93	-0.03
12		12	ethyl ether X5	0.095	0.084	11.6	63	0.00
13	M, C	13	11-dichloroethene	0.238	0.244	-2.5	77	0.00
14		14	Iodomethane	0.178	0.122	31.5#	44#	0.00
15		15	F-113	0.144	0.166	-15.3	97	0.00
16		16	acrylonitrile X10	0.043	0.034	20.9#	55	-0.01
17		17	carbon disulfide	0.452	0.383	15.3	65	0.00
18		94	Isopropyl Alcoholx10	0.002	0.003	-50.0#	123	-0.17
19		18	methylene chloride	0.248	0.184	25.8#	59	0.00
20		19	t-12-di-Cl-ethene	0.223	0.203	9.0	65	0.00
21		20	t-Bu-Me-ether	0.393	0.381	3.1	66	0.00
22		95	Tert butyl alcoholx10	0.007	0.010	-42.9#	177	-0.10
23		94	allyl chloride	0.441	0.281	36.3#	46#	0.00
24	p	21	11-dichloroethane	0.370	0.335	9.5	63	0.00
25		97	propionitrile	0.018	0.015	16.7	66	-0.02
26		22	c-12-di-Cl-ethene	0.233	0.207	11.2	62	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\03G4717\G4717Q01.D Vial: 2
Acq On : 6 Nov 2003 10:27 am Operator: zou
Sample : f=1 Inst : GCMS-A
Misc : Multiplr: 1.00
MS Integration Params: Lscint.p

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 14:05:06 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
27		23 22-Dichloropropane	0.236	0.312	-32.2#	89	0.00
28		24 Br-Cl-methane	0.118	0.104	11.9	63	0.00
29	C	25 chloroform	0.416	0.391	6.0	69	0.00
30		26 tetrahydrofuranX5	0.035	0.026	25.7#	54	-0.01
31		98 Diisopropyl ether	0.710	0.621	12.5	58	0.00
32	S	27 Di-Br-F-Me (surr)	0.235	0.225	4.3	67	0.00
33		99 ETBE	0.448	0.460	-2.7	68	0.00
34	S	29 1,2-Di-Cl-Et-d4 (S1)	0.209	0.206	1.4	70	0.00
35		30 12-dichloroethane	0.081	0.080	1.2	71	0.00
36		32 vinyl acetate X5	0.346	0.322	6.9	61	0.00
37		92 Nitro Methane(x10)	0.012	0.004	66.7#	61	-0.04
38		33 2-butanoneMEK X10	0.052	0.050	3.8	68	-0.02
39		93 Ethyl Acetate x2	0.129	0.102	20.9#	57	0.00
40		34 111-trichloroethane	0.350	0.394	-12.6	81	0.00
41		35 11-Di-Cl-propene	0.264	0.274	-3.8	74	0.00
42	M	36 benzene	0.846	0.748	11.6	62	0.00
43		37 CCl4	0.321	0.388	-20.9#	91	0.00
44		100 Isobutyl alcoholx10	0.013	0.013	0.0	66	0.00
45		38 thiophene	0.440	0.403	8.4	60	0.00
46	C	39 12-di-Cl-propane	0.194	0.167	13.9	59	0.00
47	M	40 trichloroethene	0.271	0.260	4.1	67	0.00
48		41 dibromomethane	0.135	0.124	8.1	65	0.00
49		101 TAME	0.369	0.372	-0.8	68	0.00
50		42 Br-di-Cl-methane	0.305	0.289	5.2	69	0.00
51		43 Me-methacrylate	0.093	0.085	8.6	59	0.00
52		44 2-ClEt-Vi-ether10	0.028	0.021	25.0#	46#	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\03G4717\G4717Q01.D Vial: 2
Acq On : 6 Nov 2003 10:27 am Operator: zou
Sample : f=1 Inst : GCMS-A
Misc : Multiplr: 1.00
MS Integration Params: Lscint.p

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 14:05:06 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

			Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
53		45	c-13-di-Cl-propene	0.307	0.298	2.9	64	0.00
54		46	t-1,3-dichloropropene	0.248	0.262	-5.6	68	0.00
55	I	47	Chlorobezene-d5	1.000	1.000	0.0	68	0.00
56		48	112-tri-Cl-Et	0.221	0.196	11.3	63	0.00
57		49	13-di-Cl-propane	0.340	0.304	10.6	63	0.00
58		50	Et methacrylate	0.255	0.244	4.3	60	0.00
59		51	di-Br-Cl-methane	0.314	0.298	5.1	69	0.00
60	P	52	bromoform	0.185	0.178	3.8	69	0.00
61		53	1,4-dichlorobutane-2	0.374	0.332	11.2	62	0.00
62		54	MIBK	0.168	0.136	19.0	55	0.00
63	s	55	toluene-d8	1.104	1.042	5.6	65	0.00
64	M,C	56	toluene	1.354	1.204	11.1	64	0.00
65		57	2-hexanone X5	0.109	0.102	6.4	63	0.00
66		58	12-dibromoethane	0.227	0.204	10.1	63	0.00
67		59	tetra-Cl-ethene	0.373	0.396	-6.2	79	0.00
68	M,P	60	chlorobenzene	0.924	0.873	5.5	66	0.00
69		61	1112-tetra-Cl-Et	0.344	0.351	-2.0	72	0.00
70	I	62	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	70	0.00
71		63	1-chlorohexane	0.228	0.229	-0.4	77	0.00
72	C	64	Et-Bz	2.542	2.418	4.9	68	0.00
73		65	m/p-Xylenes X2	1.966	1.906	3.1	70	0.00
74		66	styrene	1.656	1.569	5.3	66	0.00
75		67	o-xylene	1.985	1.927	2.9	69	0.00
76	p	68	1122-Tetra-Cl-Et	0.396	0.338	14.6	62	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\03G4717\G4717Q01.D Vial: 2
Acq On : 6 Nov 2003 10:27 am Operator: zou
Sample : f=1 Inst : GCMS-A
Misc : Multiplr: 1.00
MS Integration Params: Lscint.p

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 14:05:06 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
77	69	123-tri-Cl-Pr	0.131	0.124	5.3	68	0.00
78	S 70	4-Br-1-F-Bz (S3)	0.678	0.652	3.8	70	0.00
79	71	isopropylbenzene	2.654	2.711	-2.1	73	0.00
80	72	bromobenzene	0.672	0.660	1.8	70	0.00
81	92	t-1,4-dichloro-2-butene	0.062	0.068	-9.7	71	0.00
82	73	n-propylbenzene	0.769	0.796	-3.5	74	0.00
83	74	2-Cl-Toluene	0.652	0.643	1.4	70	0.00
84	75	4-Cl-Toluene	0.670	0.644	3.9	69	0.00
85	76	135-tri-Me-Benzene	2.341	2.391	-2.1	73	0.00
86	77	4-iso-Pr-toluene	2.522	2.646	-4.9	77	0.00
87	78	124-tri-Me-Benzene	2.451	2.437	0.6	71	0.00
88	79	tert-butylbenzene	2.055	2.170	-5.6	76	0.00
89	80	13-DCB	1.396	1.353	3.1	70	0.00
90	81	sec-butylbenzene	3.069	3.193	-4.0	77	0.00
91	82	14-DCB	1.461	1.357	7.1	70	0.00
92	83	Cl-benzyl	0.116	0.151	-30.2#	86	0.00
93	84	12-DCB	1.278	1.219	4.6	71	0.00
94	85	n-butylbenzene	0.666	0.698	-4.8	75	0.00
95	86	12-diBr-2-Cl-Pra	0.095	0.086	9.5	63	0.00
96	87	124-tri-Cl-Bz	0.796	0.810	-1.8	71	0.00
97	88	naphthalene	1.256	1.144	8.9	60	0.00
98	89	hx-Cl-butadiene	0.456	0.534	-17.1	91	0.00
99	90	123-Tri-Cl-Bz	0.687	0.691	-0.6	70	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
G4717Q01.D E524A003.M Thu Nov 06 17:52:23 2003

FORM-8A

Applied P & Ch Laboratory

Internal Standard Area and RT Summary for Method 524.2

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	035973
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		CCV Data File:	G4717Q01	Instrument ID:	A

Batch No: 03G4717

#	Client Sample No	Lab Sample ID	Analysis Date & Time	IS-1 Area #	IS-1 RT #	IS-2 Area #	IS-2 RT #	IS-3 Area #	IS-3 RT #
12 Hour CCV STD			11/06/03 10:27	650919	7.65	496725	11.54	305376	13.84
CCV Upper Limit				1301838	8.15	993450	12.04	610752	14.34
CCV Lower Limit				325459	7.15	248362	11.04	152688	13.34
1	03G4717-LCS-01	03G4717-LCS-01	11/06/03 10:53	654113	7.64	497611	11.54	302374	13.84
2	MW-3-1MS	03-5973-2MS	11/06/03 11:19	679050	7.65	523203	11.54	312211	13.84
3	MW-3-1MSD	03-5973-2MSD	11/06/03 11:44	690552	7.64	531594	11.54	325550	13.84
4	03G4717-MB-01	03G4717-MB-01	11/06/03 13:54	664923	7.64	492340	11.54	294801	13.85
5	TB-10-11-5-03	03-5973-4	11/06/03 14:46	661909	7.64	490227	11.55	293741	13.85
6	MW-3-1	03-5973-2	11/06/03 15:12	652896	7.64	482809	11.54	287868	13.85
7	MW-9	03-5973-1	11/06/03 15:38	657771	7.64	483320	11.54	289743	13.85
8	MW-3-2	03-5973-3	11/06/03 16:04	650747	7.65	477807	11.54	289131	13.85
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									

IS-1 = FLUOROBENZENE
IS-2 = CHLOROBENZENE-D5
IS-3 = 1,4-DICHLOROBENZENE-D4

Area Upper Limit = +100% of CCV internal standard area
Area Lower Limit = - 50% of CCV internal standard area
RT Upper Limit = +0.50 minutes of CCV internal standard RT
RT Lower Limit = - 0.50 minutes of CCV internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits

A

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

VOC Analysis General Logbook

Sequence # 0364612 Batch # 0364612 Matrix: W Date: 10/21/03 Analyst: Eddie

Lot #: IS/Surrogate: GC-15114/15115 Methanol(mark-*M*): _____ PEG (mark-*PEG*): _____ Defoaming(mark-*DF*): _____

☑ Calib. + Ini. Batch - ☐ Initial Batch; ☐ Middle Batch; ☐ Final Batch. ☐ Internal Study Datafile Path: _____

Op. #	Type	Sample ID	Method	$V/X=f_1$	$V_f/V_i=f_2$	$V_{spg}/V_{inj}=f_3$	F	A-#	Datafile	Note	pH
4201	SP	64612P01	E524A	25/25 = 1	/ =	/ =	1		64612P01	10/21/03 9:14am	
4202	Calib	3-A0003	003	/ =	/ =	/ =			3-A0003	gc15731	
4203		3-0002		/ =	/ =	/ =			3-0002		
4204		3-0010		/ =	/ =	/ =			3-0010		
4205		3-0020		/ =	/ =	/ =			3-0020		
4206		3-0040		/ =	/ =	/ =			3-0040		
4207		3-0060		/ =	/ =	/ =			3-0060		
4208	LCV	LCV		/ =	/ =	/ =			LCV	gc15732	
4209				/ =	/ =	/ =					
4210				/ =	/ =	/ =					
4211				/ =	/ =	/ =					
4212				/ =	/ =	/ =					
4213				/ =	/ =	/ =					
4214				/ =	/ =	/ =					
4215				/ =	/ =	/ =					
4216				/ =	/ =	/ =					
4217				/ =	/ =	/ =					
4218				/ =	/ =	/ =					
4219				/ =	/ =	/ =					
4220				/ =	/ =	/ =					
4221				/ =	/ =	/ =					
4222				/ =	/ =	/ =					
4223				/ =	/ =	/ =					
4224				/ =	10/21/03 =						
4225				/ =	/ =	/ =					
4226				/ =	/ =	/ =					
4227				/ =	/ =	/ =					
4228				/ =	/ =	/ =					
4229				/ =	/ =	/ =					
4230				/ =	/ =	/ =					
4231				/ =	/ =	/ =					
4232				/ =	/ =	/ =					

Type	Op #	STD Lot #	$C_{std}(ng/\mu L)\times V_{std}(\mu L)/X(g \text{ or } mL)=T$	Op #	STD Lot #	$C_{std}(ng/\mu L)\times V_{std}(\mu L)/X(g \text{ or } mL)=T$
LCS/LCSD		GC-	× /X= ppb		GC-	× /X= ppb
MS/MSD		GC-	× /X= ppb		GC-	× /X= ppb

Footnote/Anomaly:

FILE: [CUST.DOC.GC]VOC_LOG .TEX Root-File: VOC_LOG_ROOT.TEX 1-Page-File:[CUST.DOC.GC]VOC_LOG1.TEX; pH for field water sample only.
APCL form 7-201, April 03, 1996; Ver 4.1 No pencil. Use blue pen for record. Use red pen for correction. Supervisor Initial _____

plied P & Ch Laboratory
0 Magnolia Ave. Chino CA 91710
(909) 590-1828 Fax: (909) 590-1498

VOC Analysis General Logbook

ence # 0384717 Batch # 0384717 Matrix: W Date: 11/06/03 Analyst: Zau

#: IS/Surrogate: GC-15761/15762 Methanol(mark-*M*): _____ PEG (mark-*PEG*): _____ Defoaming(mark-*DF*): _____

alib. + Ini. Batch ☒ Initial Batch; ☐ Middle Batch; ☐ Final Batch. ☐ Internal Study Datafile Path: _____

#	Type	Sample ID	Method	$V/X=f_1$	$V_f/V_i=f_2$	$V_{spg}/V_{inj}=f_3$	F	A-#	Datafile	Note	pH
777	SP	G4717P01	E524A 003	25/25 = 1	/ =	/ =	1		G4717P01	11/06/03	10:02am
778	CCV	Q01		/ = 1	/ =	/ =			Q01	GC15796	
779	LCS	L01		/ =	/ =	/ =			L01		
780	MS	M01		/ =	/ =	/ =			M01	$5973-02	<2
781	MSD	N01		/ =	/ =	/ =			N01	↓	↓
782	MB	K01		/ =	/ =	/ =			K01		
783	Sample	5951-13		/ =	/ =	/ =			5951-13	tb	<2
784		5973-04		/ =	/ =	/ =			5973-04	tb	
785		02		/ =	/ =	/ =			02	ms	
786		01		/ =	/ =	/ =			01		
787		03		/ =	/ =	/ =			03		
788		5951-01		/ =	/ =	/ =			5951-01		
789		02		/ =	/ =	/ =			02		
790		03		/ =	/ =	/ =			03		
791		04		/ =	/ =	/ =			04		
792		05		/ =	/ =	/ =			05		
793		06		/ =	/ =	/ =			06		
794		07		/ =	/ =	/ =			07		
795		08		/ =	/ =	/ =			08		
796		09		/ =	/ =	/ =			09		
797		10		/ =	/ =	/ =			10		
798		11		/ =	/ =	/ =			11		
799	↓	↓ 12	↓	/ =	/ =	/ =	↓		↓ 12		↓
800				/ =	/ =	/ =					
801				/ =	/ =	/ =					
802				/ =	/ =	/ =					
803				/ =	/ =	/ =					
804				/ =	/ =	/ =					
805				/ =	/ =	/ =					
806				/ =	/ =	/ =					
807				/ =	/ =	/ =					
808				/ =	/ =	/ =					

Type	Op #	STD Lot #	$C_{std}(ng/\mu L)\times V_{std}(\mu L)/X(g \text{ or } mL)= T$	Op #	STD Lot #	$C_{std}(ng/\mu L)\times V_{std}(\mu L)/X(g \text{ or } mL)= T$
LCS/LCSD	4779	GC-15797	200 × 25 /X = 20 ppb		GC-	× /X= ppb
MS/MSD	4780/4781	GC-	× /X= ppb		GC-	× /X= ppb

11/11/03

Footnote/Anomaly:

Level C Data Package Deliverables

Wet Chemistry

Applied P & Ch Laboratory

Applied P & Ch Laboratory

Wet Analysis Results for Method 7196

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Anal. Method	7196
Project ID:	JPL	Service ID:	35973	Collected by:	JR

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

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-5973-1	MW-9	Water	11/05/03	11/05/03	11/05/03	03W5069	mg/L	0.01	<0.01	U
03-5973-2	MW-3-1	Water	11/05/03	11/05/03	11/05/03	03W5069	mg/L	0.01	<0.01	U
03-5973-3	MW-3-2	Water	11/05/03	11/05/03	11/05/03	03W5069	mg/L	0.01	<0.01	U
03W5069-MB-01	03W5069-MB-01	Water	11/05/03	11/05/03	11/05/03	03W5069	mg/L	0.01	<0.01	U

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

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

Applied P & Ch Laboratory

Wet Analysis Results for Method 314.0

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Anal. Method	314.0
Project ID:	JPL	Service ID:	35973	Collected by:	JR

Component Name: Perchlorate
CAS No:

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-5973-1	MW-9	Water	11/05/03	11/05/03	11/10/03	03W5108	µg/L	4	3.0	B
03-5973-2	MW-3-1	Water	11/05/03	11/05/03	11/10/03	03W5108	µg/L	4	<4	U
03-5973-3	MW-3-2	Water	11/05/03	11/05/03	11/10/03	03W5108	µg/L	4	5.6	
03W5108-MB-01	03W5108-MB-01	Water	11/10/03	11/10/03	11/10/03	03W5108	µg/L	4	<4	U

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

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

FORM-3

Applied P & Ch Laboratory

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

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	35973
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W5108		
LCS Filename:	-	Date Analyzed:	111003	Time Analyzed:	
LCSD Filename:	-	Date Analyzed:	111003	Time Analyzed:	

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
PERCHLORATE	µg/L	25	0	26.2	105	80-120
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	LCSD Concentration	LCSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
PERCHLORATE	µg/L	25	28.0	112	6	20	80-120
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

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

Comments: _____

_____

FORM-3

Applied P & Ch Laboratory

Matrix Spike/Matrix Spike Duplicate Recovery for Method 314.0

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	35973
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W5108		
MS Filename:	-	Date Analyzed:	111003	Time Analyzed:	
MSD Filename:	-	Date Analyzed:	111003	Time Analyzed:	
MS Sample No:	**MW-3-1**	Sample Lab ID:	03-5973-2		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
PERCHLORATE	µg/L	25	0	26.2	105	75-125
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
PERCHLORATE	µg/L	25	26.7	107	2	20	75-125
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

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

Comments: _____

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:	35973
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W5069		
LCS Filename:	-	Date Analyzed:	110503	Time Analyzed:	11:24
LCSD Filename:	-	Date Analyzed:	110503	Time Analyzed:	11:24

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
CHROMIUM (VI)	mg/L	0.25	0	0.241	96	80-115
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	LCSD Concentration	LCSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
CHROMIUM (VI)	mg/L	0.25	0.245	98	2	19	80-115
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

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

Comments: _____

_____

FORM-3

Applied P & Ch Laboratory

Matrix Spike/Matrix Spike Duplicate Recovery for Method 7196

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	35973
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W5069		
MS Filename:	-	Date Analyzed:	110503	Time Analyzed:	11:24
MSD Filename:	-	Date Analyzed:	110503	Time Analyzed:	11:24
MS Sample No:	**MW-3-1**	Sample Lab ID:	03-5973-2		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
CHROMIUM (VI)	mg/L	0.25	0	0.260	104	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	0.252	101	3	19	78-115
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

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

Comments: _____

6A

INITIAL CALIBRATION DATA

Lab Name: Applied P & Ch Lab Contract: 35973

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

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

A=-0.001+ 0.846C

A=Absorbance

C=Concentration (mg/L)

r= 0.9999

FORM-7

Applied P & Ch Laboratory

CCV Recovery for Wet Analysis

Client Name: GEOFON, Inc. Contract No.: Lab Code: APCL

Case No: SAS No.: Service ID: 35973

Project ID: JPL Project No.: 04-4428.10

#	Component Name	Method	Batch No.	Unit	Expe-cted	Test Result	Rec. %	Dev. %	Flag	Control Limit, %	Test Date
1	Perchlorate	314.0	03W5108	µg/L	50	57.0	114	14	√	85-115	11/10/2003
	Perchlorate	314.0	03W5108	µg/L	50	57.3	115	15	√	85-115	11/10/2003
	Perchlorate	314.0	03W5108	µg/L	50	57.1	114	14	√	85-115	11/10/2003
	Perchlorate	314.0	03W5108	µg/L	50	57.2	114	14	√	85-115	11/10/2003
2	Chromium (VI)	7196	03W5069	mg/L	0.25	0.235	94	-6	√	90-110	11/05/2003
	Chromium (VI)	7196	03W5069	mg/L	0.25	0.249	100	0	√	90-110	11/05/2003

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

Chromium (VI) (7196) Worksheet

Batch # 03W5069 Matrix: W [Holding Time: 24 hours!!] Test Date: 11/5/03 Analyst:

Lot #: Reagent Water Diphenylcazide solution Test Time: 11:24 SOP: G-2

Calibration	STD Lot #	$C_{std} \times V_{std} / V_f = C_i$	A_i	$RF_i = A_i / C_i$
STD-1	W-	× / = mg/L		
STD-2	W-	× / = mg/L		
STD-3	W-	× / = mg/L		
STD-4	W-	× / = mg/L		
STD-5	W-	× / = mg/L		
STD-6	W-	× / = mg/L		

Calibration results | Note
Least Square [RF]= | Cal. Code:
Average $\bar{RF}$=
C.C.=0.9999 (≥ 0.995)
RSD= % (≤ 15%)
Ref. page
A=-0.001+0.846C

Analysis Type	Sample ID or Lot #	Samp. Amnt X_0 (g or mL)	Dilu./Ext $X/X_0 = f_1$	Treat. Ratio $V/X = f_2$	540 nm A	Concentration $C' = A/\bar{RF}$	C (Sample) $C = f_1\ f_2\ C'$	Anomaly Note
CCV	Lot: W- 7757	Expected Conc.: × / = 0.25 mg/L			0.199	0.235 mg/L	REC. %	90-110 %
Method Blank	Bl. Lot: T1118		/X_0 = 1	95.0/ =	0.000	mg/L	0.001 ppm	
LCS1	Bl. Lot:		/X_0 =	95.0/ =	0.203	mg/L	0.24 ppm	
Sample-1	5973-1		/X_0 =	95.0/ =	0.003	mg/L	0.005 ppm	
MS on S-1	2		/X_0 =	95.0/ =	0.219	mg/L	0.260 ppm	
MSD on S-1	2		/X_0 =	95.0/ =	0.212	mg/L	0.252 ppm	
Sample 2	2		/X_0 =	95.0/ =	0.000	mg/L	0.001 ppm	
Sample 3	3		/X_0 =	95.0/ =	0.000	mg/L	0.001 ppm	
Sample 4			/X_0 =	95.0/ =		mg/L	ppm	
Sample 5			/X_0 =	95.0/ =		mg/L	ppm	
Sample 6			/X_0 =	95.0/ =		mg/L	ppm	
Sample 7			/X_0 =	95.0/ =		mg/L	ppm	
Sample 8			/X_0 =	95.0/ =		mg/L	ppm	
Sample 9			/X_0 =	95.0/ =		mg/L	ppm	
Sample 10			/X_0 =	95.0/ 11/6/03 =		mg/L	ppm	
Blank	Lot:		/X_0 =	95.0/ =		mg/L	ppm	
LCS2	Bl. Lot: T1118		/X_0 =	95.0/ =		mg/L	ppm	
Sample 11			/X_0 = 1	95.0/ =	0.226	mg/L	0.275 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/ 11/6/03 =		mg/L	ppm	
Sample 19			/X_0 =	95.0/ =		mg/L	ppm	
Sample 20			/X_0 =	95.0/ =		mg/L	ppm	
MTX Dup.	Original 0.25 mg/L ✓		/X_0 =	95.0/ =	0.210	0.249 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- 7757	× / = 0.25 ppm	%	80-120 %/80-120 %
MSD	W-	× / = ppm	%	.. ..
LCS	W- 7853	× / = ppm	%	80-120 %/80-120 %
LCSD	W-	× / = ppm	%	.. ..

PQL/MDL (in ppm)

PQL(w)	0.01
PQL(s)	0.05
MDL(w)	0.005
MDL(s)	0.025

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

Chromium (VI) (7196) Worksheet

Batch # PZ Matrix: WATER [Holding Time: 24 hours!!] Test Date: 7/28/03 Analyst: [illegible]

Lot #: Reagent Water _____ Diphenylcazide solution pr 7/28/03 Test Time: _____ SOP: C

Calibration	STD Lot #	$C_{std} \times V_{std} / V_f = C_i$	A_i	$RF_i = A_i / C_i$	Calibration results	Note
STD-1	W-7257	× / =0.00 mg/L	0.000		Least Square [RF]=	Cal. Code:
STD-2	W-	× / =0.05 mg/L	0.007		Average $\bar{RF}$=	
STD-3	W-	× / 0.075 / 0.05 mg/L	0.017		C.C.= 0.9999 (≥ 0.995)	
STD-4	W-	× / =0.15 mg/L	0.107		RSD= % (≤ 15%)	
STD-5	W-	× / =0.250 mg/L	0.212		Ref. page	
STD-6	W-	× / =0.50 mg/L	0.420		A = -0.001 + 0.846C	

Analysis Type	Sample ID or Lot #	Samp. Amnt X_0 (g or mL)	Dilu./Ext $X/X_0 = f_1$	Treat. Ratio $V/X = f_2$	540 nm A	Concentration $C' = A/\bar{RF}$	C (Sample) $C = f_1 f_2 C'$	Anom: Note
CCV	Lot: W-7853	Expected Conc.: × / =0.25 mg/L			0.218	0.259 mg/L	REC. %	90-110
Method Blank	Bl. Lot:		/X_0 =	95.0/ =	0.000	0.000 mg/L	ppm	
LCS1	Bl. Lot:		/X_0 =	95.0/ =	0.210	0.250 mg/L	ppm	
Sample-1	4177-37	1ml→100ml	/X_0 = 1	95.0/ = 2	0.290	0.681 mg/L	ppm	
MS on S-1	37	0.5ml→100ml	/X_0 =	95.0/ = 2	0.287	0.682 mg/L	ppm	report
MSD on S-1	4175-15	10.0g	50ml/X_0 = 5	95.0/ = 10	0.050	3.04 mg/L	ppm	
Sample 2	15	V	/X_0 =	95.0/ = 2	0.247	2.94 mg/L	ppm	report
Sample 3			/X_0 =	95.0/ =		mg/L	ppm	
Sample 4			/X_0 =	95.0/ =		mg/L	ppm	
Sample 5			/X_0 =	95.0/ =		mg/L	ppm	
Sample 6			/X_0 =	95.0/ =		mg/L	ppm	
Sample 7			/X_0 =	95.0/ =		mg/L	ppm	
Sample 8			/X_0 =	95.0/ =		mg/L	ppm	
Sample 9			/X_0 =	95.0/ =		mg/L	ppm	
Sample 10			/X_0 =	95.0/ =		mg/L	ppm	
Blank	Lot:		/X_0 =	95.0/ =		mg/L	ppm	
LCS2	Bl. Lot:		/X_0 =	95.0/ =		mg/L	ppm	
Sample 11			/X_0 =	95.0/ =		mg/L	ppm	
Sample 12			/X_0 =	95.0/ =		mg/L	ppm	
Sample 13			/X_0 =	95.0/ =		mg/L	ppm	
Sample 14			/X_0 =	95.0/ =		mg/L	ppm	
Sample 15			/X_0 =	95.0/ =		mg/L	ppm	
Sample 16			/X_0 =	95.0/ =		mg/L	ppm	
Sample 17			/X_0 =	95.0/ =		mg/L	ppm	
Sample 18			/X_0 =	95.0/ =		mg/L	ppm	
Sample 19			/X_0 =	95.0/ =		mg/L	ppm	
Sample 20			/X_0 =	95.0/ =		mg/L	ppm	
MTX Dup.	dup. w/ 0.5ml		/X_0 =	95.0/ =	0.248	0.259 mg/L	ppm	

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

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

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

Schedule File: C:\PeakNet\schedule\03w5108k.sch

Line	Sample	Sample Type	Level	Method	Data File	Volume	Dilution
1	ccv 50ppb w8082	Sample		e314-011.met	c:\data\03w5108k\w5108k q01	1	1
2	lcs 25ppb w8087	Sample		e314-011.met	c:\data\03w5108k\w5108k l01_002.dxd	1	1
3	Lcsd 25PPB W8257	Sample		e314-011.met	c:\data\03w5108k\w5108k j01_003.dxd	1	1
4	ICCS 4ppb w8088	Sample		e314-011.met	c:\data\03w5108k\w5108k iccs 4ppb_004.dxd	1	1
5	##03W5108K IPC 25PPB W8032	Sample		e314-011.met	c:\data\03w5108k\w5108k ipc 25ppb_005.dxd	1	1
6	mb	Sample		e314-011.met	c:\data\03w5108k\w5108k k01_006.dxd	1	1
7	5951-02 f=1	Sample		e314-011.met	c:\data\03w5108k\5951-02_007.dxd	1	1
8	5951-03 f=1	Sample		e314-011.met	c:\data\03w5108k\5951-03_008.dxd	1	1
9	5951-04 f=1	Sample		e314-011.met	c:\data\03w5108k\5951-04_009.dxd	1	1
10	5973-01 f=1	Sample		e314-011.met	c:\data\03w5108k\5973-01_010.dxd	1	1
11	5973-02 f=1	Sample		e314-011.met	c:\data\03w5108k\5973-02_011.dxd	1	1
12	ccv 50ppb w8082	Sample		e314-011.met	c:\data\03w5108k\w5108k q02_012.dxd	1	1
13	ccb	Sample		e314-011.met	c:\data\03w5108k\w5108k ccb_013.dxd	1	1
14	5973-03 f=1	Sample		e314-011.met	c:\data\03w5108k\5973-03_014.dxd	1	1
15	5973-02 ms 25ppb f=1	Sample		e314-011.met	c:\data\03w5108k\w5108k m01_015.dxd	1	1
16	5973-02 msd 25ppb f=1	Sample		e314-011.met	c:\data\03w5108k\w5108k n01_016.dxd	1	1
17	5971-09 f=1	Sample		e314-011.met	c:\data\03w5108k\5971-09_017.dxd	1	1
18	5971-01 f=1	Sample		e314-011.met	c:\data\03w5108k\5971-01_018.dxd	1	1
19	5971-02 f=1	Sample		e314-011.met	c:\data\03w5108k\5971-02_019.dxd	1	1
20	5971-03 f=1	Sample		e314-011.met	c:\data\03w5108k\5971-03_020.dxd	1	1
21	5971-04 f=1	Sample		e314-011.met	c:\data\03w5108k\5971-04_021.dxd	1	1
22	5971-06 F=1	Sample		e314-011.met	c:\data\03w5108k\5971-06_022.dxd	1	1
23	ccv 50ppb w8082	Sample		e314-011.met	c:\data\03w5108k\w5108k q03_023.dxd	1	1
24	ccb	Sample		e314-011.met	c:\data\03w5108k\w5108k ccb_024.dxd	1	1
25	5971-10 F=1	Sample		e314-011.met	c:\data\03w5108k\5971-10_025.dxd	1	1
26	5995-04 f=1	Sample		e314-011.met	c:\data\03w5108k\5995-04_026.dxd	1	1
27	5995-05 f=1	Sample		e314-011.met	c:\data\03w5108k\5995-05_027.dxd	1	1
28	5995-11 f=1	Sample		e314-011.met	c:\data\03w5108k\5995-11_028.dxd	1	1
29	5995-12 f=1	Sample		e314-011.met	c:\data\03w5108k\5995-12_029.dxd	1	1
30	5995-13 f=1	Sample		e314-011.met	c:\data\03w5108k\5995-13_030.dxd	1	1
31	6002-01 f=1	Sample		e314-011.met	c:\data\03w5108k\6002-01_031.dxd	1	1
32	6002-03 f=1	Sample		e314-011.met	c:\data\03w5108k\6002-03_032.dxd	1	1
33	ccv 50ppb w8082	Sample		e314-011.met	c:\data\03w5108k\w5108k q04_033.dxd	1	1
34		Sample		aastopcl.met		1	1

Analyst W.W

Date 11/10/03

Instrument IC-1

1353

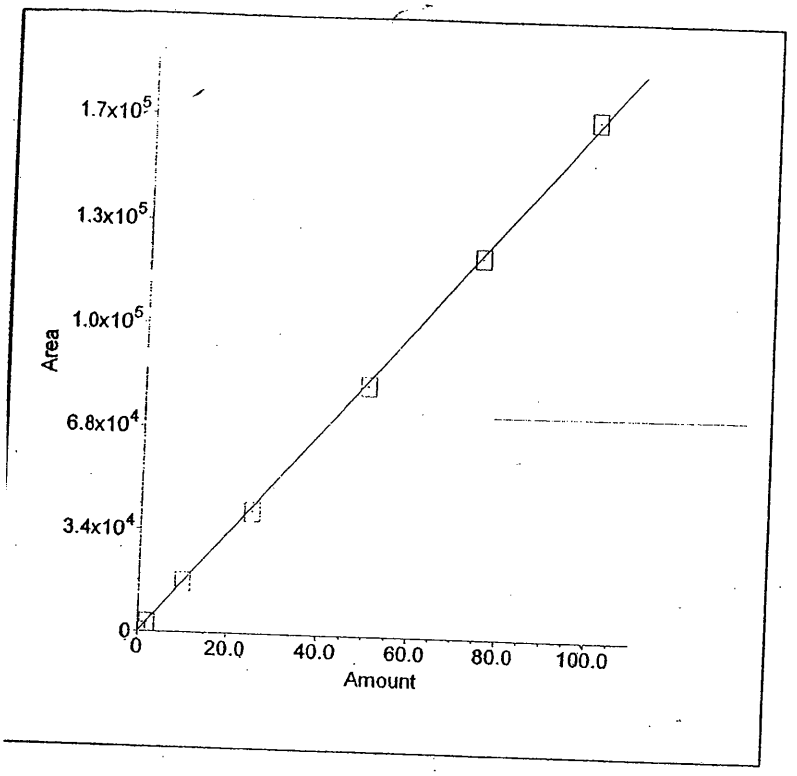
Schedule File: C:\PeakNet\schedule\03w5108k.sch

Line	Int. Std.	Comment
1	1	
2	1	
3	1	
4	1	
5	1	
6	1	
7	1	
8	1	
9	1	
10	1	
11	1	
12	1	
13	1	
14	1	
15	1	
16	1	
17	1	
18	1	
19	1	
20	1	
21	1	
22	1	
23	1	
24	1	
25	1	
26	1	
27	1	
28	1	
29	1	
30	1	
31	1	
32	1	
33	1	
34	1	

Default Method Path: C:\PEAKNET\METHOD
Default Data Path: C:\DATA\03W5052K
Comment:

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

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

akNet 5.2

APCL

Applied Physics & Chemistry Laboratory

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

December 2, 2003

GEOFON, Inc.
Attention: Brad Shojaee
22632 Golden Spring Dr Ste 270
Diamond Bar CA 91765

Dear Brad,

This package contains samples in our Service ID 03-5923 and your project : 04-4428.10 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: Brad Shojaee
22632 Golden Spring Dr Ste 270
Diamond Bar 91765
Tel: (909)396-7662 Fax: (909)396-1455

Service ID #: 801-035923
Collected by: JR
Collected on: 11/03/03

Received: 11/03/03
Extracted: N/A
Tested: 11/03-05/03
Reported: 11/06/03

Sample Description: Water from MW-3.
Project Description: 04-4428.10 JPL

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result EB-8-11-3-03 03-05923-1	Analysis Result MW-3-3 03-05923-2
CHROMIUM (VI)	7196	mg/L	0.01	<0.01	<0.01
Dilution Factor				1	1
PERCHLORATE	314.0	µg/L	4	<4	<4
VOLATILE ORGANIC COMPOUNDS					
Dilution Factor				1	1
BENZENE	524.2	µg/L	0.5	<0.5	<0.5
BROMOBENZENE	524.2	µg/L	0.5	<0.5	<0.5
BROMOCHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5
BROMODICHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5
BROMOFORM	524.2	µg/L	0.5	<0.5	<0.5
BROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5
N-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5
SEC-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5
TERT-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5
2-BUTANONE	524.2	µg/L	10	<10	<10
CARBON TETRACHLORIDE	524.2	µg/L	0.5	<0.5	<0.5
CHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5
CHLORODIBROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5
CHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5
CHLOROFORM	524.2	µg/L	0.5	<0.5	0.6
CHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5
2-CHLOROTOLUENE	524.2	µg/L	0.5	<0.5	<0.5
4-CHLOROTOLUENE	524.2	µg/L	0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	524.2	µg/L	0.5	<0.5	<0.5
DIBROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	524.2	µg/L	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 EB-8-11-3-03 03-05923-1	Analysis Result MW-3-3 03-05923-2
TRANS-1,2-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5
2,2-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5
ETHYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	524.2	µg/L	0.5	<0.5	<0.5
ISOPROPYLBENZENE (CUMENE)	524.2	µg/L	0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	524.2	µg/L	0.5	<0.5	<0.5
METHYLENE CHLORIDE	524.2	µg/L	0.5	<0.5	<0.5
METHYL-T-BUTYL ETHER (MTBE)	524.2	µg/L	1	<1	<1
4-METHYL-2-PENTANONE (MIBK)	524.2	µg/L	10	<10	<10
NAPHTHALENE	524.2	µg/L	0.5	<0.5	<0.5
N-PROPYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5
STYRENE	524.2	µg/L	0.5	<0.5	<0.5
1,1,1,2-TETRACHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5
1,1,2,2-TETRACHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5
TETRACHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5
TOLUENE	524.2	µg/L	0.5	<0.5	<0.5
1,2,3-TRICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5
TRICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5
TRICHLOROFLUOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5
112TRICHLORO-122TRIFLUOROETHANE	524.2	µg/L	0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5
VINYL CHLORIDE	524.2	µg/L	0.5	<0.5	<0.5
O-XYLENE	524.2	µg/L	0.5	<0.5	<0.5
M/P-XYLENE	524.2	µg/L	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 MW-3-4 03-05923-3	MW-3-5 03-05923-4	TB-8-11-3-03 03-05923-5
CHROMIUM (VI)	7196	mg/L	0.01	<0.01	<0.01	-
Dilution Factor				1	1	1
PERCHLORATE	314.0	µg/L	4	<4	<4	-
VOLATILE ORGANIC COMPOUNDS						
Dilution Factor				1	1	1
BENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
BROMOBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
BROMOCHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
BROMODICHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
BROMOFORM	524.2	µg/L	0.5	<0.5	<0.5	<0.5
BROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
N-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
SEC-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
TERT-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
2-BUTANONE	524.2	µg/L	10	<10	5J	2J
CARBON TETRACHLORIDE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
CHLORODIBROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROFORM	524.2	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
2-CHLOROTOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
4-CHLOROTOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	524.2	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
2,2-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result MW-3-4 03-05923-3	MW-3-5 03-05923-4	TB-8-11-3-03 03-05923-5
ETHYLBENZENE	524.2	µg/L	0.5	<0.5	1.3	<0.5
HEXACHLOROBUTADIENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
ISOPROPYLBENZENE (CUMENE)	524.2	µg/L	0.5	<0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
METHYLENE CHLORIDE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
METHYL-T-BUTYL ETHER (MTBE)	524.2	µg/L	1	<1	<1	<1
4-METHYL-2-PENTANONE (MIBK)	524.2	µg/L	10	<10	<10	<10
NAPHTHALENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
N-PROPYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
STYRENE	524.2	µg/L	0.5	<0.5	0.8	<0.5
1,1,1,2-TETRACHLOROETHANE	524.2	µg/L	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
TETRACHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
TOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROFLUOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
112TRICHLORO-122TRIFLUOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
VINYL CHLORIDE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
O-XYLENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
M/P-XYLENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.

J: Reported between PQL and MDL.

Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

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: 03-5923

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

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

Case Narrative

Project: JPL/MW-3./04-4428.10

For GEOFON, Inc.

APCL Service No: 03-5923

1. Sample Identification

The sample identifications are listed in the following table:

GEOFON, Inc. Sample ID	APCL Sample ID
MW-3-5	03-05923-4
MW-3-4	03-05923-3
MW-3-3	03-05923-2
EB-8-11-3-03	03-05923-1
TB-8-11-3-03	03-05923-5

2. Analytical Methodology

Samples are analyzed by EPA methods

524.2 (Volatile Organic Compounds),
7196 (Chromium (VI)),
314.0 (Perchlorate, low level),

3. Holding Time

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

4. Preservation

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

5. Tele-log

Faxed COC with two samples excluded from analysis request.

6. Anomaly

None

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

Respectfully submitted,

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

0058

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-3

GEOFON's LAB COORDINATOR	LAB COORDINATOR'S PHONE	LAB COORDINATOR'S FAX	LABORATORY SERVICE ID	LABORATORY CONTACT	MAIL REPORT (COMPANY NAME)
Scott Brehmer	909-396-7662	909-396-1455		Kenny Chan	Geofon
PROJECT NAME	**PROJECT LOCATION**	**PROJECT NUMBER**	**LABORATORY PHONE**	**LABORATORY FAX**	**RECIPIENT NAME**
SPL GW Mon-4Q03	MW-3	04-4428.10	909 590 1828	909 590 1498	Tony Faid
PROJECT CONTACT	**PROJECT PHONE NUMBER**	**PROJECT FAX**	**LABORATORY ADDRESS**		**ADDRESS**
Brad Shojaie	909 396 7662	909 396 1455	13760 Magnolia Ave.		22632 Golden Spr. Dr. Ste 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		Diamond Bar, CA 91765
PROJECT MANAGER	**PROJECT MANAGER'S PHONE**	**PROJECT MANAGER'S FAX**			
Tony Faid	909 396 7662	909 396 1455			

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont	QC Level	T.A.T.	Analyses: 524.2 (VOCs)	314.0 (ClO4)	200.8 (Total Cr)	7196 (Cr (VI))	Comments
1	MW-3-5	W	11/3/03	0805	HCl HNO3 NONE	5	III	Normal	X	X	X	X	5923
2	MW-3-4			0829					X	X	X	X	
3	MW-3-3			0849					X	X	X	X	~~Cancel entry -- 11.3.03~~
4	MW-3-2								X	X	X	X	Cancel entry @ -- 11.3.03
5	MW-3-1								X	X	X	X	MS/MSD Cancel entry 11.3.03 @
6	TB-8-11-3-03			—		3			X				
7	EB-8-11-3-03			0930		5			X	X	X	X	
8													
9													
10													

SAMPLES COLLECTED BY: J. Robinson

COURIER AND AIR BILL NUMBER:

COOLER TEMPERATURE UPON RECEIPT

RELINQUISHED BY	RECEIVED BY	DATE	TIME	SAMPLE'S CONDITION UPON RECEIPT
	Mary Wood	11/3/03	10:40	

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

005

GEOFON INCORPORATED

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

CHAIN-OF-CUSTODY RECORD

PROJECT DATA MANAGER'S COPY

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MW-3

GEOFON's LAB COORDINATOR: Scott Dorman	LAB COORDINATOR'S PHONE: 909-396-7662	LAB COORDINATOR'S FAX: 909-396-1455	LABORATORY SERVICE ID:	LABORATORY CONTACT: Kenny Chan	MAIL REPORT (COMPANY NAME): GeoFon
PROJECT NAME: JPL GW Mon-4Q03	PROJECT LOCATION: MW-3	PROJECT NUMBER: 04-4428.10	LABORATORY PHONE: 909 590 1828	LABORATORY FAX: 909 590 1498	RECIPIENT NAME: Tony Fuid
PROJECT CONTACT: Brad Shepard	PROJECT PHONE NUMBER: 909 396 7662	PROJECT FAX: 909 396 1455	LABORATORY ADDRESS: 13760 Magnolia Ave.		ADDRESS: 22632 Golden Spr. Dr.
PROJECT ADDRESS: 4800 Oak Grove Dr.	CITY, STATE AND ZIPCODE: Pasadena, CA	CLIENT: US NAVY SWDIV	CITY, STATE AND ZIPCODE: Chino, CA 91710		CITY, STATE AND ZIPCODE: Diamond Bar, CA 91765
PROJECT MANAGER: Tony Fuid	PROJECT MANAGER'S PHONE: 909 396 7662	PROJECT MANAGER'S FAX: 909 396 1455			

5923

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont.	QC Level	T.A.T.	Analyses: 524.2 (VOCs)	5145 (ClO4)	200.8 (Total Cr)	7196 (Cr (VI))					Comments
1	MW-3-5	W	11/3/03	0805	HCl Hand Nanl	5	III	Normal	X	X	X	X					
2	MW-3-4			0829					X	X	X	X					
3	MW-3-3			0819					X	X	X	X					~~cancel entry~~ 11.3.03
4	~~MW-3-2~~								X	X	X	X	11.13.03				cancel entry 11.3.03
5	~~MW-3-1~~								X	X	X	X	11.3.03				MS/MSD cancel entry 11.3.03
6	TB-8-11-3-03			—		3			X								
7	EB-8-11-3-03			0933		5			X	X	X	X					
8																	
9																	
10																	

SAMPLES COLLECTED BY: S. Robinson

COURIER AND AIR BILL NUMBER:

COOLER TEMPERATURE UPON RECEIPT:

RELINQUISHED BY	RECEIVED BY	DATE	TIME	SAMPLE'S CONDITION UPON RECEIPT
	Alan Wood	11/3/03	10:40	

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: 5923 **Client Name/Project:** Geofon

1. Sample Arrival

Date/Time Received 11/3/03 1050 Date/Time Opened 11/3/03 1050 By (name): Adam W.

Custody Transfer: ☒ Client ☐ Golden State ☐ UPS ☐ US Mail ☐ FedEx ☐ APCL Empl: _____

2. Chain-of-Custody (CoC)

☒ With Samples? ☐ Faxed? ☒ Client has Copy? ☐ Signed, dated? By: _____
☒ Project ID? ☒ Analyses Clear? ☐ Hold Samples? #on Hold _____ # Received _____
☐ 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 5 days ☐ 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: _____ Printed: 3 Nov 2003 7:31a.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.

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

Sample Login: Check List

03-05923 (0470_ 185) (2202777_ 185)

11/03/03

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?	*Adam Wood*
	Receiving Date/Time:	*11/03/03 1050*
	COC No.	*0058*
☐ Shipping Information	Shipping Company	*by Client*
	Packing Information:	*Cooler/Ice Chester*
	Cooler Temperature:	*3.9 °C*
☐ Container Information	Container Provider:	*Client*
☐ Sampling Information	Sampling Person:	*JR*
	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-3-5	524.2	03-05923-4-α	W	V	C	40	3	G	110303	N	0	6	☐
	MW-3-5	CrVI	03-05923-4-β	W	P		500	1	G	110303	N	0	6	☐
2	MW-3-4	524.2	03-05923-3-α	W	V	C	40	3	G	110303	N	0	6	☐
	MW-3-4	CrVI	03-05923-3-β	W	P		500	1	G	110303	N	0	6	☐
3	MW-3-3	524.2	03-05923-2-α	W	V	C	40	3	G	110303	N	0	6	☐
	MW-3-3	CrVI	03-05923-2-β	W	P		500	1	G	110303	N	0	6	☐
4	EB-8-11-3-03	524.2	03-05923-1-α	W	V	C	40	3	G	110303	N	0	6	☐
	EB-8-11-3-03	CrVI	03-05923-1-β	W	P		500	1	G	110303	N	0	6	☐
5	TB-8-11-3-03	524.2	03-05923-5	W	V	C	40	3	G	110303	N	0	6	☐

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/SM4500NO3C*	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-3-5	524.2	03-05923-4-α	W	X								☐
	MW-3-5	CrVI	03-05923-4-β	W		X	X						☐
2	MW-3-4	524.2	03-05923-3-α	W	X								☐

Level C Data Package Deliverables

Volatile Organics

Applied P & Ch Laboratory

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Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	11/05/2003
Project ID:	JPL	Service ID:	35923	Collected by:	
		Lab Sample ID:	03G4695-MB-01	Received Date:	11/05/2003
Sample ID:	03G4695-MB-01	Sample Matrix	Water	Moisture %:	–
Sample Type:	Method Blank	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	11/05/03	Anal. Date:	11/05/03
Batch No:	03G4695	Prep. No:	–	Anal. Time:	00:45
Data File Name:	G4695K01	Sample Amount:	25.0 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	0.5	<0.5	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	0.5	0.4	J
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	109
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	108
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	104
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	99
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	98
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.

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:	11/03/2003
Project ID:	JPL	Service ID:	35923	Collected by:	JR
		Lab Sample ID:	03-5923-1	Received Date:	11/03/2003
Sample ID:	**EB-8-11-3-03**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	11/05/03	Anal. Date:	11/05/03
Batch No:	03G4695	Prep. No:	–	Anal. Time:	01:14
Data File Name:	5923-01	Sample Amount:	25.0 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	0.5	<0.5	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	0.5	<0.5	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	1-BROMO-4-FLUOROBENZENE (4-BROMOFL	460-00-4	70-129	107
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	105
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	104
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	97
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	98
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.

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:	11/03/2003
Project ID:	JPL	Service ID:	35923	Collected by:	JR
		Lab Sample ID:	03-5923-2	Received Date:	11/03/2003
Sample ID:	MW-3-3	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	11/05/03	Anal. Date:	11/05/03
Batch No:	03G4695	Prep. No:	–	Anal. Time:	01:43
Data File Name:	5923-02	Sample Amount:	25.0 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	0.6	
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	0.5	<0.5	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	0.5	<0.5	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	1-BROMO-4-FLUOROBENZENE (4-BROMOFL	460-00-4	70-129	110
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	107
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	106
4	TOLUENE-D8	2037-26-5	73-129	108
# 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	99
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.

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:	11/03/2003
Project ID:	JPL	Service ID:	35923	Collected by:	JR
		Lab Sample ID:	03-5923-3	Received Date:	11/03/2003
Sample ID:	MW-3-4	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	11/05/03	Anal. Date:	11/05/03
Batch No:	03G4695	Prep. No:	–	Anal. Time:	02:09
Data File Name:	5923-03	Sample Amount:	25.0 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	0.5	<0.5	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	0.5	<0.5	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	1-BROMO-4-FLUOROBENZENE (4-BROMOFL	460-00-4	70-129	109
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	110
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	106
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	97
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	97
3	FLUOROBENZENE	462-06-6	50-200	99
# 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

Applied P & Ch Laboratory

Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	11/03/2003
Project ID:	JPL	Service ID:	35923	Collected by:	JR
		Lab Sample ID:	03-5923-4	Received Date:	11/03/2003
Sample ID:	MW-3-5	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	11/05/03	Anal. Date:	11/05/03
Batch No:	03G4695	Prep. No:	–	Anal. Time:	02:35
Data File Name:	5923-04	Sample Amount:	25.0 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	5	J
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	0.5	<0.5	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	1.3	
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	0.5	<0.5	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	0.8	
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	108
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	107
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	106
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	99
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	99
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.

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:	11/03/2003
Project ID:	JPL	Service ID:	35923	Collected by:	JR
		Lab Sample ID:	03-5923-5	Received Date:	11/03/2003
Sample ID:	TB-8-11-3-03	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	11/05/03	Anal. Date:	11/05/03
Batch No:	03G4695	Prep. No:	–	Anal. Time:	04:46
Data File Name:	5923-05	Sample Amount:	25.0 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	2	J
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	0.5	<0.5	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	0.5	<0.5	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	1-BROMO-4-FLUOROBENZENE (4-BROMOFL	460-00-4	70-129	108
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	108
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	106
4	TOLUENE-D8	2037-26-5	73-129	108
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	CHLOROBENZENE-D5	3114-55-4	50-200	96
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	96
3	FLUOROBENZENE	462-06-6	50-200	99
# 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

FORM-2A

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:	035923
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03G4695		

#	Client Sample No	Lab Sample ID	S1 %	#	S2 %	#	S3 %	#	S4 %	#	TOT OUT
1	03G4695-LCS-01	03G4695-LCS-01	103		101		100		98		0
2	MW-3-4MS	03-5923-3MS	102		100		100		99		0
3	MW-3-4MSD	03-5923-3MSD	103		99		97		101		0
4	03G4695-MB-01	03G4695-MB-01	109		108		104		106		0
5	EB-8-11-3-03	03-5923-1	107		105		104		107		0
6	MW-3-3	03-5923-2	110		107		106		108		0
7	MW-3-4	03-5923-3	109		110		106		107		0
8	MW-3-5	03-5923-4	108		107		106		105		0
9	TB-8-11-3-03	03-5923-5	108		108		106		108		0
10											
11											
12											
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:	35923
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03G4695		
LCS Filename:	G4695L01	Date Analyzed:	110403	Time Analyzed:	20:47
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	18.4	92	65-120
CHLOROBENZENE	µg/L	20	0	19.5	98	65-134
1,1-DICHLOROETHENE	µg/L	20	0	21.3	107	65-127
TOLUENE	µg/L	20	0	18.3	92	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: _____

_____

FORM-3A

Applied P & Ch Laboratory

Matrix Spike/Matrix Spike Duplicate Recovery for Method 524.2

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	35923
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03G4695		
MS Filename:	G4695M01	Date Analyzed:	110403	Time Analyzed:	21:38
MSD Filename:	G4695N01	Date Analyzed:	110403	Time Analyzed:	22:04
MS Sample No:	MW-3-4	Sample Lab ID:	03-5923-3		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
BENZENE	µg/L	20	0	18.5	93	65-121
CHLOROBENZENE	µg/L	20	0	19.5	98	65-134
1,1-DICHLOROETHENE	µg/L	20	0	21.4	107	65-127
TOLUENE	µg/L	20	0	18.6	93	65-134
TRICHLOROETHENE	µg/L	20	0	20.0	100	65-125
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
BENZENE	µg/L	20	18.4	92	1	28	65-121
CHLOROBENZENE	µg/L	20	19.5	98	0	35	65-134
1,1-DICHLOROETHENE	µg/L	20	21.1	106	1	31	65-127
TOLUENE	µg/L	20	18.6	93	0	35	65-134
TRICHLOROETHENE	µg/L	20	19.8	99	1	30	65-125
# 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-4A

Applied P & Ch Laboratory

Method Blank Summary for Method 524.2

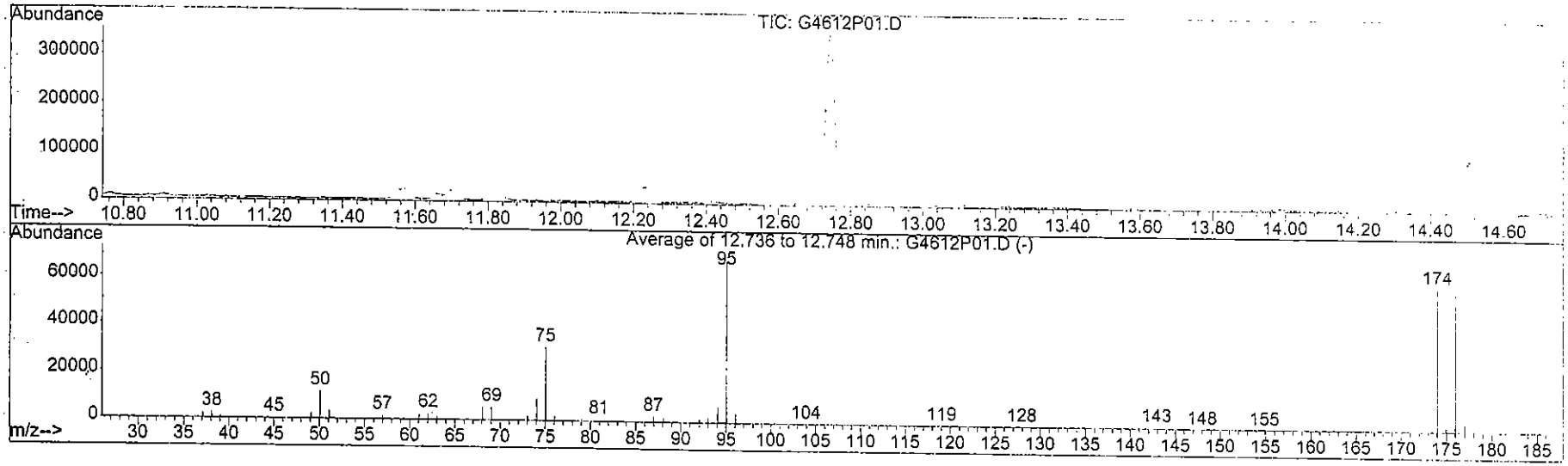
Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	35923
Project ID:	JPL	Project No:	04-4428.10	Analysis Date:	11/05/03
		Sample Matrix:	Water	Analysis Time:	00:45
Sample ID:	03G4695-MB-01	Batch No:	03G4695	Instrument ID:	GC/MS: A
Lab Sample ID:	03G4695-MB-01	Data File Name:	G4695K01	GC Column:	HP-VOC
		Heated Purge: (Y/N)	N	Column ID:	0.20 mm

This Method Blank applies to the following samples and QC samples:

#	Client Sample No	Lab Sample ID	Sample Type	Data Filename	Analysis Date	Analysis Time
1	03G4695-LCS-01	03G4695-LCS-01	Lab Control Spike	G4695L01	11/04/03	20:47
2	MW-3-4MS	03-5923-3MS	Matrix Spike	G4695M01	11/04/03	21:38
3	MW-3-4MSD	03-5923-3MSD	Matrix Spike Duplicate	G4695N01	11/04/03	22:04
4	EB-8-11-3-03	03-5923-1	Field Sample	5923-01	11/05/03	01:14
5	MW-3-3	03-5923-2	Field Sample	5923-02	11/05/03	01:43
6	MW-3-4	03-5923-3	Field Sample	5923-03	11/05/03	02:09
7	MW-3-5	03-5923-4	Field Sample	5923-04	11/05/03	02:35
8	TB-8-11-3-03	03-5923-5	Field Sample	5923-05	11/05/03	04:46
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

Data File : C:\MSDCHEM\1\DATA\03G4612\G4612P01.D
Acq On : 21 Oct 2003 9:14 am
Sample : ##03g4565,w 50ng
Misc :
MS Integration Params: Lscint.p
Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2

Vial: 1
Operator: zou
Inst : GCMS-A
Multiplr: 1.00



Spectrum Information: Average of 12.736 to 12.748 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.0	11745	PASS
75	95	30	60	45.0	31162	PASS
95	95	100	100	100.0	69181	PASS
96	95	5	9	6.6	4558	PASS
173	174	0.00	2	0.5	275	PASS
174	95	50	100	87.4	60456	PASS
175	174	5	9	7.7	4634	PASS
176	174	95	101	98.1	59312	PASS
177	176	5	9	7.0	4135	PASS

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name : APPLIED P & CH LAB Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 035923

Lab File ID: G 4612 P01 BFB Injection Date: 10/21/2003

Instrument ID: GCMS-A BFB Injection Time: 0914

GC Column: HP-VOC ID: 0.20 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.0
75	30.0 - 60.0% of mass 95	45.0
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.4 (0.5)1
174	50.0 - 100.0% of mass 95	87.4
175	5.0 - 9.0% of mass 174	6.7 (7.7)1
176	95.0 - 101.0% of mass 174	85.7 (98.1)1
177	5.0 - 9.0% of mass 176	6.0 (7.0)2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following SAMPLES, MS, MSD, BLANKS and STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0003	3-A0003	3-A0003.D	10/21/2003	1005
02	VSTD002	3-0002	3-0002.D	10/21/2003	1031
03	VSTD010	3-0010	3-0010.D	10/21/2003	1056
04	VSTD020	3-0020	3-0020.D	10/21/2003	1122
05	VSTD040	3-0040	3-0040.D	10/21/2003	1147
06	VSTD060	3-0060	3-0060.D	10/21/2003	1214
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

INITIAL CALIBRATION SUMMARY

Method File	e524a003		
Last Calibration Update	Mon Oct 27 13:56:31 2003		
Level 1 File Name	3-A0003.D	**Level 1 ID**	.3
Level 2 File Name	3-002.D	**Level 2 ID**	2
Level 3 File Name	3-0010.D	**Level 3 ID**	10
Level 4 File Name	3-0020.D	**Level 4 ID**	20
Level 5 File Name	3-0040.D	**Level 5 ID**	40
Level 6 File Name	3-0060.D	**Level 6 ID**	60
Level 7 File Name	3-0020.D	**Level 7 ID**	cc

Compound Name	Level 1 Response	Level 2 Response	Level 3 Response	Level 4 Response	Level 5 Response	Level 6 Response	Level 7 Response	Coeff X^0	Coeff X^1 / ave RF	Coeff X^2	R^2 / RSD
1 Fluorobenzene	920067	916201	919392	955116	907151	1006211	-1	------	------	------	------
3 di-Cl-di-F-methane	6437	39097	199979	303885	731076	1099511	-1	0.0000	0.2011	0.0000	0.1330
4 Chloromethane	6136	37417	181676	348991	739859	1132557	-1	0.0000	0.1997	0.0000	0.0704
2 F114	1527	19306	101058	155932	367886	551592	-1	0.0028	0.0932	0.0000	0.9919
5 vinyl chloride	4876	33446	161213	285451	640709	982033	-1	0.0000	0.1705	0.0000	0.0717
6 bromomethane	2539	18408	87613	168214	383891	601141	-1	0.0000	0.0969	0.0000	0.0659
7 chloroethane	2197	17752	90280	159905	376464	536590	-1	0.0000	0.0918	0.0000	0.1013
8 tri-Cl-F-methane	8394	56082	277768	461283	1030751	1532166	-1	0.0000	0.2819	0.0000	0.0992
91 Acetonitrile X10	10689	82041	382813	794170	1713507	2428244	-1	0.0000	0.0431	0.0000	0.0662
9 acrolein X10	5645	40130	201945	381523	807796	1232252	-1	0.0000	0.0212	0.0000	0.0467
11 acetone X10	-1	64324	288996	538495	1267205	1816586	-1	0.0000	0.0319	0.0000	0.0947
12 ethyl ether X5	13693	93915	436367	874255	1704647	2654028	-1	0.0000	0.0950	0.0000	0.0552
13 11-dichloroethene	6637	46215	229524	410040	877445	1367991	-1	0.0000	0.2376	0.0000	0.0605
14 Iodomethane	3461	29384	183879	356970	751141	1123042	-1	0.0038	0.1913	0.0000	0.9951
15 F-113	4492	28088	146108	224035	516639	784890	-1	0.0000	0.1441	0.0000	0.1231
16 acrylonitrile X10	10574	78358	419836	794346	1709905	2532493	-1	0.0000	0.0429	0.0000	0.0731
17 carbon disulfide	13839	85463	420250	772812	1671671	2561651	-1	0.0000	0.4524	0.0000	0.0750
94 Isopropyl Alcoholx10	331	1284	1238	28714	240070	128634	-1	0.0000	0.0020	0.0000	1.1427
18 methylene chloride	10278	48191	203033	407143	804880	1192483	-1	0.0203	0.2012	0.0000	0.9947
19 t-12-di-Cl-ethene	6615	45733	217854	407874	774111	1126298	-1	0.0000	0.2233	0.0000	0.1039
20 t-Bu-Me-ether	9529	70095	362056	751228	1592599	2437498	-1	0.0000	0.3929	0.0000	0.0773
95 Tert butyl alcoholx10	1332	4624	88338	76985	452680	251872	-1	0.0000	0.0066	0.0000	0.6496

94 allyl chloride	10689	82041	426268	794170	1724483	2428244	-1	0.0000	0.4409	0.0000	0.0706
21 11-dichloroethane	10035	71189	342138	689918	1398310	2101878	-1	0.0000	0.3698	0.0000	0.0415
97 propionitrile	103	3119	18745	29270	62391	109975	-1	0.0000	0.0176	0.0000	0.1055
22 c-12-di-Cl-ethene	6459	46844	225560	436935	845644	1210430	-1	0.0000	0.2329	0.0000	0.0801
23 22-Dichloropropane	5693	38859	218612	456844	979998	1513030	-1	0.0000	0.2360	0.0000	0.1011
24 Br-Cl-methane	3294	23046	109590	215148	438926	655419	-1	0.0000	0.1177	0.0000	0.0523
25 chloroform	13164	80631	375460	741683	1492648	2229387	-1	0.0000	0.4157	0.0000	0.0920
26 tetrahydrofuranX5	4044	28808	169729	317711	726346	1114014	-1	0.0000	0.0346	0.0000	0.1155
98 Diisopropyl ether	16931	136442	688556	1387177	2723439	4088155	-1	0.0000	0.7101	0.0000	0.0772
27 Di-Br-F-Me (surr)	6137	45047	218874	439096	880145	1314263	-1	0.0000	0.2348	0.0000	0.0481
99 ETBE	9591	74005	411030	879689	1934215	2984281	-1	0.0000	0.4477	0.0000	0.1468
29 1,2-Di-Cl-Et-d4 (S1)	5167	39287	192209	385356	801084	1206050	-1	0.0000	0.2091	0.0000	0.0418
30 12-dichloroethane	2318	14864	77221	146461	303955	463659	-1	0.0000	0.0811	0.0000	0.0434
32 vinyl acetate X5	36279	291623	1683396	3463521	7301957	11062661	-1	0.0000	0.3465	0.0000	0.1412
92 Nitro Methane(x10)	1574	10571	358371	95786	134103	298076	-1	0.0000	0.0117	0.0000	1.3083
33 2-butanoneMEK X10	14739	98541	459782	956754	2014463	3034414	-1	0.0000	0.0522	0.0000	0.0453
93 Ethyl Acetate x2	6463	37342	237607	465630	1199719	1687653	-1	0.0000	0.1292	0.0000	0.1682
34 111-trichloroethane	9393	63933	333945	629233	1352461	2070811	-1	0.0000	0.3496	0.0000	0.0454
35 11-Di-Cl-propene	6749	49362	260487	484228	1020849	1516179	-1	0.0000	0.2639	0.0000	0.0625
36 benzene	23536	167998	811668	1581767	3067808	4519766	-1	0.0000	0.8457	0.0000	0.0673
37 CCl4	9052	59763	312695	555550	1228562	1842053	-1	0.0000	0.3215	0.0000	0.0608

Compound Name	Level 1 Response	Level 2 Response	Level 3 Response	Level 4 Response	Level 5 Response	Level 6 Response	Level 7 Response	Coeff X^0	Coeff X^1 / ave RF	Coeff X^2	R^2 / RSD
100 Isobutyl alcoholx10	2932	21047	112031	247109	552842	880424	-1	------	------	------	------
38 thiophene	10222	83170	428533	868274	1718044	2554816	-1	0.0000	0.4403	0.0000	0.0870
39 12-di-Cl-propane	4815	37555	178169	370946	752605	1124998	-1	0.0000	0.1935	0.0000	0.0628
40 trichloroethene	7696	50098	255616	501517	1020048	1520360	-1	0.0000	0.2710	0.0000	0.0423
41 dibromomethane	3770	26033	124373	247759	508912	747601	-1	0.0000	0.1346	0.0000	0.0506
101 TAME	7879	59032	335735	716981	1622049	2525816	-1	-0.0345	0.4304	0.0000	0.9963
42 Br-di-Cl-methane	9392	56733	274489	546104	1129675	1703118	-1	0.0000	0.3046	0.0000	0.0694
43 Me-methacrylate	1457	14747	87065	188318	435160	662734	-1	-0.0095	0.1138	0.0000	0.9946
44 2-ClEt-Vi-ether10	4887	45249	275793	591932	1294105	1950851	-1	-0.0367	0.0357	0.0000	0.9955
45 c-13-di-Cl-propene	6769	54923	293425	608486	1252896	1891415	-1	0.0000	0.3069	0.0000	0.1096
46 t-1,3-dichloropropene	5153	40425	231011	505285	1067475	1638452	-1	-0.0097	0.2792	0.0000	0.9968
47 Chlorobezene-d5	745928	732691	724575	731811	659336	705610	-1	0.0000	1.0000	0.0000	0.0000

Compound Name	Level 1 Response	Level 2 Response	Level 3 Response	Level 4 Response	Level 5 Response	Level 6 Response	Level 7 Response	Coeff X^0	Coeff X^1 / ave RF	Coeff X^2	R^2 / RSD
48 112-tri-Cl-Et	4896	31570	158039	308164	644393	936372	-1	0.0000	0.2214	0.0000	0.0533
49 13-di-Cl-propane	7569	48826	251096	479955	958048	1392110	-1	0.0000	0.3397	0.0000	0.0396
50 Et methacrylate	2785	29334	189197	404574	897662	1374874	-1	-0.0430	0.3345	0.0000	0.9960
51 di-Br-Cl-methane	7359	44728	219307	430191	895491	1332246	-1	0.0000	0.3141	0.0000	0.0548
52 bromoform	4029	26611	127022	257402	537161	813031	-1	0.0000	0.1848	0.0000	0.0599
53 1,4-dichlorobutane-2	7248	52525	270048	530472	1118631	1708578	-1	0.0000	0.3742	0.0000	0.0947
54 MIBK	2727	20267	114402	244409	567049	883730	-1	-0.0334	0.2144	0.0000	0.9947
55 toluene-d8	22176	162055	811859	1597728	3175057	4699033	-1	0.0000	1.1038	0.0000	0.0617
56 toluene	32453	204349	957684	1867212	3679239	5453434	-1	0.0000	1.3542	0.0000	0.0513
57 2-hexanone X5	8296	70148	400071	806303	1789801	2714840	-1	-0.0660	0.1318	0.0000	0.9958
58 12-dibromoethane	4393	32436	159989	322735	683020	1029927	-1	0.0000	0.2269	0.0000	0.0954
59 tetra-Cl-ethene	8603	59173	281865	498130	1001817	1436032	-1	0.0000	0.3728	0.0000	0.0719
60 chlorobenzene	21200	144953	676974	1307160	2492370	3536493	-1	0.0000	0.9241	0.0000	0.0576
61 1112-tetra-Cl-Et	7365	51367	249086	487380	969491	1437439	-1	0.0000	0.3439	0.0000	0.0403
62 1,4-Dichlorobenzene-d4	436784	441685	431820	433290	398842	428493	-1	0.0000	1.0000	0.0000	0.0000
63 1-chlorohexane	3125	20185	105292	181129	379300	546400	-1	0.0000	0.2284	0.0000	0.0636
64 Et-Bz	31613	225200	1128701	2162672	4307205	6378701	-1	0.0000	2.5420	0.0000	0.0404
65 m/p-Xylenes X2	51588	364290	1753788	3322945	6407191	9314343	-1	0.0000	1.9663	0.0000	0.0463
66 styrene	19899	158986	755749	1448349	2712603	3842415	-1	0.0000	1.6558	0.0000	0.0748
67 o-xylene	25030	181225	888564	1715323	3289680	4761198	-1	0.0000	1.9855	0.0000	0.0445
68 1122-Tetra-Cl-Et	4786	35408	176142	333638	679431	1005365	-1	0.0000	0.3960	0.0000	0.0524
69 123-tri-Cl-Pr	1463	11857	58506	111098	231129	345542	-1	0.0000	0.1315	0.0000	0.0844
70 4-Br-1-F-Bz (S3)	9236	60769	292727	571173	1114624	1638683	-1	0.0000	0.6776	0.0000	0.0376
71 isopropylbenzene	31809	228075	1204677	2257352	4576796	6821750	-1	0.0000	2.6544	0.0000	0.0592
72 bromobenzene	8279	62596	299551	577972	1123002	1610222	-1	0.0000	0.6719	0.0000	0.0539
92 t-1,4-dichloro-2-butene	370	3850	26890	58909	138278	214154	-1	-0.0139	0.0860	0.0000	0.9950
73 n-propylbenzene	9091	70513	355352	656540	1290074	1877926	-1	0.0000	0.7686	0.0000	0.0653
74 2-Cl-Toluene	7570	61543	297725	558317	1084812	1601091	-1	0.0000	0.6518	0.0000	0.0707
75 4-Cl-Toluene	9182	64367	296683	566381	1062470	1497703	-1	0.0000	0.6698	0.0000	0.0750
76 135-tri-Me-Benzene	28727	213694	1063069	2008540	3906361	5670674	-1	0.0000	2.3409	0.0000	0.0517
77 4-iso-Pr-toluene	31720	226621	1149787	2111126	4215398	6174914	-1	0.0000	2.5215	0.0000	0.0463
78 124-tri-Me-Benzene	29971	222021	1078747	2103275	4147713	6124395	-1	0.0000	2.4513	0.0000	0.0448
79 tert-butylbenzene	24279	177466	929162	1736357	3598467	5289165	-1	0.0000	2.0550	0.0000	0.0671

80 13-DCB	19447	131664	611576	1176380	2227519	3166301	-1	0.0000	1.3960	0.0000	0.0684
81 sec-butylbenzene	38627	268975	1387531	2530666	5231475	7732088	-1	0.0000	3.0688	0.0000	0.0475
82 14-DCB	21754	133604	619366	1184125	2334471	3417867	-1	0.0000	1.4610	0.0000	0.0806
83 Cl-benzyl	871	5857	44122	106539	268318	431461	-1	-0.0412	0.1731	0.0000	0.9920
84 12-DCB	17721	121367	559240	1055514	2046326	2953834	-1	0.0000	1.2785	0.0000	0.0657
85 n-butylbenzene	8164	59910	307483	567085	1127859	1596385	-1	0.0000	0.6659	0.0000	0.0599
86 12-diBr-2-Cl-Pra	1032	7477	40003	83208	177685	276212	-1	0.0000	0.0951	0.0000	0.1330
87 124-tri-Cl-Bz	9169	66792	354819	702123	1402301	2085639	-1	0.0000	0.7963	0.0000	0.0771
88 naphthalene	11079	87277	545491	1159824	2506296	3927146	-1	-0.1762	1.5623	0.0000	0.9976
89 hx-Cl-butadiene	6445	40287	205532	360400	746186	1096494	-1	0.0000	0.4557	0.0000	0.0644
90 123-Tri-Cl-Bz	7754	57941	307963	600915	1229181	1798500	-1	0.0000	0.6874	0.0000	0.0870

Response F or Report GCMS-A

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 13:56:31 2003
Response via : Initial Calibration

Calibration Files
.3 =3-A0003.D 2 =3-002.D 10 =3-0010.D
20 =3-0020.D 40 =3-0040.D 60 =3-0060.D

			Compound	.3	2	10	20	40	60	Avg	%RSD	r ²
1)	I	1	Fluorobenzene	ISTD								
2)		3	di-Cl-di-F-m	0.233	0.213	0.218	0.159	0.201	0.182	0.201	13.30	
3)	p	4	Chloromethan	0.222	0.204	0.198	0.183	0.204	0.188	0.200	7.04	
4)		2	F114	0.055	0.105	0.110	0.082	0.101	0.091	0.091	22.20	0.990
5)	C	5	vinyl chlori	0.177	0.183	0.175	0.149	0.177	0.163	0.171	7.17	
6)		6	bromomethane	0.092	0.100	0.095	0.088	0.106	0.100	0.097	6.59	
7)		7	chloroethane	0.080	0.097	0.098	0.084	0.104	0.089	0.092	10.13	
8)		8	tri-Cl-F-met	0.304	0.306	0.302	0.241	0.284	0.254	0.282	9.92	
9)		91	Acetonitrile		0.045	0.042	0.042	0.047	0.040	0.043	6.62	
10)		9	acrolein	0.020	0.022	0.022	0.020	0.022	0.020	0.021	4.67	
11)		11	acetone X		0.035	0.031	0.028	0.035	0.030	0.032	9.47	
12)		12	ethyl ether	0.099	0.103	0.095	0.092	0.094	0.088	0.095	5.52	
13)	M, C	13	11-dichloroe	0.240	0.252	0.250	0.215	0.242	0.227	0.238	6.05#	
14)		14	Iodomethane	0.125	0.160	0.200	0.187	0.207	0.186	0.178	16.98	0.995
15)		15	F-113	0.163	0.153	0.159	0.117	0.142	0.130	0.144	12.31	
16)		16	acrylonitril	0.038	0.043	0.046	0.042	0.047	0.042	0.043	7.31	
17)		17	carbon disul	0.501	0.466	0.457	0.405	0.461	0.424	0.452	7.50	
18)		94	Isopropyl Al	0.001	0.001	0.000	0.002	0.007	0.002	0.002	114.27	
19)		18	methylene ch	0.372	0.263	0.221	0.213	0.222	0.198	0.248	26.04	0.995
20)		19	t-12-di-Cl-e	0.240	0.250	0.237	0.214	0.213	0.187	0.223	10.39	
21)		20	t-Bu-Me-ethe	0.345	0.383	0.394	0.393	0.439	0.404	0.393	7.73	
22)		95	Tert butyl a		0.003	0.010	0.004	0.012	0.004	0.007	64.96	
23)		94	allyl chlori		0.448	0.464	0.416	0.475	0.402	0.441	7.06	
24)	p	21	11-dichloroe	0.364	0.389	0.372	0.361	0.385	0.348	0.370	4.15	
25)		97	propionitril		0.017	0.020	0.015	0.017	0.018	0.018	10.55	
26)		22	c-12-di-Cl-e	0.234	0.256	0.245	0.229	0.233	0.200	0.233	8.01	
27)		23	22-Dichlorop	0.206	0.212	0.238	0.239	0.270	0.251	0.236	10.11	
28)		24	Br-Cl-methan	0.119	0.126	0.119	0.113	0.121	0.109	0.118	5.23	

(#) = Out of Range

1229

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 13:56:31 2003
Response via : Initial Calibration

Calibration Files
.3 =3-A0003.D 2 =3-002.D 10 =3-0010.D
20 =3-0020.D 40 =3-0040.D 60 =3-0060.D

		Compound	.3	2	10	20	40	60	Avg	%RSD	
29)	C	25 chloroform	0.477	0.440	0.408	0.388	0.411	0.369	0.416	9.20	
30)		26 tetrahydrofu	0.029	0.031	0.037	0.033	0.040	0.037	0.035	11.55	
31)		98 Diisopropyl	0.613	0.745	0.749	0.726	0.751	0.677	0.710	7.72	
32)	S	27 Di-Br-F-Me (		0.246	0.238	0.230	0.243	0.218	0.235	4.81	
33)		99 ETBE	0.347	0.404	0.447	0.461	0.533	0.494	0.448	14.68	
34)	S	29 1,2-Di-Cl-Et		0.214	0.209	0.202	0.221	0.200	0.209	4.18	
35)		30 12-dichloroe	0.084	0.081	0.084	0.077	0.084	0.077	0.081	4.34	
36)		32 vinyl acetat	0.263	0.318	0.366	0.363	0.402	0.366	0.346	14.12	
37)		92 Nitro Methan		0.006	0.039	0.005	0.004	0.005	0.012	130.83	
38)		33 2-butanoneME	0.053	0.054	0.050	0.050	0.056	0.050	0.052	4.53	
39)		93 Ethyl Acetat	0.117	0.102	0.129	0.122	0.165	0.140	0.129	16.82	
40)		34 111-trichlor	0.340	0.349	0.363	0.329	0.373	0.343	0.350	4.54	
41)		35 11-Di-Cl-pro	0.245	0.269	0.283	0.253	0.281	0.251	0.264	6.25	
42)	M	36 benzene	0.853	0.917	0.883	0.828	0.845	0.749	0.846	6.73	
43)		37 CCl4	0.328	0.326	0.340	0.291	0.339	0.305	0.321	6.08	
44)		100 Isobutyl al	0.011	0.011	0.012	0.013	0.015	0.015	0.013	13.92	
45)		38 thiophene	0.370	0.454	0.466	0.455	0.473	0.423	0.440	8.70	
46)	C	39 12-di-Cl-pro	0.174	0.205	0.194	0.194	0.207	0.186	0.194	6.28#	
47)	M	40 trichloroeth	0.279	0.273	0.278	0.263	0.281	0.252	0.271	4.23	
48)		41 dibromometha	0.137	0.142	0.135	0.130	0.140	0.124	0.135	5.06	
49)		101 TAME	0.285	0.322	0.365	0.375	0.447	0.418	0.369	16.15	0.995
50)		42 Br-di-Cl-met	0.340	0.310	0.299	0.286	0.311	0.282	0.305	6.94	
51)		43 Me-methacryl	0.053	0.080	0.095	0.099	0.120	0.110	0.093	25.59	0.994
52)		44 2-ClEt-Vi-et	0.018	0.025	0.030	0.031	0.036		0.028	24.68	0.993
53)		45 c-13-di-Cl-p	0.245	0.300	0.319	0.319	0.345	0.313	0.307	10.96	
54)		46 t-1,3-dichlo	0.187	0.221	0.251	0.265	0.294	0.271	0.248	15.58	0.997
55)	I	47 Chlorobezene-d5	----------ISTD----------								
56)		48 112-tri-Cl-E	0.219	0.215	0.218	0.211	0.244	0.221	0.221	5.33	

(#) = Out of Range

1230

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 13:56:31 2003
Response via : Initial Calibration

Calibration Files
.3 =3-A0003.D 2 =3-002.D 10 =3-0010.D
20 =3-0020.D 40 =3-0040.D 60 =3-0060.D

			Compound	.3	2	10	20	40	60	Avg	%RSD	
57)		49	13-di-Cl-pro	0.338	0.333	0.347	0.328	0.363	0.329	0.340	3.96	
58)		50	Et methacryl	0.124	0.200	0.261	0.276	0.340	0.325	0.255	31.77	0.995
59)		51	di-Br-Cl-met	0.329	0.305	0.303	0.294	0.340	0.315	0.314	5.48	
60)	P	52	bromoform	0.180	0.182	0.175	0.176	0.204	0.192	0.185	5.99	
61)		53	1,4-dichloro	0.324	0.358	0.373	0.362	0.424	0.404	0.374	9.47	
62)		54	MIBK	0.122	0.138	0.158	0.167	0.215	0.209	0.168	22.23	0.992
63)	s	55	toluene-d8	0.991	1.106	1.120	1.092	1.204	1.110	1.104	6.17	
64)	M,C	56	toluene	1.450	1.395	1.322	1.276	1.395	1.288	1.354	5.13	
65)		57	2-hexanone X	0.074	0.096	0.110	0.110	0.136	0.128	0.109	20.41	0.994
66)		58	12-dibromoet	0.196	0.221	0.221	0.221	0.259	0.243	0.227	9.54	
67)		59	tetra-Cl-eth	0.384	0.404	0.389	0.340	0.380	0.339	0.373	7.19	
68)	M,P	60	chlorobenzen	0.947	0.989	0.934	0.893	0.945	0.835	0.924	5.76	
69)		61	1112-tetra-C	0.329	0.351	0.344	0.333	0.368	0.340	0.344	4.03	
70)	I	62	1,4-Dichlorobenzen	----------	----------	----------	ISTD	----------	----------	----------	----------	
71)		63	1-chlorohexa	0.238	0.228	0.244	0.209	0.238	0.213	0.228	6.36	
72)	C	64	Et-Bz	2.413	2.549	2.614	2.496	2.700	2.481	2.542	4.04#	
73)		65	m/p-Xylenes	1.968	2.062	2.031	1.917	2.008	1.811	1.966	4.63	
74)		66	styrene	1.519	1.800	1.750	1.671	1.700	1.495	1.656	7.48	
75)		67	o-xylene	1.910	2.052	2.058	1.979	2.062	1.852	1.985	4.45	
76)	p	68	1122-Tetra-C	0.365	0.401	0.408	0.385	0.426	0.391	0.396	5.24	
77)		69	123-tri-Cl-P	0.112	0.134	0.135	0.128	0.145	0.134	0.131	8.44	
78)	S	70	4-Br-1-F-Bz	0.705	0.688	0.678	0.659	0.699	0.637	0.678	3.76	
79)		71	isopropylben	2.428	2.582	2.790	2.605	2.869	2.653	2.654	5.92	
80)		72	bromobenzene	0.632	0.709	0.694	0.667	0.704	0.626	0.672	5.39	
81)		92	t-1,4-dichlo	0.028	0.044	0.062	0.068	0.087	0.083	0.062	36.62	0.993
82)		73	n-propylbenz	0.694	0.798	0.823	0.758	0.809	0.730	0.769	6.53	
83)		74	2-Cl-Toluene	0.578	0.697	0.689	0.644	0.680	0.623	0.652	7.07	
84)		75	4-Cl-Toluene	0.701	0.729	0.687	0.654	0.666	0.583	0.670	7.50	

(#) = Out of Range

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 13:56:31 2003
Response via : Initial Calibration

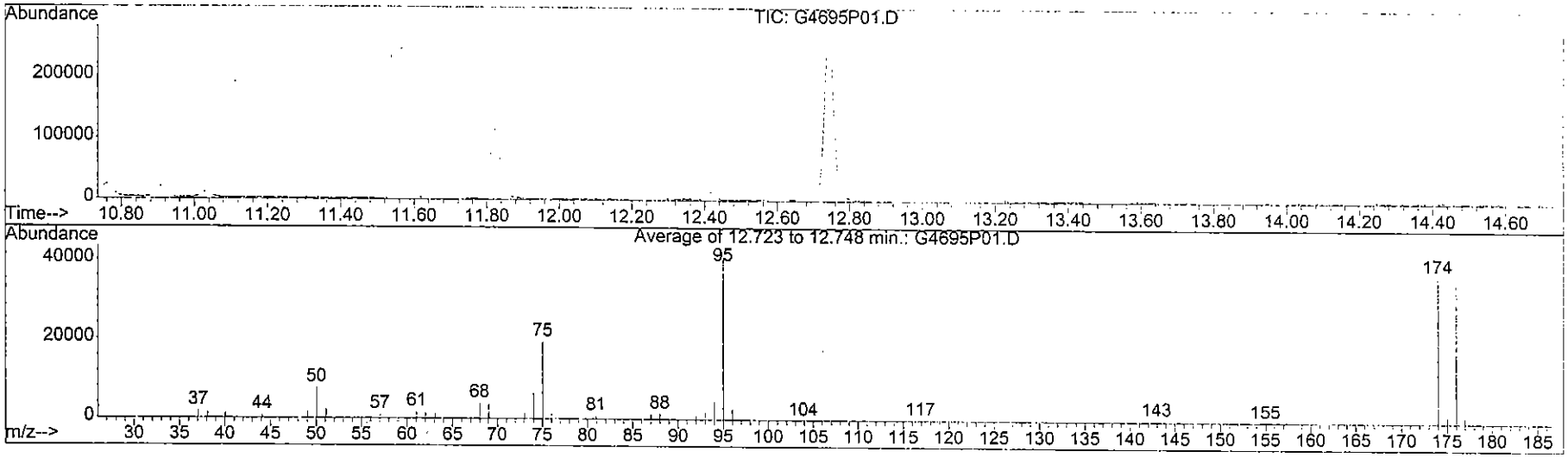
Calibration Files
.3 =3-A0003.D 2 =3-002.D 10 =3-0010.D
20 =3-0020.D 40 =3-0040.D 60 =3-0060.D

	Compound	.3	2	10	20	40	60	Avg	%RSD	
85)	76 135-tri-Me-B	2.192	2.419	2.462	2.318	2.449	2.206	2.341	5.17	
86)	77 4-iso-Pr-tol	2.421	2.565	2.663	2.436	2.642	2.402	2.522	4.63	
87)	78 124-tri-Me-B	2.287	2.513	2.498	2.427	2.600	2.382	2.451	4.48	
88)	79 tert-butylbe	1.853	2.009	2.152	2.004	2.256	2.057	2.055	6.71	
89)	80 13-DCB	1.484	1.490	1.416	1.357	1.396	1.232	1.396	6.84	
90)	81 sec-butylben	2.948	3.045	3.213	2.920	3.279	3.007	3.069	4.75	
91)	82 14-DCB	1.660	1.512	1.434	1.366	1.463	1.329	1.461	8.06	
92)	83 Cl-benzyl	0.066	0.066	0.102	0.123	0.168	0.168	0.116	39.76	0.989
93)	84 12-DCB	1.352	1.374	1.295	1.218	1.283	1.149	1.278	6.57	
94)	85 n-butylbenze	0.623	0.678	0.712	0.654	0.707	0.621	0.666	5.99	
95)	86 12-diBr-2-Cl	0.079	0.085	0.093	0.096	0.111	0.107	0.095	13.30	
96)	87 124-tri-Cl-B	0.700	0.756	0.822	0.810	0.879	0.811	0.796	7.71	
97)	88 naphthalene	0.845	0.988	1.263	1.338	1.571	1.528	1.256	23.09	0.997
98)	89 hx-Cl-butadi	0.492	0.456	0.476	0.416	0.468	0.426	0.456	6.44	
99)	90 123-Tri-Cl-B	0.592	0.656	0.713	0.693	0.770	0.700	0.687	8.70	

(#) = Out of Range

BFB

Data File : C:\MSDCHEM\1\DATA\03G4695\G4695P01.D Vial: 1
Acq On : 4 Nov 2003 7:30 pm Operator: zou
Sample : ##03g4695,w 50ng Inst : GCMS-A
Misc : Multiplr: 1.00
MS Integration Params: Lscint.p
Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2



Spectrum Information: Average of 12.723 to 12.748 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.5	7665	PASS
75	95	30	60	46.9	19418	PASS
95	95	100	100	100.0	41379	PASS
96	95	5	9	6.5	2706	PASS
173	174	0.00	2	0.2	69	PASS
174	95	50	100	89.3	36956	PASS
175	174	5	9	6.9	2564	PASS
176	174	95	101	95.8	35407	PASS
177	176	5	9	6.7	2376	PASS

G4695P01.D E524A003.M Wed Nov 05 09:47:17 2003

FORM-5A

Applied P & Ch Laboratory

Volatile Organic Instrument Performance Check for Method 524.2

Bromofluorobenzene (BFB), Part II

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	035923
Project ID:	JPL	BFB Inj. Date:	11/04/03	Batch No:	03G4695
		BFB Inj. Time:	19:30	Sequence No:	03G4695
Project No:	04-4428.10	Instrument ID:	A	GC Column:	HP-VOC
Data File Name:	G4695P01	Heated Purge: (Y/N)	N	Column ID:	0.20 mm

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

#	Client Sample No	Lab Sample ID	Data File Name	Date Analyzed	Time Analyzed
1	03G4695-CCV-01	03G4695-CCV-01	G4695Q01	11/04/03	20:21
2	03G4695-LCS-01	03G4695-LCS-01	G4695L01	11/04/03	20:47
3	MW-3-4MS	03-5923-3MS	G4695M01	11/04/03	21:38
4	MW-3-4MSD	03-5923-3MSD	G4695N01	11/04/03	22:04
5	03G4695-MB-01	03G4695-MB-01	G4695K01	11/05/03	00:45
6	EB-8-11-3-03	03-5923-1	5923-01	11/05/03	01:14
7	MW-3-3	03-5923-2	5923-02	11/05/03	01:43
8	MW-3-4	03-5923-3	5923-03	11/05/03	02:09
9	MW-3-5	03-5923-4	5923-04	11/05/03	02:35
10	TB-8-11-3-03	03-5923-5	5923-05	11/05/03	04:46
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Continuing Calibration Concentration Summary

Data File G4695Q01
Method File E524A003

Compound Name	Amount	Actual	Units	%Dev	Target Response
1 Fluorobenzene	10	10.00	ppb	0.00	715647
3 di-Cl-di-F-methane	20	18.32	ppb	8.41	263659
4 Chloromethane	20	14.84	ppb	25.79	212128
2 F114	20	20.13	ppb	0.65	136252
5 vinyl chloride	20	18.35	ppb	8.23	223982
6 bromomethane	20	12.97	ppb	35.14	89917
7 chloroethane	20	18.93	ppb	5.33	124441
8 tri-Cl-F-methane	20	23.16	ppb	15.80	467277
91 Acetonitrile X10	200	173.45	ppb	13.27	534824
9 acrolein X10	200	188.61	ppb	5.69	285620
11 acetone X10	200	204.06	ppb	2.03	466557
12 ethyl ether X5	100	94.18	ppb	5.82	640344
13 11-dichloroethene	20	21.12	ppb	5.58	358997
14 Iodomethane	20	17.95	ppb	10.26	248423
15 F-113	20	23.42	ppb	17.10	241527
16 acrylonitrile X10	200	172.16	ppb	13.92	528535
17 carbon disulfide	20	17.59	ppb	12.03	569597
94 Isopropyl Alcoholx10	200	273.15	ppb	36.57	40022
18 methylene chloride	20	17.92	ppb	10.41	272482
19 t-12-di-Cl-ethene	20	18.55	ppb	7.27	296333
20 t-Bu-Me-ether	20	20.40	ppb	2.00	573646
95 Tert butyl alcoholx10	200	267.42	ppb	33.71	125580
94 allyl chloride	20	16.95	ppb	15.25	534824
21 11-dichloroethane	20	18.49	ppb	7.54	489410
97 propionitrile	20	16.90	ppb	15.51	21319
22 c-12-di-Cl-ethene	20	18.62	ppb	6.88	310390
23 22-Dichloropropane	20	23.71	ppb	18.56	400452
24 Br-Cl-methane	20	18.32	ppb	8.38	154396
25 chloroform	20	18.92	ppb	5.39	562936
26 tetrahydrofuranX5	100	86.05	ppb	13.95	213358
98 Diisopropyl ether	20	18.40	ppb	8.02	934859
27 Di-Br-F-Me (surr)	20	19.52	ppb	2.40	327993
99 ETBE	20	21.32	ppb	6.59	683011
29 1,2-Di-Cl-Et-d4 (S1)	20	19.66	ppb	1.70	294251
30 12-dichloroethane	20	19.86	ppb	0.69	115209
32 vinyl acetate X5	100	98.45	ppb	1.55	2441215
92 Nitro Methane(x10)	200	77.46	ppb	61.27	64742
33 2-butanoneMEK X10	200	184.36	ppb	7.82	688357
93 Ethyl Acetate x2	40	36.16	ppb	9.60	334336
34 111-trichloroethane	20	22.30	ppb	11.50	557928
35 11-Di-Cl-propene	20	21.00	ppb	4.99	396504
36 benzene	20	18.03	ppb	9.84	1091366
37 CCl4	20	23.68	ppb	18.41	544796

Compound Name	Amount	Actual	Units	%Dev	Target Response
100 Isobutyl alcoholx10	200	205.65	ppb	2.82	188988
38 thiophene	20	18.86	ppb	5.71	594163
39 12-di-Cl-propane	20	17.84	ppb	10.81	247046
40 trichloroethene	20	19.42	ppb	2.90	376585
41 dibromomethane	20	19.18	ppb	4.11	184754
101 TAME	20	18.76	ppb	6.22	553004
42 Br-di-Cl-methane	20	18.93	ppb	5.33	412782
43 Me-methacrylate	20	16.91	ppb	15.45	130856
44 2-ClEt-Vi-ether10	200	140.25	ppb	29.87	332530
45 c-13-di-Cl-propene	20	19.79	ppb	1.05	434597
46 t-1,3-dichloropropene	20	19.14	ppb	4.32	375373
47 Chlorobezene-d5	10	10.00	ppb	0.00	548576
48 112-tri-Cl-Et	20	18.01	ppb	9.97	218688
49 13-di-Cl-propane	20	18.40	ppb	8.01	342797
50 Et methacrylate	20	17.18	ppb	14.09	291715

Compound Name	Amount	Actual	Units	%Dev	Target Response
51 di-Br-Cl-methane	20	19.43	ppb	2.85	334834
52 bromoform	20	20.03	ppb	0.15	203010
53 1,4-dichlorobutane-2	20	18.36	ppb	8.19	376926
54 MIBK	20	16.06	ppb	19.68	170571
55 toluene-d8	20	18.99	ppb	5.03	1150098
56 toluene	20	17.91	ppb	10.45	1330590
57 2-hexanone X5	100	84.37	ppb	15.63	573801
58 12-dibromoethane	20	18.32	ppb	8.39	228023
59 tetra-Cl-ethene	20	21.20	ppb	6.01	433556
60 chlorobenzene	20	18.90	ppb	5.49	958176
61 1112-tetra-Cl-Et	20	20.13	ppb	0.64	379743
62 1,4-Dichlorobenzene-d4	10	10.00	ppb	0.00	322477
63 1-chlorohexane	20	21.32	ppb	6.61	157016
64 Et-Bz	20	20.04	ppb	0.19	1642645
65 m/p-Xylenes X2	40	40.09	ppb	0.22	2542018
66 styrene	20	19.78	PPB	1.08	1056323
67 o-xylene	20	20.39	ppb	1.93	1305271
68 1122-Tetra-Cl-Et	20	18.80	ppb	6.02	240022
69 123-tri-Cl-Pr	20	20.22	ppb	1.10	85725
70 4-Br-1-F-Bz (S3)	20	20.08	ppb	0.41	438854
71 isopropylbenzene	20	21.36	ppb	6.81	1828579
72 bromobenzene	20	20.59	ppb	2.96	446139
92 t-1,4-dichloro-2-butene	20	18.52	ppb	7.38	46886
73 n-propylbenzene	20	21.72	ppb	8.59	538313
74 2-Cl-Toluene	20	20.82	ppb	4.08	437541
75 4-Cl-Toluene	20	19.96	ppb	0.18	431201
76 135-tri-Me-Benzene	20	21.19	ppb	5.95	1599559
77 4-iso-Pr-toluene	20	21.63	ppb	8.13	1758525
78 124-tri-Me-Benzene	20	20.45	ppb	2.23	1616186
79 tert-butylbenzene	20	22.45	ppb	12.27	1488053
80 13-DCB	20	19.98	ppb	0.12	899278
81 sec-butylbenzene	20	21.57	ppb	7.85	2134667

82 14-DCB	20	19.41	ppb	2.95	914520
83 Cl-benzyl	20	18.01	ppb	9.93	87275
84 12-DCB	20	19.90	ppb	0.52	820293
85 n-butylbenzene	20	21.95	ppb	9.73	471270
86 12-diBr-2-Cl-Pra	20	19.97	ppb	0.16	61268
87 124-tri-Cl-Bz	20	20.70	ppb	3.48	531464
88 naphthalene	20	18.24	ppb	8.79	862264
89 hx-Cl-butadiene	20	23.29	ppb	16.45	342236
90 123-Tri-Cl-Bz	20	20.89	ppb	4.44	462990

Average D % 8.4284793

Evaluate Continuing Calibration Report

1237

Data File : C:\MSDCHEM\1\DATA\03G4695\G4695Q01.D Vial: 3
Acq On : 4 Nov 2003 8:21 pm Operator: zou
Sample : f=1 Inst : GCMS-A
Misc : Multiplr: 1.00
MS Integration Params: Lscint.p

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 14:05:06 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

			Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1	Fluorobenzene	1.000	1.000	0.0	75	0.00
2		3	di-Cl-di-F-methane	0.201	0.184	8.5	87	0.00
3	p	4	Chloromethane	0.200	0.148	26.0#	61	0.01
4		2	F114	0.091	0.095	-4.4	87	0.00
5	C	5	vinyl chloride	0.171	0.156	8.8	78	0.00
6		6	bromomethane	0.097	0.063	35.1#	53	0.00
7		7	chloroethane	0.092	0.087	5.4	78	0.00
8		8	tri-Cl-F-methane	0.282	0.326	-15.6	101	0.00
9		91	Acetonitrile X10	0.043	0.037	14.0	67	0.00
10		9	acrolein X10	0.021	0.020	4.8	75	0.00
11		11	acetone X10	0.032	0.033	-3.1	87	-0.02
12		12	ethyl ether X5	0.095	0.089	6.3	73	0.00
13	M, C	13	11-dichloroethene	0.238	0.251	-5.5	88	0.00
14		14	Iodomethane	0.178	0.174	2.2	70	0.00
15		15	F-113	0.144	0.169	-17.4	108	0.00
16		16	acrylonitrile X10	0.043	0.037	14.0	67	0.00
17		17	carbon disulfide	0.452	0.398	11.9	74	0.00
18		94	Isopropyl Alcoholx10	0.002	0.003	-50.0#	139	-0.10
19		18	methylene chloride	0.248	0.190	23.4#	67	0.00
20		19	t-12-di-Cl-ethene	0.223	0.207	7.2	73	0.00
21		20	t-Bu-Me-ether	0.393	0.401	-2.0	76	0.00
22		95	Tert butyl alcoholx10	0.007	0.009	-28.6#	163	-0.04
23		94	allyl chloride	0.441	0.374	15.2	67	0.00
24	p	21	11-dichloroethane	0.370	0.342	7.6	71	0.00
25		97	propionitrile	0.018	0.015	16.7	73	-0.01
26		22	c-12-di-Cl-ethene	0.233	0.217	6.9	71	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

1238

Data File : C:\MSDCHEM\1\DATA\03G4695\G4695Q01.D Vial: 3
Acq On : 4 Nov 2003 8:21 pm Operator: zou
Sample : f=1 Inst : GCMS-A
Misc : Multiplr: 1.00
MS Integration Params: Lscint.p

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 14:05:06 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
27		23 22-Dichloropropane	0.236	0.280	-18.6	88	0.00
28		24 Br-Cl-methane	0.118	0.108	8.5	72	0.00
29	C	25 chloroform	0.416	0.393	5.5	76	0.00
30		26 tetrahydrofuranX5	0.035	0.030	14.3	67	0.00
31		98 Diisopropyl ether	0.710	0.653	8.0	67	0.00
32	S	27 Di-Br-F-Me (surr)	0.235	0.229	2.6	75	0.00
33		99 ETBE	0.448	0.477	-6.5	78	0.00
34	S	29 1,2-Di-Cl-Et-d4 (S1)	0.209	0.206	1.4	76	0.00
35		30 12-dichloroethane	0.081	0.080	1.2	79	0.00
36		32 vinyl acetate X5	0.346	0.341	1.4	70	0.00
37		92 Nitro Methane(x10)	0.012	0.005	58.3#	68	-0.03
38		33 2-butanoneMEK X10	0.052	0.048	7.7	72	0.00
39		93 Ethyl Acetate x2	0.129	0.117	9.3	72	0.00
40		34 111-trichloroethane	0.350	0.390	-11.4	89	0.00
41		35 11-Di-Cl-propene	0.264	0.277	-4.9	82	0.00
42	M	36 benzene	0.846	0.763	9.8	69	0.00
43		37 CCl4	0.321	0.381	-18.7	98	0.00
44		100 Isobutyl alcoholx10	0.013	0.013	0.0	76	0.00
45		38 thiophene	0.440	0.415	5.7	68	0.00
46	C	39 12-di-Cl-propane	0.194	0.173	10.8	67	0.00
47	M	40 trichloroethene	0.271	0.263	3.0	75	0.00
48		41 dibromomethane	0.135	0.129	4.4	75	0.00
49		101 TAME	0.369	0.386	-4.6	77	0.00
50		42 Br-di-Cl-methane	0.305	0.288	5.6	76	0.00
51		43 Me-methacrylate	0.093	0.091	2.2	69	0.00
52		44 2-ClEt-Vi-ether10	0.028	0.023	17.9	56	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

1239

Data File : C:\MSDCHEM\1\DATA\03G4695\G4695Q01.D Vial: 3
Acq On : 4 Nov 2003 8:21 pm Operator: zou
Sample : f=1 Inst : GCMS-A
Misc : Multiplr: 1.00
MS Integration Params: Lscint.p

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 14:05:06 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

			Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
53		45	c-13-di-Cl-propene	0.307	0.304	1.0	71	0.00
54		46	t-1,3-dichloropropene	0.248	0.262	-5.6	74	0.00
55	I	47	Chlorobezene-d5	1.000	1.000	0.0	75	0.00
56		48	112-tri-Cl-Et	0.221	0.199	10.0	71	0.00
57		49	13-di-Cl-propane	0.340	0.312	8.2	71	0.00
58		50	Et methacrylate	0.255	0.266	-4.3	72	0.00
59		51	di-Br-Cl-methane	0.314	0.305	2.9	78	0.00
60	P	52	bromoform	0.185	0.185	0.0	79	0.00
61		53	1,4-dichlorobutane-2	0.374	0.344	8.0	71	0.00
62		54	MIBK	0.168	0.155	7.7	70	0.00
63	s	55	toluene-d8	1.104	1.048	5.1	72	0.00
64	M,C	56	toluene	1.354	1.213	10.4	71	0.00
65		57	2-hexanone X5	0.109	0.105	3.7	71	0.00
66		58	12-dibromoethane	0.227	0.208	8.4	71	0.00
67		59	tetra-Cl-ethene	0.373	0.395	-5.9	87	0.00
68	M,P	60	chlorobenzene	0.924	0.873	5.5	73	0.00
69		61	1112-tetra-Cl-Et	0.344	0.346	-0.6	78	0.00
70	I	62	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	74	0.00
71		63	1-chlorohexane	0.228	0.243	-6.6	87	0.00
72	C	64	Et-Bz	2.542	2.547	-0.2	76	0.00
73		65	m/p-Xylenes X2	1.966	1.971	-0.3	76	0.00
74		66	styrene	1.656	1.638	1.1	73	0.00
75		67	o-xylene	1.985	2.024	-2.0	76	0.00
76	p	68	1122-Tetra-Cl-Et	0.396	0.372	6.1	72	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\03G4695\G4695Q01.D Vial: 3
Acq On : 4 Nov 2003 8:21 pm Operator: zou
Sample : f=1 Inst : GCMS-A
Misc : Multiplr: 1.00
MS Integration Params: Lscint.p

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 14:05:06 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

			Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
77		69	123-tri-Cl-Pr	0.131	0.133	-1.5	77	0.00
78	S	70	4-Br-1-F-Bz (S3)	0.678	0.680	-0.3	77	0.00
79		71	isopropylbenzene	2.654	2.835	-6.8	81	0.00
80		72	bromobenzene	0.672	0.692	-3.0	77	0.00
81		92	t-1,4-dichloro-2-butene	0.062	0.073	-17.7	80	0.00
82		73	n-propylbenzene	0.769	0.835	-8.6	82	0.00
83		74	2-Cl-Toluene	0.652	0.678	-4.0	78	0.00
84		75	4-Cl-Toluene	0.670	0.669	0.1	76	0.00
85		76	135-tri-Me-Benzene	2.341	2.480	-5.9	80	0.00
86		77	4-iso-Pr-toluene	2.522	2.727	-8.1	83	0.00
87		78	124-tri-Me-Benzene	2.451	2.506	-2.2	77	0.00
88		79	tert-butylbenzene	2.055	2.307	-12.3	86	0.00
89		80	13-DCB	1.396	1.394	0.1	76	0.00
90		81	sec-butylbenzene	3.069	3.310	-7.9	84	0.00
91		82	14-DCB	1.461	1.418	2.9	77	0.00
92		83	Cl-benzyl	0.116	0.135	-16.4	82	0.00
93		84	12-DCB	1.278	1.272	0.5	78	0.00
94		85	n-butylbenzene	0.666	0.731	-9.8	83	0.00
95		86	12-diBr-2-Cl-Pra	0.095	0.095	0.0	74	0.00
96		87	124-tri-Cl-Bz	0.796	0.824	-3.5	76	0.00
97		88	naphthalene	1.256	1.337	-6.4	74	0.00
98		89	hx-Cl-butadiene	0.456	0.531	-16.4	95	0.00
99		90	123-Tri-Cl-Bz	0.687	0.718	-4.5	77	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

FORM-8A

Applied P & Ch Laboratory

Internal Standard Area and RT Summary for Method 524.2

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	035923
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		CCV Data File:	G4695Q01	Instrument ID:	A

Batch No: 03G4695

#	Client Sample No	Lab Sample ID	Analysis Date & Time	IS-1 Area #	IS-1 RT #	IS-2 Area #	IS-2 RT #	IS-3 Area #	IS-3 RT #
	12 Hour CCV STD		11/04/03 20:21	715647	7.64	548576	11.54	322477	13.84
	CCV Upper Limit			1431294	8.14	1097152	12.04	644954	14.34
	CCV Lower Limit			357823	7.14	274288	11.04	161238	13.34
1	03G4695-LCS-01	03G4695-LCS-01	11/04/03 20:47	685756	7.65	519448	11.54	308576	13.84
2	MW-3-4MS	03-5923-3MS	11/04/03 21:38	721481	7.64	539715	11.54	317958	13.84
3	MW-3-4MSD	03-5923-3MSD	11/04/03 22:04	741024	7.64	549434	11.54	323585	13.84
4	03G4695-MB-01	03G4695-MB-01	11/05/03 00:45	734496	7.65	540477	11.54	316574	13.84
5	EB-8-11-3-03	03-5923-1	11/05/03 01:14	728060	7.65	534664	11.54	316339	13.84
6	MW-3-3	03-5923-2	11/05/03 01:43	727769	7.65	534240	11.55	317750	13.84
7	MW-3-4	03-5923-3	11/05/03 02:09	707008	7.64	529636	11.54	313091	13.84
8	MW-3-5	03-5923-4	11/05/03 02:35	729855	7.64	542540	11.54	319284	13.85
9	TB-8-11-3-03	03-5923-5	11/05/03 04:46	707454	7.64	524135	11.54	311172	13.85
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IS-1 = FLUOROBENZENE
IS-2 = CHLOROBENZENE-D5
IS-3 = 1,4-DICHLOROBENZENE-D4

Area Upper Limit = +100% of CCV internal standard area
Area Lower Limit = - 50% of CCV internal standard area
RT Upper Limit = +0.50 minutes of CCV internal standard RT
RT Lower Limit = - 0.50 minutes of CCV internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits

A
Applied P & Ch Laboratory
11760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

VOC Analysis General Logbook

Sequence # 036461 Batch # 036461 Matrix: W Date: 10/21/13 Analyst: Eddie

Lot #: IS/Surrogate: GC15714/15715 Methanol(mark-*M*): _____ PEG (mark-*PEG*): _____ Defoaming(mark-*DF*): _____

☑ Calib. + Ini. Batch ☐ Initial Batch; ☐ Middle Batch; ☐ Final Batch. ☐ Internal Study Datafile Path: _____

Op. #	Type	Sample ID	Method	$V/X=J_1$	$V_f/V_i=J_2$	$V_{purge}/V_{inj}=J_3$	F	A-#	Datafile	Note	pH
4201	SP	64612 P01	ES24A	25/25 = 1	/ =	/ =	1		64612P01	10/21/13 9:16am	
4202	Calib	3-A003	003	/ =	/ =	/ =			3-A003	gc15731	
4203		3-002		/ =	/ =	/ =			3-002		
4204		3-0010		/ =	/ =	/ =			3-0010		
4205		3-0020		/ =	/ =	/ =			3-0020		
4206		3-0040		/ =	/ =	/ =			3-0040		
4207		3-0060		/ =	/ =	/ =			3-0060		
4208	LCV	LCV		/ =	/ =	/ =			LCV	gc15732	
4209				/ =	/ =	/ =					
4210				/ =	/ =	/ =					
4211				/ =	/ =	/ =					
4212				/ =	/ =	/ =					
4213				/ =	/ =	/ =					
4214				/ =	/ =	/ =					
4215				/ =	/ =	/ =					
4216				/ =	/ =	/ =					
4217				/ =	/ =	/ =					
4218				/ =	/ =	/ =					
4219				/ =	/ =	/ =					
4220				/ =	/ =	/ =					
4221				/ =	/ =	/ =					
4222				/ =	T =	/ =					
4223				/ =	T =	/ =					
4224				/ =	(10+2)/10 = 1.2	/ =					
4225				/ =	/ =	/ =					
4226				/ =	/ =	/ =					
4227				/ =	/ =	/ =					
4228				/ =	/ =	/ =					
4229				/ =	/ =	/ =					
4230				/ =	/ =	/ =					
4231				/ =	/ =	/ =					
4232				/ =	/ =	/ =					

Type	Op #	STD Lot #	$C_{std}(ng/\mu L)\times V_{std}(\mu L)/X(g \text{ or } mL)= T$	Op #	STD Lot #	$C_{std}(ng/\mu L)\times V_{std}(\mu L)/X(g \text{ or } mL)= T$
LCS/LCSD		GC-	× /X= ppb		GC-	× /X= ppb
MS/MSD		GC-	× /X= ppb		GC-	× /X= ppb

Footnote/Anomaly:

A

VOC-117

lied P & Ch Laboratory
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09) 590-1828 Fax: (909) 590-1498

VOC Analysis General Logbook

ce # 03J4695 Batch # 03J4695 Matrix: W Date: 11/04/03 Analyst: Zou

IS/Surrogate: GC-1576/1576 Methanol(mark-*M*): _____ PEG (mark-*PEG*): _____ Defoaming(mark-*DF*): _____

+ Ini. Batch ☒ Initial Batch; ☐ Middle Batch; ☐ Final Batch. ☐ Internal Study Datafile Path: _____

	Type	Sample ID	Method	$V/X=f_1$	$V_f/V_i=f_2$	$V_{spg}/V_{inj}=f_3$	F	A-#	Datafile	Note	pH
1	SP	G4695P01	E524A 003	25/25 = 1	/ =	/ =	1		G4695P01	11/04/03	7:30 pm
2	CCV	Q01		/ =	/ =	/ =			Q01	GC1576	
3	LCS	L01		/ =	/ =	/ =			L01		
4	MS	M01		/ =	/ =	/ =			M01	5923-03	<2
5	MSD	N01		/ =	/ =	/ =			N01	↓	↓
6	MB	K01		/ =	/ =	/ =			K01		
7	Sample	5923-01		/ =	/ =	/ =			5923-01		<2
8		02		/ =	/ =	/ =			02		
9		03		/ =	/ =	/ =			03		
10		04		/ =	/ =	/ =			04		
11		5892-02A		/ =	/ =	/ =			5892-02A		
12		03A		/ =	/ =	/ =			03A		
13		5896-01A		10.25 = 100	/ =	/ =	100		5896-01A		
14		5923-05		/ 25 = 1	/ =	/ =	1		5923-05		↓
15				/ =	/ =	/ =					
16				/ =	/ =	/ =					
17				/ =	/ =	/ =					
18				/ =	/ =	/ =					
19				/ =	/ =	/ =					
20				/ =	/ =	/ =					
21				/ =	/ =	/ =					
22				/ =	/ =	/ =					
23				/ =	/ =	/ =					
24				/ =	/ =	/ =					
25				/ =	/ =	/ =					
26				/ =	/ =	/ =					
27				/ =	/ =	/ =					
28				/ =	/ =	/ =					
29				/ =	/ =	/ =					
30				/ =	/ =	/ =					
31				/ =	/ =	/ =					
32				/ =	/ =	/ =					
33				/ =	/ =	/ =					
34				/ =	/ =	/ =					
35				/ =	/ =	/ =					
36				/ =	/ =	/ =					
37				/ =	/ =	/ =					
38				/ =	/ =	/ =					
39				/ =	/ =	/ =					
40				/ =	/ =	/ =					
41				/ =	/ =	/ =					
42				/ =	/ =	/ =					
43				/ =	/ =	/ =					
44				/ =	/ =	/ =					

Type	Op #	STD Lot #	$C_{std}(ng/\mu L)\times V_{std}(\mu L)/X(g \text{ or } mL)= T$	Op #	STD Lot #	$C_{std}(ng/\mu L)\times V_{std}(\mu L)/X(g \text{ or } mL)= T$
CS/LCSD	4715	GC-1577	200 × 2.5 /X= 20 ppb		GC-	× /X= ppb
IS/MSD	4716/4717	GC-	× /X= ppb		GC-	× /X= ppb

11-05 (10)

Footnote/Anomaly:

Level C Data Package Deliverables

Wet Chemistry

Applied P & Ch Laboratory

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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:	35923	Collected by:	JR

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

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-5923-1	EB-8-11-3-03	Water	11/03/03	11/03/03	11/03/03	03W5037	mg/L	0.01	<0.01	U
03-5923-2	MW-3-3	Water	11/03/03	11/03/03	11/03/03	03W5037	mg/L	0.01	<0.01	U
03-5923-3	MW-3-4	Water	11/03/03	11/03/03	11/03/03	03W5037	mg/L	0.01	<0.01	U
03-5923-4	MW-3-5	Water	11/03/03	11/03/03	11/03/03	03W5037	mg/L	0.01	<0.01	U
03W5037-MB-01	03W5037-MB-01	Water	11/03/03	11/03/03	11/03/03	03W5037	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:	35923	Collected by:	JR

Component Name: Perchlorate

CAS No:

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-5923-1	EB-8-11-3-03	Water	11/03/03	11/03/03	11/04/03	03W5052	μg/L	4	<4	U
03-5923-2	MW-3-3	Water	11/03/03	11/03/03	11/04/03	03W5052	μg/L	4	<4	U
03-5923-3	MW-3-4	Water	11/03/03	11/03/03	11/04/03	03W5052	μg/L	4	<4	U
03-5923-4	MW-3-5	Water	11/03/03	11/03/03	11/04/03	03W5052	μg/L	4	<4	U
03W5052-MB-01	03W5052-MB-01	Water	11/04/03	11/04/03	11/04/03	03W5052	μg/L	4	<4	U

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

Note: Q - Qualifier.

Qualifier: U - Not Detected or less than MDL

B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

FORM-3

Applied P & Ch Laboratory

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

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	35923
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W5052		
LCS Filename:	-	Date Analyzed:	110403	Time Analyzed:	
LCSD Filename:	-	Date Analyzed:	110403	Time Analyzed:	

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
PERCHLORATE	µg/L	25	0	27.8	111	80-120
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	LCSD Concentration	LCSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
PERCHLORATE	µg/L	25	28.0	112	1	20	80-120
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

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

Comments: _____

_____

FORM-3

Applied P & Ch Laboratory

Matrix Spike/Matrix Spike Duplicate Recovery for Method 314.0

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	35923
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W5052		
MS Filename:	-	Date Analyzed:	110403	Time Analyzed:	
MSD Filename:	-	Date Analyzed:	110403	Time Analyzed:	
MS Sample No:	MW-21-4	Sample Lab ID:	03-5892-5		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
PERCHLORATE	µg/L	25	3.4	29.8	106	75-125
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
PERCHLORATE	µg/L	25	29.5	104	2	20	75-125
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

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

Comments: _____

_____

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:	35923
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W5037		
LCS Filename:	-	Date Analyzed:	110303	Time Analyzed:	10:54
LCSD Filename:	-	Date Analyzed:	110303	Time Analyzed:	10:54

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
CHROMIUM (VI)	mg/L	0.25	0	0.257	103	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	0.257	103	0	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:	35923
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W5037		
MS Filename:	-	Date Analyzed:	110303	Time Analyzed:	10:54
MSD Filename:	-	Date Analyzed:	110303	Time Analyzed:	10:54
MS Sample No:	MW-3-3	Sample Lab ID:	03-5923-2		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
CHROMIUM (VI)	mg/L	0.25	0	0.226	90	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	0.220	88	2	19	78-115
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

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

Comments: _____

_____

6A

INITIAL CALIBRATION DATA

Lab Name: Applied P & Ch Lab Contract: 35923

Analysis: Chromium (VI) Calibration Date: 7/28/03

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

A=-0.001+ 0.846C

A=Absorbance

C=Concentration (mg/L)

r= 0.9999

FORM-7

Applied P & Ch Laboratory

CCV Recovery for Wet Analysis

Client Name: GEOFON, Inc. Contract No.: Lab Code: APCL

Case No: SAS No.: Service ID: 35923

Project ID: JPL Project No.: 04-4428.10

#	Component Name	Method	Batch No.	Unit	Expe-cted	Test Result	Rec. %	Dev. %	Flag	Control Limit, %	Test Date
1	Perchlorate	314.0	03W5052	µg/L	50	55.2	110	10	√	85-115	11/04/2003
	Perchlorate	314.0	03W5052	µg/L	50	57.3	115	15	√	85-115	11/04/2003
	Perchlorate	314.0	03W5052	µg/L	50	55.2	110	10	√	85-115	11/04/2003
	Perchlorate	314.0	03W5052	µg/L	50	56.8	114	14	√	85-115	11/04/2003
2	Chromium (VI)	7196	03W5037	mg/L	0.25	0.246	98	-2	√	90-110	11/03/2003
	Chromium (VI)	7196	03W5037	mg/L	0.25	0.242	97	-3	√	90-110	11/03/2003

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Chromium (VI) (7196) Worksheet

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

Lot #: Reagent Water _____ Diphenylcazide solution 7/28/03 Test Time: _____ SOP: G

Calibration	STD Lot #	$C_{std} \times V_{std} / V_f = C_i$	A_i	$RF_i = A_i / C_i$	Calibration results	Note
STD-1	W-7757	× / =0.00 mg/L	0.000		Least Square [RF]=	Cal. Code:
STD-2	W-	× / =0.05 mg/L	0.007		Average RF=	
STD-3	W-	× / 0.075 = 0.15 mg/L	0.017		C.C.= 0.9999 (≥ 0.995)	
STD-4	W-	× / =0.25 mg/L	0.107		RSD= % (≤ 15%)	
STD-5	W-	× / =0.50 mg/L	0.212		Ref. page	
STD-6	W-	× / =0.50 mg/L	0.420		A = -0.001 + 0.846C	

Analysis Type	Sample ID or Lot #	Samp. Amnt X_0 (g or mL)	Dilu./Ext $X/X_0 = f_1$	Treat. Ratio $V/X = f_2$	540 nm A	Concentration $C' = A/RF$	C (Sample) $C = f_1 f_2 C'$	Anom: Note
CCV	Lot: W-7857	Expected Conc.: × / =0.25 mg/L			0.218	0.259 mg/L	REC. %	90-110
Method Blank	Bl. Lot:		$/X_0$ =	95.0/ =	0.000	0.000 mg/L	ppm	
LCS1	Bl. Lot:		$/X_0$ =	95.0/ =	0.210	0.253 mg/L	ppm	
Sample-1	4177-37	1ml→100ml	$/X_0$ = 1	95.0/ = 2	0.290	0.689 mg/L	ppm	
MS on S-1	37	0.5ml→100ml	$/X_0$ =	95.0/ = 2	0.287	0.682 mg/L	ppm	report
MSD on S-1	4175-15	10.0g	50.0mL $/X_0$ = 5	95.0/ = 10	0.050	3.04 mg/L	ppm	
Sample 2	15	4	$/X_0$ =	95.0/ = 2	0.247	2.94 mg/L	ppm	report
Sample 3			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 4			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 5			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 6			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 7			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 8			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 9			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 10			$/X_0$ =	95.0/ =		mg/L	ppm	
Blank	Lot:		$/X_0$ =	95.0/ =		mg/L	ppm	
LCS2	Bl. Lot:		$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 11			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 12			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 13			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 14			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 15			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 16			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 17			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 18			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 19			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 20			$/X_0$ =	95.0/ =		mg/L	ppm	
MTX Dup.	dup. of 0.25mg		$/X_0$ =	95.0/ =	0.248	0.259 mg/L	ppm	

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

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

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Chromium (VI) (7196) Worksheet

Batch # 03W503 Matrix: W [Holding Time: 24 hours!!] Test Date: 11/3/03 Analyst: hm

Lot #: Reagent Water _____ Diphenylcazide solution _____ Test Time: 10:54 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 $\overline{RF}$=	
STD-3	W-	× / = mg/L			C.C.=0.9999 (≥ 0.995)	
STD-4	W-	× / = mg/L			RSD= % (≤ 15%)	
STD-5	W-	× / = mg/L			Ref. page	
STD-6	W-	× / = mg/L			A= -0.001 + 0.846C	

Analysis Type	Sample ID or Lot #	Samp. Amnt X_0 (g or mL)	Dilu./Ext $X/X_0 = f_1$	Treat. Ratio $V/X = f_2$	540 nm A	Concentration $C' = A/\overline{RF}$	C (Sample) $C = f_1 f_2 C'$	Anomaly Note
CCV	Lot: W- 7757	Expected Conc.:	×	/	= 0.25 mg/L	0.207	0.246 mg/L	REC. %	90-110 %
Method Blank	Bl. Lot:		/X_0 = 1	95.0/	=	0.000	mg/L	0.00 ppm	
LCS1	Bl. Lot: T1118		/X_0 =	95.0/	=	0.216	mg/L	0.257 ppm	
Sample-1	5922		/X_0 =	95.0/	=	0.002	mg/L	0.004 ppm	
MS on S-1	2		/X_0 =	95.0/	=	0.190	mg/L	0.226 ppm	
MSD on S-1	2		/X_0 =	95.0/	=	0.185	mg/L	0.220 ppm	
Sample 2	2		/X_0 =	95.0/	=	0.001	mg/L	0.002 ppm	
Sample 3	3		/X_0 =	95.0/	=	0.001	mg/L	0.002 ppm	
Sample 4	4		/X_0 =	95.0/	=	0.001	mg/L	0.002 ppm	
Sample 5			/X_0 =	95.0/	=		mg/L	ppm	
Sample 6			/X_0 =	95.0/	=		mg/L	ppm	
Sample 7			/X_0 =	95.0/	=		mg/L	ppm	
Sample 8			/X_0 =	95.0/	=		mg/L	ppm	
Sample 9			/X_0 =	95.0/	=		mg/L	ppm	
Sample 10			/X_0 =	95.0/	=		mg/L	ppm	
Blank	Lot:		/X_0 =	95.0/	=		mg/L	ppm	
LCS2	Bl. Lot: T1118		/X_0 = 1	95.0/	=	0.216	mg/L	0.257 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.	Dup of 9	0.25 mg/L	/X_0 =	95.0/	=	0.209	0.242 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- 7757	× / = 0.25 ppm	%	80-120 %/80-120 %
MSD	W- "	× / = ppm	%	.. ..
LCS	W- 7853	× / = ppm	%	80-120 %/80-120 %
LCSD	W- "	× / = ppm	%	.. ..

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

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

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Perchlorate (EPA 314) Batch QC Report

Batch: 03w5052 **Matrix** w **Service included** 03--5892,5885,5923,5951
Test date: 11/04/03 **System** K **Analyst:** ww and Wu
MDL: 0.66 ppb **MRL:** 4 ppb **MCT:** 6462 us/cm

Items	Perchlorate Expt.(ppb)	Results Summary								Accceptance Criteria
IPC	25	S.C us/cm	6462		Perchlor. Conc.	29.7	Perchlor.Rec %	118.8		R 80-120% PD <25%
		A	50409.75	H	2137.28	A/H	23.59	P/D %	0	
MB	0	Conc.	0		OK ?	OK				<= 1/2 MRL
ICCS	4	Conc.	3.67		Rec. %	91.75				70-125%
						A	H	A/H		
LCS	25	Conc.	27.78	Rec. %	111.12	47142.7	1997.78	23.60		80-120%
LCSD	25	Conc.	27.95		Rec. %	111.80				85-115%
CCV	50	CCV1 Conc.	55.21	Rec. %	110.42	CCV2 Conc.	57.34	Rec. %	115	85-115%
CCV	50	CCV3 Conc.	55.17	Rec. %	110.34	ECV Conc.	56.75	Rec. %	114	85-115%
MD		RPD%	0		OK ?	OK				<=15%
MS	25	uspike conc.	3.38	MS conc	29.78	MS Rec.%.	105.6			75-125%
MSD	25	uspike conc.	3.38	MSD conc.	29.54	MSD Rec.%.	104.64			75-125%

Sample ID for MS/MSD 5892-05 **Sample ID for MD**

Global QC : ☒ **Passed**
☐ **Flag:** _____
☐ **Failed: Corrective action** _____

Note:
1. **IPC**: Instrument Peerformance Check Standard at MCT.
2. **ICCS**: Initial Calibration Check.
3. **MCT**: Matrix Conductivity Threshold.
4. **PD(A/H)**:The A/H ratio prercent difference between the average A/H ratio for trhe LFB(A/H) and the A/H ratio of IPC.
5. **A/H** : Peak area/peak height.

Schedule File: C:\PeakNet\schedule\03w5052k.scn

Line	Sample	Sample Type	Level	Method	Data File	Volume	Dilution	Weight	Int. Std.
1	##03w5052k ipc 25ppb w8032	Sample		e314-011.met	w5052k ipc25ppb	1	1	1	1
2	ccv 50ppb w8082	Sample		e314-011.met	w5052k q01	1	1	1	1
3	lcs 25ppb w8087	Sample		e314-011.met	w5052k l01	1	1	1	1
4	Lcsd 25PPB W8257	Sample		e314-011.met	w5052k j01	1	1	1	1
5	ICCS 4ppb w8088	Sample		e314-011.met	w5052k iccs 4ppb	1	1	1	1
6	mb	Sample		e314-011.met	w5052k k01	1	1	1	1
7	5892-05 f=1	Sample		e314-011.met	5892-05	1	1	1	1
8	5892-01 f=1	Sample		e314-011.met	5892-01	1	1	1	1
9	5892-02 f=1	Sample		e314-011.met	5892-02	1	1	1	1
10	5892-03 f=1	Sample		e314-011.met	5892-03	1	1	1	1
11	5892-04 f=1	Sample		e314-011.met	5892-04	1	1	1	1
12	5892-06 f=1	Sample		e314-011.met	5892-06	1	1	1	1
13	ccv 50ppb w8082	Sample		e314-011.met	w5052k q02	1	1	1	1
14	ccb	Sample		e314-011.met	w5052k ccb	1	1	1	1
15	5892-05 ms 25ppb f=1	Sample		e314-011.met	w5052k m01	1	1	1	1
16	5892-05 msd 25ppb f=1	Sample		e314-011.met	w5052k n01	1	1	1	1
17	5885-21 f=1	Sample		e314-011.met	5885-21	1	1	1	1
18	5923-01 f=1	Sample		e314-011.met	5923-01	1	1	1	1
19	5923-02 f=1	Sample		e314-011.met	5923-02	1	1	1	1
20	5923-03 f=1	Sample		e314-011.met	5923-03	1	1	1	1
21	5923-04 f=1	Sample		e314-011.met	5923-04	1	1	1	1
22	ccv 50ppb w8082	Sample		e314-011.met	w5052k q03	1	1	1	1
23	ccb	Sample		e314-011.met	w5052k ccb	1	1	1	1
24	5951-01 f=1	Sample		e314-011.met	5951-01	1	1	1	1
25	5951-10 f=1	Sample		e314-011.met	5951-10	1	1	1	1
26	5951-12 f=1	Sample		e314-011.met	5951-12	1	1	1	1
27	5951-11 f=1	Sample		e314-011.met	5951-11	1	1	1	1
28	5951-05 f=1	Sample		e314-011.met	5951-05	1	1	1	1
29	5951-06 f=1	Sample		e314-011.met	5951-06	1	1	1	1
30	5951-07 f=1	Sample		e314-011.met	5951-07	1	1	1	1
31	5951-08 f=1	Sample		e314-011.met	5951-08	1	1	1	1
32	5951-09 f=1	Sample		e314-011.met	5951-09	1	1	1	1
33	ccv 50ppb w8082	Sample		e314-011.met	w5052k q04	1	1	1	1
34	ccv 50ppb w8082	Sample		e314-011.met	w5052k q05	1	1	1	1
35	ccb	Sample		e314-011.met	w5052k ccb_035.dxd	1	1	1	1
36	5951-01 f=5	Sample		e314-011.met	5951-01_036.dxd	1	5	1	1
37	5951-10 f=5	Sample		e314-011.met	5951-10_037.dxd	1	5	1	1
38	ccv 50ppb w8082	Sample		e314-011.met	w5052k q06	1	1	1	1

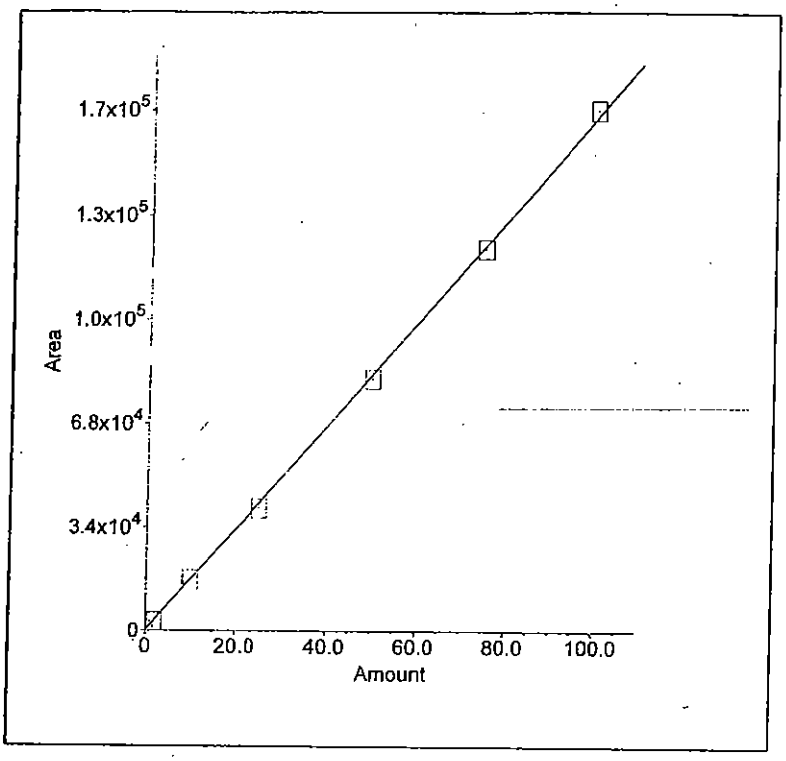
Analyst W. W

Date 11/4/03

Instrument IC-K

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

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