

### **ATTACHMENT 3: LABORATORY ANALYTICAL REPORTS (SUMMARY SHEETS)**

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This attachment contains the groundwater monitoring well results from the laboratory analytical reports prepared by Alpha Analytical Inc. of Sparks, Nevada and Columbia Analytical Services (CAS) of Simi Valley, California.



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date: 25-Jul-09

David Conner  
Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
(818) 393-2808

Suite C-205

## CASE NARRATIVE

Project: G005862/JPL Groundwater Monitoring

Work Order: BMI09072241

Cooler Temp: 4 °C

Alpha's Sample ID	Client's Sample ID	Matrix
09072241-01A	MW-19-5	Aqueous
09072241-02A	MW-19-4	Aqueous
09072241-03A	MW-19-3	Aqueous
09072241-04A	MW-19-2	Aqueous
09072241-05A	MW-19-1	Aqueous
09072241-06A	DUPE-1-3Q09	Aqueous
09072241-07A	EB-1-7/21/09	Aqueous
09072241-08A	TB-1-07/21/09	Aqueous

### Manually Integrated Analytes

Alpha's Sample ID	Test Reference	Analyte
09072241-01A	EPA Method 314.0	Perchlorate
09072241-02A	EPA Method 314.0	Perchlorate
09072241-03A	EPA Method 314.0	Perchlorate
09072241-04A	EPA Method 314.0	Perchlorate
09072241-05A	EPA Method 314.0	Perchlorate
09072241-06A	EPA Method 314.0	Perchlorate

Enclosed please find the analytical results of the samples received by Alpha Analytical, Inc. under the above mentioned Work Order/Chain-of-Custody.

Alpha Analytical, Inc. has a formal Quality Assurance/Quality Control program, which is designed to meet or exceed the EPA requirements. All relevant QC met quality assurance objectives for this project unless otherwise stated in the footnotes.

If you have any questions with regards to this report, please contact Randy Gardner, Project Manager, at (800) 283-1183.

*Roger Scholl*      *Randy Gardner*      *Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer

Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641  
Date Received : 07/22/09

Job#: G005862/JPL Groundwater Monitoring

Perchlorate by Ion Chromatography  
EPA Method 314.0

Parameter	Concentration	Reporting Limit	Date Sampled	Date Analyzed
Client ID : MW-19-5 Lab ID : BMI09072241-01A Perchlorate	2.51	1.00 µg/L	07/21/09	07/23/09
Client ID : MW-19-4 Lab ID : BMI09072241-02A Perchlorate	2.58	1.00 µg/L	07/21/09	07/23/09
Client ID : MW-19-3 Lab ID : BMI09072241-03A Perchlorate	2.62	1.00 µg/L	07/21/09	07/23/09
Client ID : MW-19-2 Lab ID : BMI09072241-04A Perchlorate	4.81	1.00 µg/L	07/21/09	07/23/09
Client ID : MW-19-1 Lab ID : BMI09072241-05A Perchlorate	7.10	1.00 µg/L	07/21/09	07/23/09
Client ID : DUPE-1-3Q09 Lab ID : BMI09072241-06A Perchlorate	4.80	1.00 µg/L	07/21/09	07/23/09
Client ID : EB-1-7/21/09 Lab ID : BMI09072241-07A Perchlorate	ND	1.00 µg/L	07/21/09	07/23/09

ND = Not Detected

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Report Date



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## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

### Tentatively Identified Compounds - Volatile Organics by GC/MS

	Parameter	Estimated Concentration	Estimated Reporting Limit	Date Received	Date Sampled	Date Analyzed
Client ID : MW-19-5 Lab ID : BMI09072241-01A	*** None Found ***	ND	2.0 µg/L	07/22/09	07/21/09	07/28/09
Client ID : MW-19-4 Lab ID : BMI09072241-02A	*** None Found ***	ND	2.0 µg/L	07/22/09	07/21/09	07/28/09
Client ID : MW-19-3 Lab ID : BMI09072241-03A	*** None Found ***	ND	2.0 µg/L	07/22/09	07/21/09	07/28/09
Client ID : MW-19-2 Lab ID : BMI09072241-04A	*** None Found ***	ND	2.0 µg/L	07/22/09	07/21/09	07/28/09
Client ID : MW-19-1 Lab ID : BMI09072241-05A	*** None Found ***	ND	2.0 µg/L	07/22/09	07/21/09	07/28/09
Client ID : DUPE-1-3Q09 Lab ID : BMI09072241-06A	*** None Found ***	ND	2.0 µg/L	07/22/09	07/21/09	07/28/09
Client ID : EB-1-7/21/09 Lab ID : BMI09072241-07A	Tertiary Butyl Alcohol (TBA)	94	10 µg/L	07/22/09	07/21/09	07/28/09
Client ID : TB-1-07/21/09 Lab ID : BMI09072241-08A	*** None Found ***	ND	2.0 µg/L	07/22/09	07/21/09	07/28/09

ND = Not Detected

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## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072241-01A  
Client I.D. Number: MW-19-5

Sampled: 07/21/09  
Received: 07/22/09  
Analyzed: 07/28/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	97	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	102	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	106	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	1.8	0.50 µg/L			

ND = Not Detected

*Roger Scholl*

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*[Signature]*

8/4/09

Report Date



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072241-02A  
Client I.D. Number: MW-19-4

Sampled: 07/21/09  
Received: 07/22/09  
Analyzed: 07/28/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	97	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	103	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	103	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

ND = Not Detected

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## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072241-03A  
Client I.D. Number: MW-19-3

Sampled: 07/21/09  
Received: 07/22/09  
Analyzed: 07/28/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	97	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	105	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	106	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

ND = Not Detected

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## ANALYTICAL REPORT

Battelle Memorial Institute  
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San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072241-04A  
Client I.D. Number: MW-19-2

Sampled: 07/21/09  
Received: 07/22/09  
Analyzed: 07/28/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	0.94	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	96	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	104	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	103	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

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8/4/09

Report Date

Page 1 of 1





# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072241-05A  
Client I.D. Number: MW-19-1

Sampled: 07/21/09  
Received: 07/22/09  
Analyzed: 07/28/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	1.0	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	96	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	106	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	105	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

ND = Not Detected

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8/4/09

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Page 1 of 1



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072241-06A  
Client I.D. Number: DUPE-1-3Q09

Sampled: 07/21/09  
Received: 07/22/09  
Analyzed: 07/28/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	1.1	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	100	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	103	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	104	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

ND = Not Detected

*Roger Scholl*

*Randy Gardner*

*Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

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*JJG*  
8/4/09

Report Date

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# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072241-07A  
Client I.D. Number: EB-1-7/21/09

Sampled: 07/21/09  
Received: 07/22/09  
Analyzed: 07/28/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	97	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	102	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	100	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

ND = Not Detected

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# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072241-08A  
Client I.D. Number: TB-1-07/21/09

Sampled: 07/21/09  
Received: 07/22/09  
Analyzed: 07/28/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethane	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	90	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	107	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	108	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

ND = Not Detected

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*PS*

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# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

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## VOC Sample Preservation Report

**Work Order:** BMI09072241

**Project:** G005862/JPL Groundwater Monitoring

---

Alpha's Sample ID	Client's Sample ID	Matrix	pH
09072241-01A	MW-19-5	Aqueous	2
09072241-02A	MW-19-4	Aqueous	2
09072241-03A	MW-19-3	Aqueous	2
09072241-04A	MW-19-2	Aqueous	2
09072241-05A	MW-19-1	Aqueous	2
09072241-06A	DUPE-1-3Q09	Aqueous	2
09072241-07A	EB-1-7/21/09	Aqueous	2
09072241-08A	TB-1-07/21/09	Aqueous	2

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**8/4/09**  
**Report Date**

*Page 1 of 1*



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:  
25-Jul-09

## QC Summary Report

Work Order:  
09072241

### Method Blank

File ID: 14	Type MBLK	Test Code: EPA Method 314.0								
Sample ID: MB-22395	Units : µg/L	Batch ID: 22395	Run ID: IC_3_090723A	Analysis Date: 07/23/2009 13:27						
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	ND		1							

### Laboratory Fortified Blank

File ID: 15	Type LFB	Test Code: EPA Method 314.0								
Sample ID: LFB-22395	Units : µg/L	Batch ID: 22395	Run ID: IC_3_090723A	Analysis Date: 07/23/2009 13:45						
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	23.1	2	25		92	85	115			

### Sample Matrix Spike

File ID: 25	Type LFM	Test Code: EPA Method 314.0								
Sample ID: 09072241-02ALFM	Units : µg/L	Batch ID: 22395	Run ID: IC_3_090723A	Analysis Date: 07/23/2009 16:49						
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	26	2	25	2.579	94	80	120			

### Sample Matrix Spike Duplicate

File ID: 26	Type LFMD	Test Code: EPA Method 314.0								
Sample ID: 09072241-02ALFMD	Units : µg/L	Batch ID: 22395	Run ID: IC_3_090723A	Analysis Date: 07/23/2009 17:08						
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	25.8	2	25	2.579	93	80	120	25.97	0.5(15)	

### Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



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Date:  
04-Aug-09

## QC Summary Report

Work Order:  
09072241

### Method Blank

Type **MBLK**

Test Code: \_\_\_\_\_

File ID: 09072805.D

Batch ID: **MS15W0728M**

Analysis Date: **07/28/2009 11:59**

Sample ID: **MBLK MS15W0728M**

Units : **µg/L**

Run ID: **MSD\_15\_090728A**

Prep Date: **07/28/2009**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	ND	0.5								
Chloromethane	ND	1								
Vinyl chloride	ND	0.5								
Chloroethane	ND	0.5								
Bromomethane	ND	1								
Trichlorofluoromethane	ND	0.5								
1,1-Dichloroethene	ND	0.5								
Dichloromethane	ND	1								
Freon-113	ND	0.5								
trans-1,2-Dichloroethene	ND	0.5								
Methyl tert-butyl ether (MTBE)	ND	0.5								
1,1-Dichloroethane	ND	0.5								
2-Butanone (MEK)	ND	10								
cis-1,2-Dichloroethene	ND	0.5								
Bromochloromethane	ND	0.5								
Chloroform	ND	0.5								
2,2-Dichloropropane	ND	0.5								
1,2-Dichloroethane	ND	0.5								
1,1,1-Trichloroethane	ND	0.5								
1,1-Dichloropropene	ND	0.5								
Carbon tetrachloride	ND	0.5								
Benzene	ND	0.5								
Dibromomethane	ND	0.5								
1,2-Dichloropropane	ND	0.5								
Trichloroethene	ND	0.5								
Bromodichloromethane	ND	0.5								
4-Methyl-2-pentanone (MIBK)	ND	2.5								
cis-1,3-Dichloropropene	ND	0.5								
trans-1,3-Dichloropropene	ND	0.5								
1,1,2-Trichloroethane	ND	0.5								
Toluene	ND	0.5								
1,3-Dichloropropane	ND	0.5								
Dibromochloromethane	ND	0.5								
1,2-Dibromoethane (EDB)	ND	1								
Tetrachloroethene	ND	0.5								
1,1,1,2-Tetrachloroethane	ND	0.5								
Chlorobenzene	ND	0.5								
Ethylbenzene	ND	0.5								
m,p-Xylene	ND	0.5								
Bromoform	ND	0.5								
Styrene	ND	0.5								
o-Xylene	ND	0.5								
1,1,2,2-Tetrachloroethane	ND	0.5								
1,2,3-Trichloropropane	ND	1								
Isopropylbenzene	ND	0.5								
Bromobenzene	ND	0.5								
n-Propylbenzene	ND	0.5								
4-Chlorotoluene	ND	0.5								
2-Chlorotoluene	ND	0.5								
1,3,5-Trimethylbenzene	ND	0.5								
tert-Butylbenzene	ND	0.5								
1,2,4-Trimethylbenzene	ND	0.5								
sec-Butylbenzene	ND	0.5								
1,3-Dichlorobenzene	ND	0.5								
1,4-Dichlorobenzene	ND	0.5								
4-Isopropyltoluene	ND	0.5								
1,2-Dichlorobenzene	ND	0.5								
n-Butylbenzene	ND	0.5								
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5								
1,2,4-Trichlorobenzene	ND	1								
Naphthalene	ND	1								
Hexachlorobutadiene	ND	1								
1,2,3-Trichlorobenzene	ND	1								
Surr: 1,2-Dichloroethane-d4	9.54		10		95	70	130			
Surr: Toluene-d8	10.1		10		101	70	130			



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Date:  
04-Aug-09

## QC Summary Report

Work Order:  
09072241

Surr: 4-Bromofluorobenzene 10.1 10 101 70 130

### Laboratory Control Spike

Type LCS

Test Code:

File ID: 09072802.D

Batch ID: MS15W0728M

Analysis Date: 07/28/2009 10:52

Sample ID: LCS MS15W0728M

Units: µg/L

Run ID: MSD\_15\_090728A

Prep Date: 07/28/2009

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	9.36	1	10		94	70	130			
Chloromethane	9.92	2	10		99	70	130			
Vinyl chloride	9.4	1	10		94	70	130			
Chloroethane	9.38	1	10		94	70	130			
Bromomethane	8.52	2	10		85	70	130			
Trichlorofluoromethane	9.88	1	10		99	70	130			
1,1-Dichloroethene	10.4	1	10		104	70	130			
Dichloromethane	9.45	2	10		95	70	130			
trans-1,2-Dichloroethene	11.1	1	10		111	70	130			
Methyl tert-butyl ether (MTBE)	10.1	0.5	10		101	70	130			
1,1-Dichloroethane	10.9	1	10		109	70	130			
cis-1,2-Dichloroethene	10.9	1	10		109	70	130			
Bromochloromethane	10.1	1	10		101	70	130			
Chloroform	10.5	1	10		105	70	130			
2,2-Dichloropropane	11.8	1	10		118	70	130			
1,2-Dichloroethane	9.79	1	10		98	70	130			
1,1,1-Trichloroethane	11.2	1	10		112	70	130			
1,1-Dichloropropene	11.4	1	10		114	70	130			
Carbon tetrachloride	10.8	1	10		108	70	130			
Benzene	10.7	0.5	10		107	70	130			
Dibromomethane	9.52	1	10		95	70	130			
1,2-Dichloropropane	10.9	1	10		109	70	130			
Trichloroethene	10.3	1	10		103	70	130			
Bromodichloromethane	9.48	1	10		95	70	130			
cis-1,3-Dichloropropene	9.6	1	10		96	70	130			
trans-1,3-Dichloropropene	9.02	1	10		90	70	130			
1,1,2-Trichloroethane	9.55	1	10		96	70	130			
Toluene	9.98	0.5	10		99.8	70	130			
1,3-Dichloropropane	9.98	1	10		99.8	70	130			
Dibromochloromethane	8.82	1	10		88	70	130			
1,2-Dibromoethane (EDB)	18.5	2	20		93	70	130			
Teträchloroethene	10	1	10		100	70	130			
1,1,1,2-Tetrachloroethane	9.73	1	10		97	70	130			
Chlorobenzene	10	1	10		100	70	130			
Ethylbenzene	10.5	0.5	10		105	70	130			
m,p-Xylene	10.8	0.5	10		108	70	130			
Bromoform	7.46	1	10		75	70	130			
Styrene	7.05	1	10		71	70	130			
o-Xylene	10.7	0.5	10		107	70	130			
1,1,2,2-Tetrachloroethane	9.28	1	10		93	70	130			
1,2,3-Trichloropropane	18.7	2	20		93	70	130			
Isopropylbenzene	11	1	10		110	70	130			
Bromobenzene	9.59	1	10		96	70	130			
n-Propylbenzene	11.2	1	10		112	70	130			
4-Chlorotoluene	10.7	1	10		107	70	130			
2-Chlorotoluene	10.7	1	10		107	70	130			
1,3,5-Trimethylbenzene	10.6	1	10		106	70	130			
tert-Butylbenzene	10.5	1	10		105	70	130			
1,2,4-Trimethylbenzene	10.5	1	10		105	70	130			
sec-Butylbenzene	11	1	10		110	70	130			
1,3-Dichlorobenzene	10	1	10		100	70	130			
1,4-Dichlorobenzene	9.54	1	10		95	70	130			
4-Isopropyltoluene	10.8	1	10		108	70	130			
1,2-Dichlorobenzene	9.61	1	10		96	70	130			
n-Butylbenzene	12	1	10		120	70	130			
1,2-Dibromo-3-chloropropane (DBCP)	46.2	3	50		92	70	130			
1,2,4-Trichlorobenzene	9	2	10		90	70	130			
Naphthalene	8.75	2	10		88	70	130			
Hexachlorobutadiene	19	2	20		95	70	130			
1,2,3-Trichlorobenzene	8.57	2	10		86	70	130			
Surr: 1,2-Dichloroethane-d4	9.6		10		96	70	130			
Surr: Toluene-d8	10.1		10		101	70	130			
Surr: 4-Bromofluorobenzene	10.1		10		101	70	130			





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Date:  
04-Aug-09

## QC Summary Report

Work Order:  
09072241

### Sample Matrix Spike

File ID: 09072817.D

Type MS

Test Code:

Batch ID: MS15W0728M

Analysis Date: 07/28/2009 16:44

Sample ID: 09072241-02AMS

Units : µg/L

Run ID: MSD\_15\_090728A

Prep Date: 07/28/2009

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	41.1	2.5	50	0	82	13	167			
Chloromethane	48.6	10	50	0	97	28	145			
Vinyl chloride	60.2	2.5	50	0	120	43	134			
Chloroethane	42.1	2.5	50	0	84	39	154			
Bromomethane	38.9	10	50	0	78	19	176			
Trichlorofluoromethane	49	2.5	50	0	98	34	160			
1,1-Dichloroethene	44.9	2.5	50	0	90	60	130			
Dichloromethane	45.1	10	50	0	90	68	130			
trans-1,2-Dichloroethene	48.1	2.5	50	0	96	63	130			
Methyl tert-butyl ether (MTBE)	51.3	1.3	50	0	103	56	141			
1,1-Dichloroethane	49.7	2.5	50	0	99	61	130			
cis-1,2-Dichloroethene	48	2.5	50	0	96	70	130			
Bromochloromethane	48.4	2.5	50	0	97	70	130			
Chloroform	49.5	2.5	50	0	99	67	130			
2,2-Dichloropropane	44.9	2.5	50	0	90	30	152			
1,2-Dichloroethane	48.2	2.5	50	0	96	60	135			
1,1,1-Trichloroethane	47.9	2.5	50	0	96	59	137			
1,1-Dichloropropene	49.2	2.5	50	0	98	63	130			
Carbon tetrachloride	45	2.5	50	0	90	50	147			
Benzene	49.3	1.3	50	0	99	67	130			
Dibromomethane	48.5	2.5	50	0	97	69	133			
1,2-Dichloropropane	52.1	2.5	50	0	104	69	130			
Trichloroethene	45.5	2.5	50	0	91	69	130			
Bromodichloromethane	44.6	2.5	50	0	89	66	134			
cis-1,3-Dichloropropene	43	2.5	50	0	86	63	130			
trans-1,3-Dichloropropene	43.7	2.5	50	0	87	66	131			
1,1,2-Trichloroethane	50.1	2.5	50	0	100	68	130			
Toluene	44.6	1.3	50	0	89	66	130			
1,3-Dichloropropane	50.3	2.5	50	0	101	70	130			
Dibromochloromethane	41	2.5	50	0	82	70	130			
1,2-Dibromoethane (EDB)	91.5	10	100	0	92	70	130			
Tetrachloroethene	41.8	2.5	50	0	84	61	134			
1,1,1,2-Tetrachloroethane	45	2.5	50	0	90	70	130			
Chlorobenzene	45.2	2.5	50	0	90	70	130			
Ethylbenzene	45.9	1.3	50	0	92	68	130			
m,p-Xylene	46.8	1.3	50	0	94	64	130			
Bromoform	36.3	2.5	50	0	73	64	138			
Styrene	32.7	2.5	50	0	65	69	130			M2
o-Xylene	48.6	1.3	50	0	97	70	130			
1,1,2,2-Tetrachloroethane	50.6	2.5	50	0	101	65	131			
1,2,3-Trichloropropane	99.6	10	100	0	99.6	70	130			
Isopropylbenzene	46.8	2.5	50	0	94	64	138			
Bromobenzene	44.1	2.5	50	0	88	70	130			
n-Propylbenzene	46.7	2.5	50	0	93	66	132			
4-Chlorotoluene	46.2	2.5	50	0	92	70	130			
2-Chlorotoluene	46	2.5	50	0	92	70	130			
1,3,5-Trimethylbenzene	46	2.5	50	0	92	66	136			
tert-Butylbenzene	44.7	2.5	50	0	89	65	137			
1,2,4-Trimethylbenzene	46.2	2.5	50	0	92	65	137			
sec-Butylbenzene	45.8	2.5	50	0	92	66	134			
1,3-Dichlorobenzene	44.7	2.5	50	0	89	70	130			
1,4-Dichlorobenzene	43	2.5	50	0	86	70	130			
4-Isopropyltoluene	45.5	2.5	50	0	91	66	137			
1,2-Dichlorobenzene	44.3	2.5	50	0	89	70	130			
n-Butylbenzene	49.7	2.5	50	0	99	60	142			
1,2-Dibromo-3-chloropropane (DBCP)	229	15	250	0	92	67	130			
1,2,4-Trichlorobenzene	38.6	10	50	0	77	61	137			
Naphthalene	39.6	10	50	0	79	40	167			
Hexachlorobutadiene	78.4	10	100	0	78	61	130			
1,2,3-Trichlorobenzene	38	10	50	0	76	51	144			
Surr: 1,2-Dichloroethane-d4	48.6		50		97	70	130			
Surr: Toluene-d8	49.3		50		99	70	130			
Surr: 4-Bromofluorobenzene	49.7		50		99	70	130			



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Date:  
04-Aug-09

## QC Summary Report

Work Order:  
09072241

### Sample Matrix Spike Duplicate

Type **MSD**

Test Code: \_\_\_\_\_

File ID: **09072818.D**

Batch ID: **MS15W0728M**

Analysis Date: **07/28/2009 17:07**

Sample ID: **09072241-02AMSD**

Units : **µg/L**

Run ID: **MSD\_15\_090728A**

Prep Date: **07/28/2009**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	43.7	2.5	50	0	87	13	167	41.13	6.0(20)	
Chloromethane	52.6	10	50	0	105	28	145	48.61	7.9(20)	
Vinyl chloride	64.4	2.5	50	0	129	43	134	60.24	6.7(20)	
Chloroethane	47.7	2.5	50	0	95	39	154	42.05	12.7(20)	
Bromomethane	45.3	10	50	0	91	19	176	38.89	15.3(20)	
Trichlorofluoromethane	50.7	2.5	50	0	101	34	160	48.97	3.5(20)	
1,1-Dichloroethene	48	2.5	50	0	96	60	130	44.85	6.8(20)	
Dichloromethane	47.4	10	50	0	95	68	130	45.05	5.1(20)	
trans-1,2-Dichloroethene	50.2	2.5	50	0	100	63	130	48.09	4.3(20)	
Methyl tert-butyl ether (MTBE)	52.4	1.3	50	0	105	56	141	51.29	2.1(20)	
1,1-Dichloroethane	52.3	2.5	50	0	105	61	130	49.73	5.0(20)	
cis-1,2-Dichloroethene	50	2.5	50	0	100	70	130	48.04	4.0(20)	
Bromochloromethane	49.3	2.5	50	0	99	70	130	48.44	1.7(20)	
Chloroform	51.4	2.5	50	0	103	67	130	49.52	3.7(20)	
2,2-Dichloropropane	47.7	2.5	50	0	95	30	152	44.89	6.1(20)	
1,2-Dichloroethane	48.9	2.5	50	0	98	60	135	48.2	1.3(20)	
1,1,1-Trichloroethane	50.6	2.5	50	0	101	59	137	47.86	5.5(20)	
1,1-Dichloropropene	51.5	2.5	50	0	103	63	130	49.17	4.6(20)	
Carbon tetrachloride	48.9	2.5	50	0	98	50	147	45	8.4(20)	
Benzene	51.1	1.3	50	0	102	67	130	49.31	3.5(20)	
Dibromomethane	48.8	2.5	50	0	98	69	133	48.5	0.6(20)	
1,2-Dichloropropane	54.9	2.5	50	0	110	69	130	52.13	5.2(20)	
Trichloroethene	47.8	2.5	50	0	96	69	130	45.48	4.9(20)	
Bromodichloromethane	46.1	2.5	50	0	92	66	134	44.58	3.3(20)	
cis-1,3-Dichloropropene	44.8	2.5	50	0	90	63	130	43.04	3.9(20)	
trans-1,3-Dichloropropene	44.7	2.5	50	0	89	66	131	43.7	2.2(20)	
1,1,2-Trichloroethane	50.8	2.5	50	0	102	68	130	50.1	1.4(20)	
Toluene	47	1.3	50	0	94	66	130	44.62	5.2(20)	
1,3-Dichloropropane	51.8	2.5	50	0	104	70	130	50.3	2.9(20)	
Dibromochloromethane	43.8	2.5	50	0	88	70	130	40.98	6.7(20)	
1,2-Dibromoethane (EDB)	94.3	10	100	0	94	70	130	91.53	3.0(20)	
Tetrachloroethene	45.5	2.5	50	0	91	61	134	41.82	8.5(20)	
1,1,1,2-Tetrachloroethane	47	2.5	50	0	94	70	130	44.97	4.5(20)	
Chlorobenzene	47.2	2.5	50	0	94	70	130	45.21	4.4(20)	
Ethylbenzene	48.6	1.3	50	0	97	68	130	45.91	5.8(20)	
m,p-Xylene	50.2	1.3	50	0	100	64	130	46.83	7.0(20)	
Bromoform	38.9	2.5	50	0	78	64	138	36.29	7.1(20)	
Styrene	34.2	2.5	50	0	68	69	130	32.66	4.7(20)	M2
o-Xylene	50.6	1.3	50	0	101	70	130	48.62	4.0(20)	
1,1,2,2-Tetrachloroethane	50.1	2.5	50	0	100	65	131	50.59	1.1(20)	
1,2,3-Trichloropropane	101	10	100	0	101	70	130	99.57	1.8(20)	
Isopropylbenzene	50.8	2.5	50	0	102	64	138	46.77	8.3(20)	
Bromobenzene	47.3	2.5	50	0	95	70	130	44.12	6.9(20)	
n-Propylbenzene	51.1	2.5	50	0	102	66	132	46.65	9.2(20)	
4-Chlorotoluene	51.3	2.5	50	0	103	70	130	46.18	10.6(20)	
2-Chlorotoluene	50	2.5	50	0	99.9	70	130	45.95	8.4(20)	
1,3,5-Trimethylbenzene	49.8	2.5	50	0	99.5	66	136	45.99	7.9(20)	
tert-Butylbenzene	48.5	2.5	50	0	97	65	137	44.72	8.1(20)	
1,2,4-Trimethylbenzene	50.3	2.5	50	0	101	65	137	46.2	8.4(20)	
sec-Butylbenzene	50.6	2.5	50	0	101	66	134	45.84	9.8(20)	
1,3-Dichlorobenzene	48.8	2.5	50	0	98	70	130	44.7	8.8(20)	
1,4-Dichlorobenzene	46.6	2.5	50	0	93	70	130	43.02	7.9(20)	
4-Isopropyltoluene	50.1	2.5	50	0	100	66	137	45.46	9.6(20)	
1,2-Dichlorobenzene	47.7	2.5	50	0	95	70	130	44.31	7.3(20)	
n-Butylbenzene	54.6	2.5	50	0	109	60	142	49.71	9.4(20)	
1,2-Dibromo-3-chloropropane (DBCP)	240	15	250	0	96	67	130	229.4	4.6(20)	
1,2,4-Trichlorobenzene	41.8	10	50	0	84	61	137	38.63	7.8(20)	
Naphthalene	41.8	10	50	0	84	40	167	39.61	5.4(20)	
Hexachlorobutadiene	88.8	10	100	0	89	61	130	78.4	12.4(20)	
1,2,3-Trichlorobenzene	42.2	10	50	0	84	51	144	37.98	10.5(20)	
Surr: 1,2-Dichloroethane-d4	47.3		50		95	70	130			
Surr: Toluene-d8	49.8		50		99.6	70	130			
Surr: 4-Bromofluorobenzene	50.3		50		101	70	130			



# *Alpha Analytical, Inc.*

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

**Date:**  
04-Aug-09

## QC Summary Report

**Work Order:**  
09072241

**Comments:**

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Alpha uses descriptive data qualifier flags, which could be replaced with either a DOD Q or J flag.

M2 = Matrix spike recovery was low, the method control sample recovery was acceptable.

Billing Information :

**CHAIN-OF-CUSTODY RECORD**

**Alpha Analytical, Inc.**  
 255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778  
 TEL: (775) 355-1044 FAX: (775) 355-0406

**CA**  
 WorkOrder : BMIS09072241  
 Report Due By : 5:00 PM On : 05-Aug-09

Client: Battelle Memorial Institute  
 3990 Old Town Ave  
 Suite C-205  
 San Diego, CA 92110  
 PO : 218013

Report Attention: David Conner (818) 393-2808 x connerd@battelle.org  
 Betsy Cutie (614) 424-4899 x cutiee@battelle.org  
 Shane Walton (614) 424-4117 x waltonss@battelle.org

Client's COC #: 25747

Job : G005862/JPL Groundwater Monitoring

QC Level : DS4 = DOD QC Required : Final Rpt. MBLK, InitCal/ConCal data, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Collection Matrix Date	No. of Bottles		TAT	Requested Tests			Sample Remarks
			Alpha	Sub		314_W	VOC_TIC_W	VOC_W	
BMIO9072241-01A	NW-19-5	AQ 07/21/09 08:08	4	0	10	Perchlorate	VOC by 524 Criteria	VOC by 524 Criteria	
BMIO9072241-02A	NW-19-4	AQ 07/21/09 08:28	4	0	10	Perchlorate	VOC by 524 Criteria	VOC by 524 Criteria	LEVEL IV QC
BMIO9072241-03A	NW-19-3	AQ 07/21/09 08:50	4	0	10	Perchlorate	VOC by 524 Criteria	VOC by 524 Criteria	
BMIO9072241-04A	NW-19-2	AQ 07/21/09 09:17	4	0	10	Perchlorate	VOC by 524 Criteria	VOC by 524 Criteria	
BMIO9072241-05A	NW-19-1	AQ 07/21/09 09:39	4	0	10	Perchlorate	VOC by 524 Criteria	VOC by 524 Criteria	
BMIO9072241-06A	DUPE-1-3Q09	AQ 07/21/09 00:00	4	0	10	Perchlorate	VOC by 524 Criteria	VOC by 524 Criteria	
BMIO9072241-07A	EB-1-7/21/09	AQ 07/21/09 09:31	4	0	10	Perchlorate	VOC by 524 Criteria	VOC by 524 Criteria	
BMIO9072241-08A	TB-1-07/21/09	AQ 07/21/09 00:00	1	0	10		VOC by 524 Criteria	VOC by 524 Criteria	Reno Trip Blank 3/16/09

Comments: No security seals. Frozen ice. Samples should be used as the control spike sample if possible (I.E. MS/MSD). Trip Blank received, added to end of COC and analyze for VOC's per Marco. .

Logged in by: *Patricia Edwards* Signature *Patricia Edwards* Print Name Patricia Edwards Company Alpha Analytical Inc. Date/Time 7/21/09 11:37

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report. Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) W(SWaste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

**Billing Information:**

Name DAVID TORRES / BATELLE  
 Address 505 KING AVE  
 City, State, Zip COLUMBIAS, OH 43201  
 Phone Number \_\_\_\_\_ Fax \_\_\_\_\_



**Alpha Analytical, Inc.**  
 255 Glendale Avenue, Suite 21  
 Sparks, Nevada 89431-5778  
 Phone (775) 355-1044  
 Fax (775) 355-0406


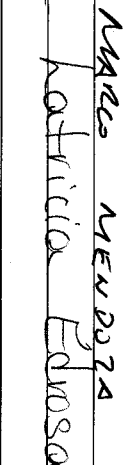
**Samples Collected From Which State?**  
 AZ \_\_\_\_\_ CA  NV \_\_\_\_\_ WA \_\_\_\_\_  
 ID \_\_\_\_\_ OR \_\_\_\_\_ OTHER \_\_\_\_\_  
 Page # 1 of 1

Analyses Required

Client Name BATELLE / DAVID CONNER Job # G005862  
 Address 3950 OLD TOWN AVE., C-205 P.O. # 218013  
 City, State, Zip SAV DIEDO, CA 92110 Email Address \_\_\_\_\_  
 Phone # (619) 726-7311 Fax # \_\_\_\_\_

Time Sampled	Date Sampled	Matrix* See Key Below	Sampled by	Lab ID Number (Use Only)	Office (Use Only)	Report Attention	Sample Description	TAT	Field Filtered	Total and type of containers ** See below	Vol	Other	EDD / EDF? YES ___ NO ___	REMARKS
808	7/2/59	AQ	BM	109072241-01			MW-19-5	Normal		VP / 4	X	X		LEVEL TD OK
829							MW-19-4				X	X		
850							MW-19-3				X	X		
917							MW-19-2				X	X		
939							MW-19-1				X	X		
							DUP-1-3009				X	X		DUPPLICATE
							EB-1-7/2/59				X	X		EQUIP. BLANK
							TRIP BLANK				X	X		

**ADDITIONAL INSTRUCTIONS:**

Signature	Print Name	Company	Date	Time
	Patricia Edwards	INSIGHT EEL	7/21/59	12:30
	Mares	Alpha	7/22/59	11:37
Received by _____				
Relinquished by _____				
Received by _____				
Relinquished by _____				
Received by _____				
Relinquished by _____				

\*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other AR - Air \*\* L-Liter V-Voa S-Soil Jar O-Orho T-Tedlar B-Brass P-Plastic OT-Other  
 NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report.



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date: 03-Aug-09

David Conner  
Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
(818) 393-2808

Suite C-205

## CASE NARRATIVE

Project: G005862/JPL Groundwater Monitoring

Work Order: BMI09072343

Cooler Temp: 4 °C

Alpha's Sample ID	Client's Sample ID	Matrix
09072343-01A	MW-14-5	Aqueous
09072343-02A	MW-14-4	Aqueous
09072343-03A	MW-14-3	Aqueous
09072343-04A	MW-14-2	Aqueous
09072343-05A	MW-14-1	Aqueous
09072343-06A	DUPE-2-3Q09	Aqueous
09072343-07A	TB-2-7/22/09	Aqueous
09072343-08A	EB-2-7/22/09	Aqueous

### Manually Integrated Analytes

Alpha's Sample ID	Test Reference	Analyte
09072343-02A	EPA Method 314.0	Perchlorate
09072343-03A	EPA Method 314.0	Perchlorate
09072343-04A	EPA Method 314.0	Perchlorate
09072343-05A	EPA Method 314.0	Perchlorate
09072343-06A	EPA Method 314.0	Perchlorate

Enclosed please find the analytical results of the samples received by Alpha Analytical, Inc. under the above mentioned Work Order/Chain-of-Custody.

Alpha Analytical, Inc. has a formal Quality Assurance/Quality Control program, which is designed to meet or exceed the EPA requirements. All relevant QC met quality assurance objectives for this project unless otherwise stated in the footnotes.

If you have any questions with regards to this report, please contact Randy Gardner, Project Manager, at (800) 283-1183.

*Roger Scholl*      *Randy Gardner*      *Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641  
Date Received : 07/23/09

Job#: G005862/JPL Groundwater Monitoring

Perchlorate by Ion Chromatography  
EPA Method 314.0

Parameter	Concentration	Reporting Limit	Date Sampled	Date Analyzed
Client ID : MW-14-5 Lab ID : BMI09072343-01A Perchlorate	ND	1.00 µg/L	07/22/09	07/23/09
Client ID : MW-14-4 Lab ID : BMI09072343-02A Perchlorate	3.02	1.00 µg/L	07/22/09	07/23/09
Client ID : MW-14-3 Lab ID : BMI09072343-03A Perchlorate	4.77	1.00 µg/L	07/22/09	07/23/09
Client ID : MW-14-2 Lab ID : BMI09072343-04A Perchlorate	3.28	1.00 µg/L	07/22/09	07/23/09
Client ID : MW-14-1 Lab ID : BMI09072343-05A Perchlorate	2.58	1.00 µg/L	07/22/09	07/23/09
Client ID : DUPE-2-3Q09 Lab ID : BMI09072343-06A Perchlorate	2.48	1.00 µg/L	07/22/09	07/23/09
Client ID : EB-2-7/22/09 Lab ID : BMI09072343-08A Perchlorate	ND	1.00 µg/L	07/22/09	07/23/09

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

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8/5/09

Report Date



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641  
Date Received : 07/23/09

Job#: G005862/JPL Groundwater Monitoring

Metals by ICPMS  
EPA Method 200.8

Parameter	Concentration	Reporting Limit	Date Sampled	Date Analyzed
Client ID : MW-14-3 Lab ID : BMI09072343-03A Chromium (Cr)	ND	0.0050 mg/L	07/22/09	08/07/09
Client ID : MW-14-2 Lab ID : BMI09072343-04A Chromium (Cr)	ND	0.0050 mg/L	07/22/09	08/07/09
Client ID : MW-14-1 Lab ID : BMI09072343-05A Chromium (Cr)	ND	0.0050 mg/L	07/22/09	08/07/09
Client ID : DUPE-2-3Q09 Lab ID : BMI09072343-06A Chromium (Cr)	ND	0.0050 mg/L	07/22/09	08/07/09
Client ID : EB-2-7/22/09 Lab ID : BMI09072343-08A Chromium (Cr)	ND	0.0050 mg/L	07/22/09	08/07/09

ND = Not Detected

*Roger Scholl*      *Randy Gardner*      *Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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8/10/09

Report Date





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## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

### Tentatively Identified Compounds - Volatile Organics by GC/MS

	Parameter	Estimated Concentration	Estimated Reporting Limit	Date Received	Date Sampled	Date Analyzed
Client ID : <b>MW-14-5</b> Lab ID : BMI09072343-01A	*** None Found ***	ND	2.0 µg/L	07/23/09	07/22/09	07/29/09
Client ID : <b>MW-14-4</b> Lab ID : BMI09072343-02A	*** None Found ***	ND	2.0 µg/L	07/23/09	07/22/09	07/29/09
Client ID : <b>MW-14-3</b> Lab ID : BMI09072343-03A	*** None Found ***	ND	2.0 µg/L	07/23/09	07/22/09	07/29/09
Client ID : <b>MW-14-2</b> Lab ID : BMI09072343-04A	*** None Found ***	ND	2.0 µg/L	07/23/09	07/22/09	07/29/09
Client ID : <b>MW-14-1</b> Lab ID : BMI09072343-05A	*** None Found ***	ND	2.0 µg/L	07/23/09	07/22/09	07/29/09
Client ID : <b>DUPE-2-3Q09</b> Lab ID : BMI09072343-06A	*** None Found ***	ND	2.0 µg/L	07/23/09	07/22/09	07/29/09
Client ID : <b>TB-2-7/22/09</b> Lab ID : BMI09072343-07A	*** None Found ***	ND	2.0 µg/L	07/23/09	07/22/09	07/29/09
Client ID : <b>EB-2-7/22/09</b> Lab ID : BMI09072343-08A	2-Methyl-1-propene	2.0	2.0 µg/L	07/23/09	07/22/09	07/29/09

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

8/5/09

Report Date

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Page 1 of 1



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
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## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072343-01A  
Client I.D. Number: MW-14-5

Sampled: 07/22/09  
Received: 07/23/09  
Analyzed: 07/29/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethane	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	92	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	107	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	103	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

  
8/5/09

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Report Date

Page 1 of 1



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072343-02A  
Client I.D. Number: MW-14-4

Sampled: 07/22/09  
Received: 07/23/09  
Analyzed: 07/29/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	90	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	108	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	103	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

8/5/09

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Report Date

Page 1 of 1



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072343-03A  
Client I.D. Number: MW-14-3

Sampled: 07/22/09  
Received: 07/23/09  
Analyzed: 07/29/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	0.52	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	1.5	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	95	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	105	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	105	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	0.59	0.50 µg/L			

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

8/5/09

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Report Date

Page 1 of 1



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072343-04A  
Client I.D. Number: MW-14-2

Sampled: 07/22/09  
Received: 07/23/09  
Analyzed: 07/29/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	0.56	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	0.56	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	9.4	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	95	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	107	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	105	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	0.60	0.50 µg/L			

ND = Not Detected

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# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072343-05A  
Client I.D. Number: MW-14-1

Sampled: 07/22/09  
Received: 07/23/09  
Analyzed: 07/29/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethane	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethane	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethane	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	2.1	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	94	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	105	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	105	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

ND = Not Detected

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# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
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## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Job#: G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI09072343-06A  
Client I.D. Number: DUPE-2-3Q09

Sampled: 07/22/09  
Received: 07/23/09  
Analyzed: 07/29/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethane	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	2.2	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	95	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	105	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	104	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

ND = Not Detected

*Roger Scholl*

*Randy Gardner*

*Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072343-07A  
Client I.D. Number: TB-2-7/22/09

Sampled: 07/22/09  
Received: 07/23/09  
Analyzed: 07/29/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	88	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	108	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	104	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

ND = Not Detected

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## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072343-08A  
Client I.D. Number: EB-2-7/22/09

Sampled: 07/22/09  
Received: 07/23/09  
Analyzed: 07/29/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	87	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	110	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	103	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

ND = Not Detected

*Roger Scholl*

*Randy Gardner*

*Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

*PS*  
8/5/09

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

Report Date

Page 1 of 1



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## VOC Sample Preservation Report

Work Order: BMI09072343

Project: G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	pH
09072343-01A	MW-14-5	Aqueous	2
09072343-02A	MW-14-4	Aqueous	2
09072343-03A	MW-14-3	Aqueous	2
09072343-04A	MW-14-2	Aqueous	2
09072343-05A	MW-14-1	Aqueous	2
09072343-06A	DUPE-2-3Q09	Aqueous	2
09072343-07A	TB-2-7/22/09	Aqueous	2
09072343-08A	EB-2-7/22/09	Aqueous	2

8/5/09

Report Date

Page 1 of 1



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:  
03-Aug-09

## QC Summary Report

Work Order:  
09072343

### Method Blank

File ID: 14	Type MBLK	Test Code: EPA Method 314.0	Batch ID: 22395	Analysis Date: 07/23/2009 13:27
Sample ID: MB-22395	Units : µg/L	Run ID: IC_3_090723A	Prep Date: 07/23/2009	
Analyte	Result	PQL	SpkVal	SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual
Perchlorate	ND	1		

### Laboratory Fortified Blank

File ID: 15	Type LFB	Test Code: EPA Method 314.0	Batch ID: 22395	Analysis Date: 07/23/2009 13:45
Sample ID: LFB-22395	Units : µg/L	Run ID: IC_3_090723A	Prep Date: 07/23/2009	
Analyte	Result	PQL	SpkVal	SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual
Perchlorate	23.1	2	25	92 85 115

### Sample Matrix Spike

File ID: 25	Type LFM	Test Code: EPA Method 314.0	Batch ID: 22395	Analysis Date: 07/23/2009 16:49
Sample ID: 09072241-02ALFM	Units : µg/L	Run ID: IC_3_090723A	Prep Date: 07/23/2009	
Analyte	Result	PQL	SpkVal	SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual
Perchlorate	26	2	25	2.579 94 80 120

### Sample Matrix Spike Duplicate

File ID: 26	Type LFMD	Test Code: EPA Method 314.0	Batch ID: 22395	Analysis Date: 07/23/2009 17:08
Sample ID: 09072241-02ALFMD	Units : µg/L	Run ID: IC_3_090723A	Prep Date: 07/23/2009	
Analyte	Result	PQL	SpkVal	SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual
Perchlorate	25.8	2	25	2.579 93 80 120 25.97 0.5(15)

**Comments:**  
Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



# Alpha Analytical, Inc.

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Date:

11-Aug-09

## QC Summary Report

Work Order:

09072343

### Method Blank

File ID: 080609.B\45MB.D\

Sample ID: MB-22445

Analyte

Type MBLK

Test Code: EPA Method 200.8

Batch ID: 22445K

Units : mg/L

Run ID: ICP/MS\_090807A

Analysis Date: 08/07/2009 09:22

Prep Date: 07/30/2009

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	ND	0.005								

### Laboratory Control Spike

File ID: 080609.B\45L1.D\

Sample ID: LCS-22445

Analyte

Type LCS

Test Code: EPA Method 200.8

Batch ID: 22445K

Units : mg/L

Run ID: ICP/MS\_090807A

Analysis Date: 08/07/2009 09:46

Prep Date: 07/30/2009

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0432	0.005	0.05		86	80	120			

### Sample Matrix Spike

File ID: 080609.B\MS.D\

Sample ID: 09072442-08AMS

Analyte

Type MS

Test Code: EPA Method 200.8

Batch ID: 22445K

Units : mg/L

Run ID: ICP/MS\_090807A

Analysis Date: 08/07/2009 10:08

Prep Date: 07/30/2009

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0498	0.005	0.05	0	99.6	80	120			

### Sample Matrix Spike Duplicate

File ID: 080609.B\MSD.D\

Sample ID: 09072442-08AMSD

Analyte

Type MSD

Test Code: EPA Method 200.8

Batch ID: 22445K

Units : mg/L

Run ID: ICP/MS\_090807A

Analysis Date: 08/07/2009 10:14

Prep Date: 07/30/2009

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0458	0.005	0.05	0	92	80	120	0.04982	8.4(20)	

### Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



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Date:  
04-Aug-09

## QC Summary Report

Work Order:  
09072343

### Method Blank

Type **MBLK**

Test Code: \_\_\_\_\_

File ID: **09072907.D**

Batch ID: **MS15W0729M**

Analysis Date: **07/29/2009 15:32**

Sample ID: **MBLK MS15W0729M**

Units : **µg/L**

Run ID: **MSD\_15\_090729A**

Prep Date: **07/29/2009**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	ND	0.5								
Chloromethane	ND	1								
Vinyl chloride	ND	0.5								
Chloroethane	ND	0.5								
Bromomethane	ND	1								
Trichlorofluoromethane	ND	0.5								
1,1-Dichloroethene	ND	0.5								
Dichloromethane	ND	1								
Freon-113	ND	0.5								
trans-1,2-Dichloroethene	ND	0.5								
Methyl tert-butyl ether (MTBE)	ND	0.5								
1,1-Dichloroethane	ND	0.5								
2-Butanone (MEK)	ND	10								
cis-1,2-Dichloroethene	ND	0.5								
Bromochloromethane	ND	0.5								
Chloroform	ND	0.5								
2,2-Dichloropropane	ND	0.5								
1,2-Dichloroethane	ND	0.5								
1,1,1-Trichloroethane	ND	0.5								
1,1-Dichloropropene	ND	0.5								
Carbon tetrachloride	ND	0.5								
Benzene	ND	0.5								
Dibromomethane	ND	0.5								
1,2-Dichloropropane	ND	0.5								
Trichloroethene	ND	0.5								
Bromodichloromethane	ND	0.5								
4-Methyl-2-pentanone (MIBK)	ND	2.5								
cis-1,3-Dichloropropene	ND	0.5								
trans-1,3-Dichloropropene	ND	0.5								
1,1,2-Trichloroethane	ND	0.5								
Toluene	ND	0.5								
1,3-Dichloropropane	ND	0.5								
Dibromochloromethane	ND	0.5								
1,2-Dibromoethane (EDB)	ND	1								
Tetrachloroethene	ND	0.5								
1,1,1,2-Tetrachloroethane	ND	0.5								
Chlorobenzene	ND	0.5								
Ethylbenzene	ND	0.5								
m,p-Xylene	ND	0.5								
Bromoform	ND	0.5								
Styrene	ND	0.5								
o-Xylene	ND	0.5								
1,1,2,2-Tetrachloroethane	ND	0.5								
1,2,3-Trichloropropane	ND	1								
Isopropylbenzene	ND	0.5								
Bromobenzene	ND	0.5								
n-Propylbenzene	ND	0.5								
4-Chlorotoluene	ND	0.5								
2-Chlorotoluene	ND	0.5								
1,3,5-Trimethylbenzene	ND	0.5								
tert-Butylbenzene	ND	0.5								
1,2,4-Trimethylbenzene	ND	0.5								
sec-Butylbenzene	ND	0.5								
1,3-Dichlorobenzene	ND	0.5								
1,4-Dichlorobenzene	ND	0.5								
4-Isopropyltoluene	ND	0.5								
1,2-Dichlorobenzene	ND	0.5								
n-Butylbenzene	ND	0.5								
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5								
1,2,4-Trichlorobenzene	ND	1								
Naphthalene	ND	1								
Hexachlorobutadiene	ND	1								
1,2,3-Trichlorobenzene	ND	1								
Surr: 1,2-Dichloroethane-d4	9.07		10		91	70	130			
Surr: Toluene-d8	10.4		10		104	70	130			



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:  
04-Aug-09

## QC Summary Report

Work Order:  
09072343

Surr: 4-Bromofluorobenzene 10.3 10 103 70 130

### Laboratory Control Spike

Type LCS

Test Code:

File ID: 09072905.D

Batch ID: MS15W0729M

Analysis Date: 07/29/2009 14:37

Sample ID: LCS MS15W0729M

Units : µg/L

Run ID: MSD\_15\_090729A

Prep Date: 07/29/2009

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	9.15	1	10		92	70	130			
Chloromethane	9.15	2	10		92	70	130			
Vinyl chloride	12.4	1	10		124	70	130			
Chloroethane	9.74	1	10		97	70	130			
Bromomethane	8.54	2	10		85	70	130			
Trichlorofluoromethane	11.5	1	10		115	70	130			
1,1-Dichloroethene	10.5	1	10		105	70	130			
Dichloromethane	10.5	2	10		105	70	130			
trans-1,2-Dichloroethene	11.3	1	10		113	70	130			
Methyl tert-butyl ether (MTBE)	10.8	0.5	10		108	70	130			
1,1-Dichloroethane	11.4	1	10		114	70	130			
cis-1,2-Dichloroethene	11.4	1	10		114	70	130			
Bromochloromethane	10.7	1	10		107	70	130			
Chloroform	11	1	10		110	70	130			
2,2-Dichloropropane	12.2	1	10		122	70	130			
1,2-Dichloroethane	10.2	1	10		102	70	130			
1,1,1-Trichloroethane	11.3	1	10		113	70	130			
1,1-Dichloropropene	11.6	1	10		116	70	130			
Carbon tetrachloride	11.2	1	10		112	70	130			
Benzene	11.3	0.5	10		113	70	130			
Dibromomethane	10.2	1	10		102	70	130			
1,2-Dichloropropane	11.8	1	10		118	70	130			
Trichloroethene	10.7	1	10		107	70	130			
Bromodichloromethane	9.95	1	10		100	70	130			
cis-1,3-Dichloropropene	10.3	1	10		103	70	130			
trans-1,3-Dichloropropene	9.67	1	10		97	70	130			
1,1,2-Trichloroethane	10.6	1	10		106	70	130			
Toluene	10.3	0.5	10		103	70	130			
1,3-Dichloropropane	10.7	1	10		107	70	130			
Dibromochloromethane	9.17	1	10		92	70	130			
1,2-Dibromoethane (EDB)	19.6	2	20		98	70	130			
Tetrachloroethene	10.4	1	10		104	70	130			
1,1,1,2-Tetrachloroethane	10.2	1	10		102	70	130			
Chlorobenzene	10.2	1	10		102	70	130			
Ethylbenzene	10.5	0.5	10		105	70	130			
m,p-Xylene	11	0.5	10		110	70	130			
Bromoform	8.16	1	10		82	70	130			
Styrene	7.32	1	10		73	70	130			
o-Xylene	10.9	0.5	10		109	70	130			
1,1,2,2-Tetrachloroethane	10.2	1	10		102	70	130			
1,2,3-Trichloropropane	20.1	2	20		100	70	130			
Isopropylbenzene	11.4	1	10		114	70	130			
Bromobenzene	10.3	1	10		103	70	130			
n-Propylbenzene	11.6	1	10		116	70	130			
4-Chlorotoluene	11.1	1	10		111	70	130			
2-Chlorotoluene	11	1	10		110	70	130			
1,3,5-Trimethylbenzene	11.1	1	10		111	70	130			
tert-Butylbenzene	10.6	1	10		106	70	130			
1,2,4-Trimethylbenzene	11.1	1	10		111	70	130			
sec-Butylbenzene	11.2	1	10		112	70	130			
1,3-Dichlorobenzene	10.7	1	10		107	70	130			
1,4-Dichlorobenzene	10.3	1	10		103	70	130			
4-Isopropyltoluene	11.2	1	10		112	70	130			
1,2-Dichlorobenzene	10.2	1	10		102	70	130			
n-Butylbenzene	12.4	1	10		124	70	130			
1,2-Dibromo-3-chloropropane (DBCP)	49.9	3	50		99.9	70	130			
1,2,4-Trichlorobenzene	9.71	2	10		97	70	130			
Naphthalene	8.92	2	10		89	70	130			
Hexachlorobutadiene	19.6	2	20		98	70	130			
1,2,3-Trichlorobenzene	9.41	2	10		94	70	130			
Surr: 1,2-Dichloroethane-d4	10.6		10		106	70	130			
Surr: Toluene-d8	10.1		10		101	70	130			
Surr: 4-Bromofluorobenzene	10.3		10		103	70	130			



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:  
04-Aug-09

## QC Summary Report

Work Order:  
09072343

### Sample Matrix Spike

File ID: 09072914.D

Type MS

Test Code:

Batch ID: MS15W0729M

Analysis Date: 07/29/2009 18:20

Sample ID: 09072442-08AMS

Units : µg/L

Run ID: MSD\_15\_090729A

Prep Date: 07/29/2009

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	35.2	2.5	50	0	70	13	167			
Chloromethane	41.2	10	50	0	82	28	145			
Vinyl chloride	55.2	2.5	50	0	110	43	134			
Chloroethane	42.8	2.5	50	0	86	39	154			
Bromomethane	38.9	10	50	0	78	19	176			
Trichlorofluoromethane	45.7	2.5	50	0	91	34	160			
1,1-Dichloroethene	42.3	2.5	50	0	85	60	130			
Dichloromethane	43.6	10	50	0	87	68	130			
trans-1,2-Dichloroethene	46	2.5	50	0	92	63	130			
Methyl tert-butyl ether (MTBE)	47.9	1.3	50	0	96	56	141			
1,1-Dichloroethane	46.9	2.5	50	0	94	61	130			
cis-1,2-Dichloroethene	48.1	2.5	50	0	96	70	130			
Bromochloromethane	45.9	2.5	50	0	92	70	130			
Chloroform	45.3	2.5	50	0	91	67	130			
2,2-Dichloropropane	42.8	2.5	50	0	86	30	152			
1,2-Dichloroethane	44.7	2.5	50	0	89	60	135			
1,1,1-Trichloroethane	45.3	2.5	50	0	91	59	137			
1,1-Dichloropropene	46.8	2.5	50	0	94	63	130			
Carbon tetrachloride	44.5	2.5	50	0	89	50	147			
Benzene	46.4	1.3	50	0	93	67	130			
Dibromomethane	46.1	2.5	50	0	92	69	133			
1,2-Dichloropropane	50.5	2.5	50	0	101	69	130			
Trichloroethene	43.3	2.5	50	0	87	69	130			
Bromodichloromethane	42.1	2.5	50	0	84	66	134			
cis-1,3-Dichloropropene	40.5	2.5	50	0	81	63	130			
trans-1,3-Dichloropropene	40.5	2.5	50	0	81	66	131			
1,1,2-Trichloroethane	47.5	2.5	50	0	95	68	130			
Toluene	43.8	1.3	50	0	88	66	130			
1,3-Dichloropropane	48.8	2.5	50	0	98	70	130			
Dibromochloromethane	40.9	2.5	50	0	82	70	130			
1,2-Dibromoethane (EDB)	90.1	10	100	0	90	70	130			
Tetrachloroethene	41.7	2.5	50	0	83	61	134			
1,1,1,2-Tetrachloroethane	44.6	2.5	50	0	89	70	130			
Chlorobenzene	44.4	2.5	50	0	89	70	130			
Ethylbenzene	46.2	1.3	50	0.75	91	68	130			
m,p-Xylene	46.8	1.3	50	0	94	64	130			
Bromoform	36.3	2.5	50	0	73	64	138			
Styrene	31.7	2.5	50	0	63	69	130			M2
o-Xylene	47.3	1.3	50	0	95	70	130			
1,1,2,2-Tetrachloroethane	48.7	2.5	50	0	97	65	131			
1,2,3-Trichloropropane	93.3	10	100	0	93	70	130			
Isopropylbenzene	48.8	2.5	50	0	98	64	138			
Bromobenzene	44.9	2.5	50	0	90	70	130			
n-Propylbenzene	48.8	2.5	50	0	98	66	132			
4-Chlorotoluene	47	2.5	50	0	94	70	130			
2-Chlorotoluene	47.9	2.5	50	0	96	70	130			
1,3,5-Trimethylbenzene	47.6	2.5	50	0	95	66	136			
tert-Butylbenzene	46.2	2.5	50	0	92	65	137			
1,2,4-Trimethylbenzene	47.6	2.5	50	0	95	65	137			
sec-Butylbenzene	48.6	2.5	50	0	97	66	134			
1,3-Dichlorobenzene	45.7	2.5	50	0	91	70	130			
1,4-Dichlorobenzene	44.3	2.5	50	0	89	70	130			
4-Isopropyltoluene	47.7	2.5	50	0	95	66	137			
1,2-Dichlorobenzene	45.5	2.5	50	0	91	70	130			
n-Butylbenzene	51.8	2.5	50	0	104	60	142			
1,2-Dibromo-3-chloropropane (DBCP)	229	15	250	0	91	67	130			
1,2,4-Trichlorobenzene	39.9	10	50	0	80	61	137			
Naphthalene	37.6	10	50	0	75	40	167			
Hexachlorobutadiene	83.7	10	100	0	84	61	130			
1,2,3-Trichlorobenzene	39.1	10	50	0	78	51	144			
Surr: 1,2-Dichloroethane-d4	44.7		50		89	70	130			
Surr: Toluene-d8	50.9		50		102	70	130			
Surr: 4-Bromofluorobenzene	51.2		50		102	70	130			



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:  
04-Aug-09

## QC Summary Report

Work Order:  
09072343

### Sample Matrix Spike Duplicate

Type MSD

Test Code:

File ID: 09072915.D

Batch ID: MS15W0729M

Analysis Date: 07/29/2009 18:42

Sample ID: 09072442-08AMSD

Units : µg/L

Run ID: MSD\_15\_090729A

Prep Date: 07/29/2009

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	37.1	2.5	50	0	74	13	167	35.17	5.4(20)	
Chloromethane	42.5	10	50	0	85	28	145	41.2	3.2(20)	
Vinyl chloride	57.6	2.5	50	0	115	43	134	55.23	4.2(20)	
Chloroethane	43.2	2.5	50	0	86	39	154	42.77	1.1(20)	
Bromomethane	41.6	10	50	0	83	19	176	38.88	6.7(20)	
Trichlorofluoromethane	46.9	2.5	50	0	94	34	160	45.72	2.5(20)	
1,1-Dichloroethene	43	2.5	50	0	86	60	130	42.28	1.6(20)	
Dichloromethane	45	10	50	0	90	68	130	43.6	3.1(20)	
trans-1,2-Dichloroethene	46.1	2.5	50	0	92	63	130	45.97	0.4(20)	
Methyl tert-butyl ether (MTBE)	50	1.3	50	0	100	56	141	47.85	4.4(20)	
1,1-Dichloroethane	47.4	2.5	50	0	95	61	130	46.94	0.9(20)	
cis-1,2-Dichloroethene	49.4	2.5	50	0	99	70	130	48.13	2.6(20)	
Bromochloromethane	48.2	2.5	50	0	96	70	130	45.91	4.9(20)	
Chloroform	47.1	2.5	50	0	94	67	130	45.3	3.9(20)	
2,2-Dichloropropane	42.7	2.5	50	0	85	30	152	42.8	0.2(20)	
1,2-Dichloroethane	46.2	2.5	50	0	92	60	135	44.66	3.3(20)	
1,1,1-Trichloroethane	46.3	2.5	50	0	93	59	137	45.33	2.1(20)	
1,1-Dichloropropene	47.1	2.5	50	0	94	63	130	46.81	0.7(20)	
Carbon tetrachloride	45.2	2.5	50	0	90	50	147	44.5	1.7(20)	
Benzene	47.6	1.3	50	0	95	67	130	46.4	2.6(20)	
Dibromomethane	46.7	2.5	50	0	93	69	133	46.06	1.3(20)	
1,2-Dichloropropane	51.7	2.5	50	0	103	69	130	50.48	2.5(20)	
Trichloroethene	44.3	2.5	50	0	89	69	130	43.26	2.4(20)	
Bromodichloromethane	44.4	2.5	50	0	89	66	134	42.13	5.1(20)	
cis-1,3-Dichloropropene	42	2.5	50	0	84	63	130	40.52	3.6(20)	
trans-1,3-Dichloropropene	41.8	2.5	50	0	84	66	131	40.51	3.1(20)	
1,1,2-Trichloroethane	49.4	2.5	50	0	99	68	130	47.51	3.9(20)	
Toluene	43	1.3	50	0	86	66	130	43.76	1.7(20)	
1,3-Dichloropropane	48.9	2.5	50	0	98	70	130	48.77	0.2(20)	
Dibromochloromethane	41.3	2.5	50	0	83	70	130	40.93	0.9(20)	
1,2-Dibromoethane (EDB)	88.8	10	100	0	89	70	130	90.07	1.4(20)	
Tetrachloroethene	40.5	2.5	50	0	81	61	134	41.7	3.0(20)	
1,1,1,2-Tetrachloroethane	44.5	2.5	50	0	89	70	130	44.57	0.1(20)	
Chlorobenzene	43.9	2.5	50	0	88	70	130	44.44	1.2(20)	
Ethylbenzene	45.7	1.3	50	0.75	90	68	130	46.18	1.1(20)	
m,p-Xylene	46.1	1.3	50	0	92	64	130	46.78	1.5(20)	
Bromoform	37.1	2.5	50	0	74	64	138	36.31	2.1(20)	
Styrene	31.6	2.5	50	0	63	69	130	31.7	0.2(20)	M2
o-Xylene	47	1.3	50	0	94	70	130	47.27	0.5(20)	
1,1,2,2-Tetrachloroethane	48.5	2.5	50	0	97	65	131	48.74	0.5(20)	
1,2,3-Trichloropropane	93.9	10	100	0	94	70	130	93.33	0.6(20)	
Isopropylbenzene	47.8	2.5	50	0	96	64	138	48.81	2.2(20)	
Bromobenzene	44.7	2.5	50	0	89	70	130	44.86	0.4(20)	
n-Propylbenzene	47.8	2.5	50	0	96	66	132	48.81	2.1(20)	
4-Chlorotoluene	47.5	2.5	50	0	95	70	130	46.97	1.0(20)	
2-Chlorotoluene	47.5	2.5	50	0	95	70	130	47.91	1.0(20)	
1,3,5-Trimethylbenzene	46.4	2.5	50	0	93	66	136	47.56	2.4(20)	
tert-Butylbenzene	45.6	2.5	50	0	91	65	137	46.18	1.2(20)	
1,2,4-Trimethylbenzene	47.1	2.5	50	0	94	65	137	47.6	1.1(20)	
sec-Butylbenzene	46.9	2.5	50	0	94	66	134	48.62	3.5(20)	
1,3-Dichlorobenzene	46.2	2.5	50	0	92	70	130	45.73	1.0(20)	
1,4-Dichlorobenzene	44.3	2.5	50	0	89	70	130	44.34	0.0(20)	
4-Isopropyltoluene	47	2.5	50	0	94	66	137	47.69	1.5(20)	
1,2-Dichlorobenzene	45.5	2.5	50	0	91	70	130	45.47	0.0(20)	
n-Butylbenzene	50.8	2.5	50	0	102	60	142	51.76	1.9(20)	
1,2-Dibromo-3-chloropropane (DBCP)	236	15	250	0	94	67	130	228.6	3.0(20)	
1,2,4-Trichlorobenzene	39.8	10	50	0	80	61	137	39.94	0.3(20)	
Naphthalene	40.6	10	50	0	81	40	167	37.56	7.9(20)	
Hexachlorobutadiene	82.4	10	100	0	82	61	130	83.71	1.6(20)	
1,2,3-Trichlorobenzene	39.8	10	50	0	80	51	144	39.1	1.7(20)	
Surr: 1,2-Dichloroethane-d4	46.3		50		93	70	130			
Surr: Toluene-d8	49.5		50		99	70	130			
Surr: 4-Bromofluorobenzene	51.2		50		102	70	130			





# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

**Date:**  
04-Aug-09

## QC Summary Report

**Work Order:**  
09072343

**Comments:**

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Alpha uses descriptive data qualifier flags, which could be replaced with either a DOD Q or J flag.

M2 = Matrix spike recovery was low, the method control sample recovery was acceptable.

**Billing Information :**

**CHAIN-OF-CUSTODY RECORD**

**Alpha Analytical, Inc.**

255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778  
 TEL: (775) 355-1044 FAX: (775) 355-0406

**CA**

**WorkOrder : BMIS09072343**  
**Report Due By : 5:00 PM On : 06-Aug-09**

**Client:**  
 Battelle Memorial Institute  
 3990 Old Town Ave  
 Suite C-205  
 San Diego, CA 92110  
 PO : 218013

Report Attention	Phone Number	Email Address
David Conner	(818) 393-2808 x	connerd@battelle.org
Betsy Cutie	(614) 424-4899 x	cutiee@battelle.org
Shane Walton	(614) 424-4117 x	walton@s@battelle.org

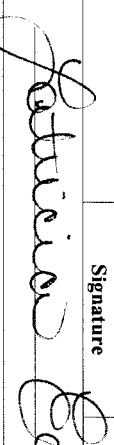
**Client's COC # :** 28751 **Job :** G005862/JPL Groundwater Monitoring

**EDD Required :** Yes  
**Sampled by :** Client  
**Cooler Temp** 4 °C **Samples Received** 23-Jul-09 **Date Printed** 23-Jul-09

**QC Level :** DS4 = DOD QC Required : Final Rpt, MBLK, InitCal/ConCal data, LCS, MS/MSD with Surrogates

Alpha Sample ID	Client Sample ID	Collection Date	No. of Bottles			314_W	METALS_D W	VOC_TIC_W	VOC_W	Requested Tests	Sample Remarks
			Alpha	Sub	TAT						
BM109072343-01A	MW-14-5	07/22/09 07:57	4	0	10	Perchlorate		VOC by 524 Criteria		Level IV QC	
BM109072343-02A	MW-14-4	07/22/09 08:20	4	0	10	Perchlorate		VOC by 524 Criteria			
BM109072343-03A	MW-14-3	07/22/09 08:50	5	0	10	Perchlorate		VOC by 524 Criteria			
BM109072343-04A	MW-14-2	07/22/09 09:20	5	0	10	Perchlorate		VOC by 524 Criteria			
BM109072343-05A	MW-14-1	07/22/09 10:15	5	0	10	Perchlorate		VOC by 524 Criteria		One voa rec'd with air bubble >6mm.	
BM109072343-06A	DUPE-2-3Q09	07/22/09 00:00	5	0	10	Perchlorate		VOC by 524 Criteria			
BM109072343-07A	TB-2-7/22/09	07/22/09 00:00	1	0	10	Perchlorate		VOC by 524 Criteria		Reno Trip Blank 3/16/09	
BM109072343-08A	EB-2-7/22/09	07/22/09 09:40	5	0	10	Perchlorate		VOC by 524 Criteria			

**Comments:** No security seals. Frozen ice. Samples should be used as the control spike sample if possible (I.E.: MS/MSD):.

<b>Signature</b>	<b>Print Name</b>	<b>Company</b>	<b>Date/Time</b>
	Patricia Edusa	Alpha Analytical, Inc.	7/23/09 12:37

**NOTE:** Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report. Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orho T-Tedlar B-Brass P-Plastic OT-Other

**Billing Information:**

Name GERALD TOMPKINS / BATELLE  
 Address 505 KING AVE  
 City, State, Zip COLUMBUS, OH 43201  
 Phone Number \_\_\_\_\_ Fax \_\_\_\_\_



**Alpha Analytical, Inc.**  
 255 Glendale Avenue, Suite 21  
 Sparks, Nevada 89431-5778  
 Phone (775) 355-1044  
 Fax (775) 355-0406

**Samples Collected From Which State?** 25751  
 AZ  CA  NV  WA   
 ID  OR  OTHER   
 Page # 1 of 1

Analyses Required

Client Name BATELLE / DAVID GUYER PO # 218013 Job # 6005862  
 Address 3990 OLD TOWN AVE, C-205 Email Address \_\_\_\_\_  
 City, State, Zip SAV DREGS CA 92110 Phone # (619) 726-7311 Fax # \_\_\_\_\_

Time Sampled	Date Sampled	Matrix* See Key Below	Sampled by	Lab ID Number (Use Only)	Report Attention	Sample Description	TAT	Field Filtered	Total and type of containers ** See below	Analysis	Global ID #	REMARKS
757	7/22/09	AQ	BMICR072343-01			MW-14-5	N/A		VP/4	VOC (524.2)		LEVEL IV VOC
820						MW-14-4			VP/4	Total GC (200.8)		
850						MW-14-3			VP/5	(104 - 314.0)		
920						MW-14-2			X			
1015						MW-14-1			X			One vial red w/ air bubble. 210000
						DUPE - 2 - 3009			X			DUPLICATE
						TB - 2 - 7/22/09			X			TB BLANK
940						EB - 2 - 7/22/09			X			EQUIP. BLANK

**ADDITIONAL INSTRUCTIONS:**

Signature	Print Name	Company	Date	Time
<i>[Signature]</i>	MARCO MENDOZA	INSIGHT EEC	7/22/09	12:30
<i>[Signature]</i>	Patricia Edrosa	Alpha	7/23/09	12:37
Received by				
Relinquished by				
Received by				
Relinquished by				
Received by				

\*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other AR - Air \*\* L-Liter V-Vial S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

**NOTE:** Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report.



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date: 06-Aug-09

David Conner  
Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
(818) 393-2808

Suite C-205

## CASE NARRATIVE

Project: G005862/JPL Groundwater Monitoring

Work Order: BMI09072442

Cooler Temp: 4 °C

Alpha's Sample ID	Client's Sample ID	Matrix
09072442-01A	MW-18-5	Aqueous
09072442-02A	MW-18-4	Aqueous
09072442-03A	MW-18-3	Aqueous
09072442-04A	MW-18-2	Aqueous
09072442-05A	DUPE-3-3Q09	Aqueous
09072442-06A	EB-3-7/23/09	Aqueous
09072442-07A	TB-3-7/23/09	Aqueous
09072442-08A	MW-3-4	Aqueous
09072442-09A	MW-3-3	Aqueous
09072442-10A	MW-3-2	Aqueous

### Manually Integrated Analytes

Alpha's Sample ID	Test Reference	Analyte
09072442-02A	EPA Method 314.0	Perchlorate
09072442-03A	EPA Method 314.0	Perchlorate
09072442-05A	EPA Method 314.0	Perchlorate
09072442-10A	EPA Method 314.0	Perchlorate

Enclosed please find the analytical results of the samples received by Alpha Analytical, Inc. under the above mentioned Work Order/Chain-of-Custody.

Alpha Analytical, Inc. has a formal Quality Assurance/Quality Control program, which is designed to meet or exceed the EPA requirements. All relevant QC met quality assurance objectives for this project unless otherwise stated in the footnotes.

If you have any questions with regards to this report, please contact Randy Gardner, Project Manager, at (800) 283-1183.

*Roger Scholl*

*Randy Gardner*

*Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer

Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641  
Date Received : 07/24/09

Job#: G005862/JPL Groundwater Monitoring

Perchlorate by Ion Chromatography  
EPA Method 314.0

Parameter	Concentration	Reporting Limit	Date Sampled	Date Analyzed
Client ID : <b>MW-18-5</b> Lab ID : BMI09072442-01A Perchlorate	ND	1.00 µg/L	07/23/09	07/29/09
Client ID : <b>MW-18-4</b> Lab ID : BMI09072442-02A Perchlorate	43.2	1.00 µg/L	07/23/09	07/29/09
Client ID : <b>MW-18-3</b> Lab ID : BMI09072442-03A Perchlorate	49.3	1.00 µg/L	07/23/09	07/29/09
Client ID : <b>MW-18-2</b> Lab ID : BMI09072442-04A Perchlorate	ND	1.00 µg/L	07/23/09	07/29/09
Client ID : <b>DUPE-3-3Q09</b> Lab ID : BMI09072442-05A Perchlorate	49.7	1.00 µg/L	07/23/09	07/29/09
Client ID : <b>EB-3-7/23/09</b> Lab ID : BMI09072442-06A Perchlorate	ND	1.00 µg/L	07/23/09	07/29/09
Client ID : <b>MW-3-4</b> Lab ID : BMI09072442-08A Perchlorate	ND	1.00 µg/L	07/23/09	07/29/09
Client ID : <b>MW-3-3</b> Lab ID : BMI09072442-09A Perchlorate	ND	1.00 µg/L	07/23/09	07/29/09
Client ID : <b>MW-3-2</b> Lab ID : BMI09072442-10A Perchlorate	219	5.00 µg/L	07/23/09	07/31/09

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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8/6/09

Report Date



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641  
Date Received : 07/24/09

Job#: G005862/JPL Groundwater Monitoring

Metals by ICPMS  
EPA Method 200.8

Parameter	Concentration	Reporting Limit	Date Sampled	Date Analyzed
Client ID : MW-18-4 Lab ID : BMI09072442-02A Chromium (Cr)	ND	0.0050 mg/L	07/23/09	08/07/09
Client ID : MW-18-3 Lab ID : BMI09072442-03A Chromium (Cr)	ND	0.0050 mg/L	07/23/09	08/07/09
Client ID : MW-18-2 Lab ID : BMI09072442-04A Chromium (Cr)	ND	0.0050 mg/L	07/23/09	08/07/09
Client ID : DUPE-3-3Q09 Lab ID : BMI09072442-05A Chromium (Cr)	ND	0.0050 mg/L	07/23/09	08/07/09
Client ID : EB-3-7/23/09 Lab ID : BMI09072442-06A Chromium (Cr)	ND	0.0050 mg/L	07/23/09	08/07/09
Client ID : MW-3-4 Lab ID : BMI09072442-08A Chromium (Cr)	ND	0.0050 mg/L	07/23/09	08/07/09
Client ID : MW-3-3 Lab ID : BMI09072442-09A Chromium (Cr)	ND	0.0050 mg/L	07/23/09	08/07/09
Client ID : MW-3-2 Lab ID : BMI09072442-10A Chromium (Cr)	ND	0.0050 mg/L	07/23/09	08/07/09

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

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8/10/09

Report Date



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

### Tentatively Identified Compounds - Volatile Organics by GC/MS

Client ID :	Lab ID :	Parameter	Estimated Concentration	Estimated Reporting Limit	Date Received	Date Sampled	Date Analyzed
MW-18-5	BMI09072442-01A	Sulfur dioxide	3.6	2.0 µg/L	07/24/09	07/23/09	07/29/09
MW-18-4	BMI09072442-02A	*** None Found ***	ND	2.0 µg/L	07/24/09	07/23/09	07/29/09
MW-18-3	BMI09072442-03A	*** None Found ***	ND	2.0 µg/L	07/24/09	07/23/09	07/29/09
MW-18-2	BMI09072442-04A	*** None Found ***	ND	2.0 µg/L	07/24/09	07/23/09	07/29/09
DUPE-3-3Q09	BMI09072442-05A	*** None Found ***	ND	2.0 µg/L	07/24/09	07/23/09	07/29/09
EB-3-7/23/09	BMI09072442-06A	2-Methyl-1-propene	12	2.0 µg/L	07/24/09	07/23/09	07/29/09
TB-3-7/23/09	BMI09072442-07A	*** None Found ***	ND	2.0 µg/L	07/24/09	07/23/09	07/29/09
MW-3-4	BMI09072442-08A	*** None Found ***	ND	2.0 µg/L	07/24/09	07/23/09	07/29/09
MW-3-3	BMI09072442-09A	*** None Found ***	ND	2.0 µg/L	07/24/09	07/23/09	07/29/09
MW-3-2	BMI09072442-10A	*** None Found ***	ND	2.0 µg/L	07/24/09	07/23/09	07/30/09

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

8/6/09

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

Report Date

Page 1 of 1



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072442-01A  
Client I.D. Number: MW-18-5

Sampled: 07/23/09  
Received: 07/24/09  
Analyzed: 07/29/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	90	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	105	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	106	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer

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Page 1 of 1





# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072442-02A  
Client I.D. Number: MW-18-4

Sampled: 07/23/09  
Received: 07/24/09  
Analyzed: 07/29/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	2.4	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	13	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	1.4	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	90	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	107	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	102	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

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Page 1 of 1



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072442-03A  
Client I.D. Number: MW-18-3

Sampled: 07/23/09  
Received: 07/24/09  
Analyzed: 07/29/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	1.5	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	6.1	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	0.67	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	95	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	106	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	100	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

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Page 1 of 1



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072442-04A  
Client I.D. Number: MW-18-2

Sampled: 07/23/09  
Received: 07/24/09  
Analyzed: 07/29/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	97	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	106	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	106	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

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# Alpha Analytical, Inc.

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## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072442-05A  
Client I.D. Number: DUPE-3-3Q09

Sampled: 07/23/09  
Received: 07/24/09  
Analyzed: 07/29/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	1.6	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	6.8	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	0.71	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	94	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	106	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	101	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

8/6/09

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Report Date

Page 1 of 1



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072442-06A  
Client I.D. Number: EB-3-7/23/09

Sampled: 07/23/09  
Received: 07/24/09  
Analyzed: 07/29/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	89	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	109	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	102	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

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# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072442-07A  
Client I.D. Number: TB-3-7/23/09

Sampled: 07/23/09  
Received: 07/24/09  
Analyzed: 07/29/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	95	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	105	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	103	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

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# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072442-08A  
Client I.D. Number: MW-3-4

Sampled: 07/23/09  
Received: 07/24/09  
Analyzed: 07/29/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	0.75	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	90	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	107	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	106	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

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# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072442-09A  
Client I.D. Number: MW-3-3

Sampled: 07/23/09  
Received: 07/24/09  
Analyzed: 07/29/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	93	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	107	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	103	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

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## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072442-10A  
Client I.D. Number: MW-3-2

Sampled: 07/23/09  
Received: 07/24/09  
Analyzed: 07/30/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	0.63	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	1.0	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	1.2	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	92	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	107	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	99	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	1.2	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

8/6/09

Report Date

Page 1 of 1



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## VOC Sample Preservation Report

**Work Order:** BMI09072442

**Project:** G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	pH
09072442-01A	MW-18-5	Aqueous	2
09072442-02A	MW-18-4	Aqueous	2
09072442-03A	MW-18-3	Aqueous	2
09072442-04A	MW-18-2	Aqueous	2
09072442-05A	DUPE-3-3Q09	Aqueous	2
09072442-06A	EB-3-7/23/09	Aqueous	2
09072442-07A	TB-3-7/23/09	Aqueous	2
09072442-08A	MW-3-4	Aqueous	2
09072442-09A	MW-3-3	Aqueous	2
09072442-10A	MW-3-2	Aqueous	2

8/6/09

**Report Date**

Page 1 of 1



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:  
05-Aug-09

## QC Summary Report

Work Order:  
09072442

### Method Blank

File ID: 14	Type MBLK	Test Code: EPA Method 314.0	Batch ID: 22432	Analysis Date: 07/29/2009 12:55
Sample ID: MB-22432	Units : µg/L	Run ID: IC_3_090729A	Prep Date: 07/29/2009	
Analyte	Result	PQL	SpkVal	SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual
Perchlorate	ND	1		

### Laboratory Fortified Blank

File ID: 15	Type LFB	Test Code: EPA Method 314.0	Batch ID: 22432	Analysis Date: 07/29/2009 13:13
Sample ID: LFB-22432	Units : µg/L	Run ID: IC_3_090729A	Prep Date: 07/29/2009	
Analyte	Result	PQL	SpkVal	SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual
Perchlorate	23.4	2	25	93 85 115

### Sample Matrix Spike

File ID: 23	Type LFM	Test Code: EPA Method 314.0	Batch ID: 22432	Analysis Date: 07/29/2009 15:41
Sample ID: 09072442-04ALFM	Units : µg/L	Run ID: IC_3_090729A	Prep Date: 07/29/2009	
Analyte	Result	PQL	SpkVal	SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual
Perchlorate	22.5	2	25	0 90 80 120

### Sample Matrix Spike Duplicate

File ID: 24	Type LFMD	Test Code: EPA Method 314.0	Batch ID: 22432	Analysis Date: 07/29/2009 15:59
Sample ID: 09072442-04ALFMD	Units : µg/L	Run ID: IC_3_090729A	Prep Date: 07/29/2009	
Analyte	Result	PQL	SpkVal	SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual
Perchlorate	22.9	2	25	0 91 80 120 22.53 1.5(15)

### Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



# Alpha Analytical, Inc.

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Date:  
11-Aug-09

## QC Summary Report

Work Order:  
09072442

### Method Blank

Method Blank		Type	Test Code: EPA Method 200.8							
File ID: 080609.B\45MB.D\		MBLK	Batch ID: 22445K				Analysis Date: 08/07/2009 09:22			
Sample ID: MB-22445	Units : mg/L		Run ID: ICP/MS_090807A				Prep Date: 07/30/2009			
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	ND	0.005								

### Laboratory Control Spike

Laboratory Control Spike		Type	Test Code: EPA Method 200.8							
File ID: 080609.B\45L1.D\		LCS	Batch ID: 22445K				Analysis Date: 08/07/2009 09:46			
Sample ID: LCS-22445	Units : mg/L		Run ID: ICP/MS_090807A				Prep Date: 07/30/2009			
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0432	0.005	0.05		86	80	120			

### Sample Matrix Spike

Sample Matrix Spike		Type	Test Code: EPA Method 200.8							
File ID: 080609.B\MS.D\		MS	Batch ID: 22445K				Analysis Date: 08/07/2009 10:08			
Sample ID: 09072442-08AMS	Units : mg/L		Run ID: ICP/MS_090807A				Prep Date: 07/30/2009			
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0498	0.005	0.05		0 99.6	80	120			

### Sample Matrix Spike Duplicate

Sample Matrix Spike Duplicate		Type	Test Code: EPA Method 200.8							
File ID: 080609.B\MSD.D\		MSD	Batch ID: 22445K				Analysis Date: 08/07/2009 10:14			
Sample ID: 09072442-08AMSD	Units : mg/L		Run ID: ICP/MS_090807A				Prep Date: 07/30/2009			
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0458	0.005	0.05		0 92	80	120	0.04982	8.4(20)	

### Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



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Date:  
06-Aug-09

## QC Summary Report

Work Order:  
09072442

### Method Blank

Type **MBLK**

Test Code: \_\_\_\_\_

File ID: **09072907.D**

Batch ID: **MS15W0729M**

Analysis Date: **07/29/2009 15:32**

Sample ID: **MBLK MS15W0729M**

Units : **µg/L**

Run ID: **MSD\_15\_090729A**

Prep Date: **07/29/2009**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	ND	0.5								
Chloromethane	ND	1								
Vinyl chloride	ND	0.5								
Chloroethane	ND	0.5								
Bromomethane	ND	1								
Trichlorofluoromethane	ND	0.5								
1,1-Dichloroethene	ND	0.5								
Dichloromethane	ND	1								
Freon-113	ND	0.5								
trans-1,2-Dichloroethene	ND	0.5								
Methyl tert-butyl ether (MTBE)	ND	0.5								
1,1-Dichloroethane	ND	0.5								
2-Butanone (MEK)	ND	10								
cis-1,2-Dichloroethene	ND	0.5								
Bromochloromethane	ND	0.5								
Chloroform	ND	0.5								
2,2-Dichloropropane	ND	0.5								
1,2-Dichloroethane	ND	0.5								
1,1,1-Trichloroethane	ND	0.5								
1,1-Dichloropropene	ND	0.5								
Carbon tetrachloride	ND	0.5								
Benzene	ND	0.5								
Dibromomethane	ND	0.5								
1,2-Dichloropropane	ND	0.5								
Trichloroethene	ND	0.5								
Bromodichloromethane	ND	0.5								
4-Methyl-2-pentanone (MIBK)	ND	2.5								
cis-1,3-Dichloropropene	ND	0.5								
trans-1,3-Dichloropropene	ND	0.5								
1,1,2-Trichloroethane	ND	0.5								
Toluene	ND	0.5								
1,3-Dichloropropane	ND	0.5								
Dibromochloromethane	ND	0.5								
1,2-Dibromoethane (EDB)	ND	1								
Tetrachloroethene	ND	0.5								
1,1,1,2-Tetrachloroethane	ND	0.5								
Chlorobenzene	ND	0.5								
Ethylbenzene	ND	0.5								
m,p-Xylene	ND	0.5								
Bromoform	ND	0.5								
Styrene	ND	0.5								
o-Xylene	ND	0.5								
1,1,2,2-Tetrachloroethane	ND	0.5								
1,2,3-Trichloropropane	ND	1								
Isopropylbenzene	ND	0.5								
Bromobenzene	ND	0.5								
n-Propylbenzene	ND	0.5								
4-Chlorotoluene	ND	0.5								
2-Chlorotoluene	ND	0.5								
1,3,5-Trimethylbenzene	ND	0.5								
tert-Butylbenzene	ND	0.5								
1,2,4-Trimethylbenzene	ND	0.5								
sec-Butylbenzene	ND	0.5								
1,3-Dichlorobenzene	ND	0.5								
1,4-Dichlorobenzene	ND	0.5								
4-Isopropyltoluene	ND	0.5								
1,2-Dichlorobenzene	ND	0.5								
n-Butylbenzene	ND	0.5								
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5								
1,2,4-Trichlorobenzene	ND	1								
Naphthalene	ND	1								
Hexachlorobutadiene	ND	1								
1,2,3-Trichlorobenzene	ND	1								
Surr: 1,2-Dichloroethane-d4	9.07		10		91	70	130			
Surr: Toluene-d8	10.4		10		104	70	130			



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Date:

06-Aug-09

## QC Summary Report

Work Order:

09072442

Surr: 4-Bromofluorobenzene 10.3 10 103 70 130

### Laboratory Control Spike

Type LCS

Test Code:

File ID: 09072905.D

Batch ID: MS15W0729M

Analysis Date: 07/29/2009 14:37

Sample ID: LCS MS15W0729M

Units : µg/L

Run ID: MSD\_15\_090729A

Prep Date: 07/29/2009

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	9.15	1	10		92	70	130			
Chloromethane	9.15	2	10		92	70	130			
Vinyl chloride	12.4	1	10		124	70	130			
Chloroethane	9.74	1	10		97	70	130			
Bromomethane	8.54	2	10		85	70	130			
Trichlorofluoromethane	11.5	1	10		115	70	130			
1,1-Dichloroethene	10.5	1	10		105	70	130			
Dichloromethane	10.5	2	10		105	70	130			
trans-1,2-Dichloroethene	11.3	1	10		113	70	130			
Methyl tert-butyl ether (MTBE)	10.8	0.5	10		108	70	130			
1,1-Dichloroethane	11.4	1	10		114	70	130			
cis-1,2-Dichloroethene	11.4	1	10		114	70	130			
Bromochloromethane	10.7	1	10		107	70	130			
Chloroform	11	1	10		110	70	130			
2,2-Dichloropropane	12.2	1	10		122	70	130			
1,2-Dichloroethane	10.2	1	10		102	70	130			
1,1,1-Trichloroethane	11.3	1	10		113	70	130			
1,1-Dichloropropene	11.6	1	10		116	70	130			
Carbon tetrachloride	11.2	1	10		112	70	130			
Benzene	11.3	0.5	10		113	70	130			
Dibromomethane	10.2	1	10		102	70	130			
1,2-Dichloropropane	11.8	1	10		118	70	130			
Trichloroethene	10.7	1	10		107	70	130			
Bromodichloromethane	9.95	1	10		100	70	130			
cis-1,3-Dichloropropene	10.3	1	10		103	70	130			
trans-1,3-Dichloropropene	9.67	1	10		97	70	130			
1,1,2-Trichloroethane	10.6	1	10		106	70	130			
Toluene	10.3	0.5	10		103	70	130			
1,3-Dichloropropane	10.7	1	10		107	70	130			
Dibromochloromethane	9.17	1	10		92	70	130			
1,2-Dibromoethane (EDB)	19.6	2	20		98	70	130			
Tetrachloroethene	10.4	1	10		104	70	130			
1,1,1,2-Tetrachloroethane	10.2	1	10		102	70	130			
Chlorobenzene	10.2	1	10		102	70	130			
Ethylbenzene	10.5	0.5	10		105	70	130			
m,p-Xylene	11	0.5	10		110	70	130			
Bromoform	8.16	1	10		82	70	130			
Styrene	7.32	1	10		73	70	130			
o-Xylene	10.9	0.5	10		109	70	130			
1,1,2,2-Tetrachloroethane	10.2	1	10		102	70	130			
1,2,3-Trichloropropane	20.1	2	20		100	70	130			
Isopropylbenzene	11.4	1	10		114	70	130			
Bromobenzene	10.3	1	10		103	70	130			
n-Propylbenzene	11.6	1	10		116	70	130			
4-Chlorotoluene	11.1	1	10		111	70	130			
2-Chlorotoluene	11	1	10		110	70	130			
1,3,5-Trimethylbenzene	11.1	1	10		111	70	130			
tert-Butylbenzene	10.6	1	10		106	70	130			
1,2,4-Trimethylbenzene	11.1	1	10		111	70	130			
sec-Butylbenzene	11.2	1	10		112	70	130			
1,3-Dichlorobenzene	10.7	1	10		107	70	130			
1,4-Dichlorobenzene	10.3	1	10		103	70	130			
4-Isopropyltoluene	11.2	1	10		112	70	130			
1,2-Dichlorobenzene	10.2	1	10		102	70	130			
n-Butylbenzene	12.4	1	10		124	70	130			
1,2-Dibromo-3-chloropropane (DBCP)	49.9	3	50		99.9	70	130			
1,2,4-Trichlorobenzene	9.71	2	10		97	70	130			
Naphthalene	8.92	2	10		89	70	130			
Hexachlorobutadiene	19.6	2	20		98	70	130			
1,2,3-Trichlorobenzene	9.41	2	10		94	70	130			
Surr: 1,2-Dichloroethane-d4	10.6		10		106	70	130			
Surr: Toluene-d8	10.1		10		101	70	130			
Surr: 4-Bromofluorobenzene	10.3		10		103	70	130			



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:  
06-Aug-09

## QC Summary Report

Work Order:  
09072442

### Sample Matrix Spike

Type MS

Test Code:

File ID: 09072912.D

Batch ID: MS15W0729M

Analysis Date: 07/29/2009 17:36

Sample ID: 09072442-04AMS

Units : µg/L

Run ID: MSD\_15\_090729A

Prep Date: 07/29/2009

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	40.7	2.5	50	0	81	13	167			
Chloromethane	44.2	10	50	0	88	28	145			
Vinyl chloride	58.7	2.5	50	0	117	43	134			
Chloroethane	45.1	2.5	50	0	90	39	154			
Bromomethane	39.2	10	50	0	78	19	176			
Trichlorofluoromethane	51.6	2.5	50	0	103	34	160			
1,1-Dichloroethene	47.3	2.5	50	0	95	60	130			
Dichloromethane	46.6	10	50	0	93	68	130			
trans-1,2-Dichloroethene	49.7	2.5	50	0	99	63	130			
Methyl tert-butyl ether (MTBE)	48.5	1.3	50	0	97	56	141			
1,1-Dichloroethane	50.5	2.5	50	0	101	61	130			
cis-1,2-Dichloroethene	50.5	2.5	50	0	101	70	130			
Bromochloromethane	49.9	2.5	50	0	99.8	70	130			
Chloroform	49.9	2.5	50	0	99.8	67	130			
2,2-Dichloropropane	45.9	2.5	50	0	92	30	152			
1,2-Dichloroethane	46.7	2.5	50	0	93	60	135			
1,1,1-Trichloroethane	48.8	2.5	50	0	98	59	137			
1,1-Dichloropropene	50.9	2.5	50	0	102	63	130			
Carbon tetrachloride	47.1	2.5	50	0	94	50	147			
Benzene	50.3	1.3	50	0	101	67	130			
Dibromomethane	46.9	2.5	50	0	94	69	133			
1,2-Dichloropropane	54	2.5	50	0	108	69	130			
Trichloroethene	46.8	2.5	50	0	94	69	130			
Bromodichloromethane	44.9	2.5	50	0	90	66	134			
cis-1,3-Dichloropropene	41.8	2.5	50	0	84	63	130			
trans-1,3-Dichloropropene	41.4	2.5	50	0	83	66	131			
1,1,2-Trichloroethane	49.1	2.5	50	0	98	68	130			
Toluene	45.8	1.3	50	0	92	66	130			
1,3-Dichloropropane	49.5	2.5	50	0	99	70	130			
Dibromochloromethane	41.7	2.5	50	0	83	70	130			
1,2-Dibromoethane (EDB)	90.6	10	100	0	91	70	130			
Tetrachloroethene	43.2	2.5	50	0	86	61	134			
1,1,1,2-Tetrachloroethane	46.4	2.5	50	0	93	70	130			
Chlorobenzene	45.4	2.5	50	0	91	70	130			
Ethylbenzene	47.6	1.3	50	0	95	68	130			
m,p-Xylene	48.4	1.3	50	0	97	64	130			
Bromoform	35.3	2.5	50	0	71	64	138			
Styrene	32.5	2.5	50	0	65	69	130			M2
o-Xylene	48.9	1.3	50	0	98	70	130			
1,1,2,2-Tetrachloroethane	47.4	2.5	50	0	95	65	131			
1,2,3-Trichloropropane	91.4	10	100	0	91	70	130			
Isopropylbenzene	50	2.5	50	0	100	64	138			
Bromobenzene	45.7	2.5	50	0	91	70	130			
n-Propylbenzene	50.2	2.5	50	0	100	66	132			
4-Chlorotoluene	49.5	2.5	50	0	99	70	130			
2-Chlorotoluene	49.5	2.5	50	0	99	70	130			
1,3,5-Trimethylbenzene	48.6	2.5	50	0	97	66	136			
tert-Butylbenzene	47.9	2.5	50	0	96	65	137			
1,2,4-Trimethylbenzene	48.8	2.5	50	0	98	65	137			
sec-Butylbenzene	49.1	2.5	50	0	98	66	134			
1,3-Dichlorobenzene	46.6	2.5	50	0	93	70	130			
1,4-Dichlorobenzene	44.4	2.5	50	0	89	70	130			
4-Isopropyltoluene	48.9	2.5	50	0	98	66	137			
1,2-Dichlorobenzene	45.5	2.5	50	0	91	70	130			
n-Butylbenzene	53.1	2.5	50	0	106	60	142			
1,2-Dibromo-3-chloropropane (DBCP)	222	15	250	0	89	67	130			
1,2,4-Trichlorobenzene	37.9	10	50	0	76	61	137			
Naphthalene	36.8	10	50	0	74	40	167			
Hexachlorobutadiene	82.1	10	100	0	82	61	130			
1,2,3-Trichlorobenzene	36.9	10	50	0	74	51	144			
Surr: 1,2-Dichloroethane-d4	47.3		50		95	70	130			
Surr: Toluene-d8	50		50		100	70	130			
Surr: 4-Bromofluorobenzene	50.8		50		102	70	130			



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:  
06-Aug-09

## QC Summary Report

Work Order:  
09072442

### Sample Matrix Spike

Type MS

Test Code:

File ID: 09072914.D

Batch ID: MS15W0729M

Analysis Date: 07/29/2009 18:20

Sample ID: 09072442-08AMS

Units: µg/L

Run ID: MSD\_15\_090729A

Prep Date: 07/29/2009

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	35.2	2.5	50	0	70	13	167			
Chloromethane	41.2	10	50	0	82	28	145			
Vinyl chloride	55.2	2.5	50	0	110	43	134			
Chloroethane	42.8	2.5	50	0	86	39	154			
Bromomethane	38.9	10	50	0	78	19	176			
Trichlorofluoromethane	45.7	2.5	50	0	91	34	160			
1,1-Dichloroethene	42.3	2.5	50	0	85	60	130			
Dichloromethane	43.6	10	50	0	87	68	130			
trans-1,2-Dichloroethene	46	2.5	50	0	92	63	130			
Methyl tert-butyl ether (MTBE)	47.9	1.3	50	0	96	56	141			
1,1-Dichloroethane	46.9	2.5	50	0	94	61	130			
cis-1,2-Dichloroethene	48.1	2.5	50	0	96	70	130			
Bromochloromethane	45.9	2.5	50	0	92	70	130			
Chloroform	45.3	2.5	50	0	91	67	130			
2,2-Dichloropropane	42.8	2.5	50	0	86	30	152			
1,2-Dichloroethane	44.7	2.5	50	0	89	60	135			
1,1,1-Trichloroethane	45.3	2.5	50	0	91	59	137			
1,1-Dichloropropene	46.8	2.5	50	0	94	63	130			
Carbon tetrachloride	44.5	2.5	50	0	89	50	147			
Benzene	46.4	1.3	50	0	93	67	130			
Dibromomethane	46.1	2.5	50	0	92	69	133			
1,2-Dichloropropane	50.5	2.5	50	0	101	69	130			
Trichloroethene	43.3	2.5	50	0	87	69	130			
Bromodichloromethane	42.1	2.5	50	0	84	66	134			
cis-1,3-Dichloropropene	40.5	2.5	50	0	81	63	130			
trans-1,3-Dichloropropene	40.5	2.5	50	0	81	66	131			
1,1,2-Trichloroethane	47.5	2.5	50	0	95	68	130			
Toluene	43.8	1.3	50	0	88	66	130			
1,3-Dichloropropane	48.8	2.5	50	0	98	70	130			
Dibromochloromethane	40.9	2.5	50	0	82	70	130			
1,2-Dibromoethane (EDB)	90.1	10	100	0	90	70	130			
Tetrachloroethene	41.7	2.5	50	0	83	61	134			
1,1,1,2-Tetrachloroethane	44.6	2.5	50	0	89	70	130			
Chlorobenzene	44.4	2.5	50	0	89	70	130			
Ethylbenzene	46.2	1.3	50	0.75	91	68	130			
m,p-Xylene	46.8	1.3	50	0	94	64	130			
Bromoform	36.3	2.5	50	0	73	64	138			
Styrene	31.7	2.5	50	0	63	69	130			M2
o-Xylene	47.3	1.3	50	0	95	70	130			
1,1,2,2-Tetrachloroethane	48.7	2.5	50	0	97	65	131			
1,2,3-Trichloropropane	93.3	10	100	0	93	70	130			
Isopropylbenzene	48.8	2.5	50	0	98	64	138			
Bromobenzene	44.9	2.5	50	0	90	70	130			
n-Propylbenzene	48.8	2.5	50	0	98	66	132			
4-Chlorotoluene	47	2.5	50	0	94	70	130			
2-Chlorotoluene	47.9	2.5	50	0	96	70	130			
1,3,5-Trimethylbenzene	47.6	2.5	50	0	95	66	136			
tert-Butylbenzene	46.2	2.5	50	0	92	65	137			
1,2,4-Trimethylbenzene	47.6	2.5	50	0	95	65	137			
sec-Butylbenzene	48.6	2.5	50	0	97	66	134			
1,3-Dichlorobenzene	45.7	2.5	50	0	91	70	130			
1,4-Dichlorobenzene	44.3	2.5	50	0	89	70	130			
4-Isopropyltoluene	47.7	2.5	50	0	95	66	137			
1,2-Dichlorobenzene	45.5	2.5	50	0	91	70	130			
n-Butylbenzene	51.8	2.5	50	0	104	60	142			
1,2-Dibromo-3-chloropropane (DBCP)	229	15	250	0	91	67	130			
1,2,4-Trichlorobenzene	39.9	10	50	0	80	61	137			
Naphthalene	37.6	10	50	0	75	40	167			
Hexachlorobutadiene	83.7	10	100	0	84	61	130			
1,2,3-Trichlorobenzene	39.1	10	50	0	78	51	144			
Surr: 1,2-Dichloroethane-d4	44.7		50		89	70	130			
Surr: Toluene-d8	50.9		50		102	70	130			
Surr: 4-Bromofluorobenzene	51.2		50		102	70	130			





# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:  
06-Aug-09

## QC Summary Report

Work Order:  
09072442

### Sample Matrix Spike Duplicate

Type **MSD**

Test Code: \_\_\_\_\_

File ID: **09072913.D**

Batch ID: **MS15W0729M**

Analysis Date: **07/29/2009 17:58**

Sample ID: **09072442-04AMSD**

Units : **µg/L**

Run ID: **MSD\_15\_090729A**

Prep Date: **07/29/2009**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	37.6	2.5	50	0	75	13	167	40.69	8.0(20)	
Chloromethane	41.5	10	50	0	83	28	145	44.15	6.2(20)	
Vinyl chloride	54.4	2.5	50	0	109	43	134	58.65	7.5(20)	
Chloroethane	40.8	2.5	50	0	82	39	154	45.13	10.0(20)	
Bromomethane	37.9	10	50	0	76	19	176	39.23	3.5(20)	
Trichlorofluoromethane	46.9	2.5	50	0	94	34	160	51.55	9.5(20)	
1,1-Dichloroethene	42.7	2.5	50	0	85	60	130	47.29	10.3(20)	
Dichloromethane	44.1	10	50	0	88	68	130	46.62	5.6(20)	
trans-1,2-Dichloroethene	46.1	2.5	50	0	92	63	130	49.67	7.5(20)	
Methyl tert-butyl ether (MTBE)	48.5	1.3	50	0	97	56	141	48.52	0.0(20)	
1,1-Dichloroethane	47.5	2.5	50	0	95	61	130	50.47	6.1(20)	
cis-1,2-Dichloroethene	45.8	2.5	50	0	92	70	130	50.48	9.8(20)	
Bromochloromethane	47.3	2.5	50	0	95	70	130	49.9	5.3(20)	
Chloroform	47.2	2.5	50	0	94	67	130	49.92	5.5(20)	
2,2-Dichloropropane	43.1	2.5	50	0	86	30	152	45.86	6.2(20)	
1,2-Dichloroethane	45.6	2.5	50	0	91	60	135	46.65	2.4(20)	
1,1,1-Trichloroethane	45.9	2.5	50	0	92	59	137	48.81	6.2(20)	
1,1-Dichloropropene	47.3	2.5	50	0	95	63	130	50.91	7.3(20)	
Carbon tetrachloride	44.8	2.5	50	0	90	50	147	47.14	5.2(20)	
Benzene	47.4	1.3	50	0	95	67	130	50.32	6.0(20)	
Dibromomethane	46.5	2.5	50	0	93	69	133	46.87	0.9(20)	
1,2-Dichloropropane	51.2	2.5	50	0	102	69	130	53.99	5.4(20)	
Trichloroethene	43.9	2.5	50	0	88	69	130	46.79	6.3(20)	
Bromodichloromethane	42.8	2.5	50	0	86	66	134	44.9	4.8(20)	
cis-1,3-Dichloropropene	41.9	2.5	50	0	84	63	130	41.77	0.2(20)	
trans-1,3-Dichloropropene	42.2	2.5	50	0	84	66	131	41.42	1.8(20)	
1,1,2-Trichloroethane	48.3	2.5	50	0	97	68	130	49.1	1.6(20)	
Toluene	43.1	1.3	50	0	86	66	130	45.79	6.2(20)	
1,3-Dichloropropane	48.3	2.5	50	0	97	70	130	49.5	2.4(20)	
Dibromochloromethane	41.1	2.5	50	0	82	70	130	41.74	1.6(20)	
1,2-Dibromoethane (EDB)	89.7	10	100	0	90	70	130	90.56	0.9(20)	
Tetrachloroethene	41	2.5	50	0	82	61	134	43.21	5.3(20)	
1,1,1,2-Tetrachloroethane	44.4	2.5	50	0	89	70	130	46.4	4.4(20)	
Chlorobenzene	43.7	2.5	50	0	87	70	130	45.43	3.8(20)	
Ethylbenzene	44.6	1.3	50	0	89	68	130	47.56	6.4(20)	
m,p-Xylene	45.4	1.3	50	0	91	64	130	48.38	6.3(20)	
Bromoform	36.3	2.5	50	0	73	64	138	35.28	2.9(20)	
Styrene	31.2	2.5	50	0	62	69	130	32.45	3.9(20)	M2
o-Xylene	46.5	1.3	50	0	93	70	130	48.9	5.0(20)	
1,1,2,2-Tetrachloroethane	47.9	2.5	50	0	96	65	131	47.43	1.1(20)	
1,2,3-Trichloropropane	94.6	10	100	0	95	70	130	91.42	3.4(20)	
Isopropylbenzene	47.2	2.5	50	0	94	64	138	50.02	5.8(20)	
Bromobenzene	44.7	2.5	50	0	89	70	130	45.68	2.2(20)	
n-Propylbenzene	47.4	2.5	50	0	95	66	132	50.18	5.7(20)	
4-Chlorotoluene	46.5	2.5	50	0	93	70	130	49.52	6.2(20)	
2-Chlorotoluene	46.9	2.5	50	0	94	70	130	49.53	5.4(20)	
1,3,5-Trimethylbenzene	46.1	2.5	50	0	92	66	136	48.61	5.3(20)	
tert-Butylbenzene	44.7	2.5	50	0	89	65	137	47.94	7.1(20)	
1,2,4-Trimethylbenzene	46.7	2.5	50	0	93	65	137	48.79	4.4(20)	
sec-Butylbenzene	46.3	2.5	50	0	93	66	134	49.13	6.0(20)	
1,3-Dichlorobenzene	44.9	2.5	50	0	90	70	130	46.62	3.8(20)	
1,4-Dichlorobenzene	43.3	2.5	50	0	87	70	130	44.42	2.7(20)	
4-Isopropyltoluene	46.3	2.5	50	0	93	66	137	48.89	5.5(20)	
1,2-Dichlorobenzene	44.7	2.5	50	0	89	70	130	45.52	1.8(20)	
n-Butylbenzene	50.1	2.5	50	0	100	60	142	53.14	5.8(20)	
1,2-Dibromo-3-chloropropane (DBCP)	223	15	250	0	89	67	130	221.7	0.8(20)	
1,2,4-Trichlorobenzene	39.6	10	50	0	79	61	137	37.91	4.4(20)	
Naphthalene	37.7	10	50	0	75	40	167	36.82	2.3(20)	
Hexachlorobutadiene	78.4	10	100	0	78	61	130	82.06	4.6(20)	
1,2,3-Trichlorobenzene	37.5	10	50	0	75	51	144	36.86	1.7(20)	
Surr: 1,2-Dichloroethane-d4	47.1		50		94	70	130			
Surr: Toluene-d8	50.2		50		100	70	130			
Surr: 4-Bromofluorobenzene	50.4		50		101	70	130			



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

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Date:  
06-Aug-09

## QC Summary Report

Work Order:  
09072442

### Sample Matrix Spike Duplicate

Type MSD

Test Code:

File ID: 09072915.D

Batch ID: MS15W0729M

Analysis Date: 07/29/2009 18:42

Sample ID: 09072442-08AMSD

Units : µg/L

Run ID: MSD\_15\_090729A

Prep Date: 07/29/2009

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	37.1	2.5	50	0	74	13	167	35.17	5.4(20)	
Chloromethane	42.5	10	50	0	85	28	145	41.2	3.2(20)	
Vinyl chloride	57.6	2.5	50	0	115	43	134	55.23	4.2(20)	
Chloroethane	43.2	2.5	50	0	86	39	154	42.77	1.1(20)	
Bromomethane	41.6	10	50	0	83	19	176	38.88	6.7(20)	
Trichlorofluoromethane	46.9	2.5	50	0	94	34	160	45.72	2.5(20)	
1,1-Dichloroethene	43	2.5	50	0	86	60	130	42.28	1.6(20)	
Dichloromethane	45	10	50	0	90	68	130	43.6	3.1(20)	
trans-1,2-Dichloroethene	46.1	2.5	50	0	92	63	130	45.97	0.4(20)	
Methyl tert-butyl ether (MTBE)	50	1.3	50	0	100	56	141	47.85	4.4(20)	
1,1-Dichloroethane	47.4	2.5	50	0	95	61	130	46.94	0.9(20)	
cis-1,2-Dichloroethene	49.4	2.5	50	0	99	70	130	48.13	2.6(20)	
Bromochloromethane	48.2	2.5	50	0	96	70	130	45.91	4.9(20)	
Chloroform	47.1	2.5	50	0	94	67	130	45.3	3.9(20)	
2,2-Dichloropropane	42.7	2.5	50	0	85	30	152	42.8	0.2(20)	
1,2-Dichloroethane	46.2	2.5	50	0	92	60	135	44.66	3.3(20)	
1,1,1-Trichloroethane	46.3	2.5	50	0	93	59	137	45.33	2.1(20)	
1,1-Dichloropropene	47.1	2.5	50	0	94	63	130	46.81	0.7(20)	
Carbon tetrachloride	45.2	2.5	50	0	90	50	147	44.5	1.7(20)	
Benzene	47.6	1.3	50	0	95	67	130	46.4	2.6(20)	
Dibromomethane	46.7	2.5	50	0	93	69	133	46.06	1.3(20)	
1,2-Dichloropropane	51.7	2.5	50	0	103	69	130	50.48	2.5(20)	
Trichloroethene	44.3	2.5	50	0	89	69	130	43.26	2.4(20)	
Bromodichloromethane	44.4	2.5	50	0	89	66	134	42.13	5.1(20)	
cis-1,3-Dichloropropene	42	2.5	50	0	84	63	130	40.52	3.6(20)	
trans-1,3-Dichloropropene	41.8	2.5	50	0	84	66	131	40.51	3.1(20)	
1,1,2-Trichloroethane	49.4	2.5	50	0	99	68	130	47.51	3.9(20)	
Toluene	43	1.3	50	0	86	66	130	43.76	1.7(20)	
1,3-Dichloropropane	48.9	2.5	50	0	98	70	130	48.77	0.2(20)	
Dibromochloromethane	41.3	2.5	50	0	83	70	130	40.93	0.9(20)	
1,2-Dibromoethane (EDB)	88.8	10	100	0	89	70	130	90.07	1.4(20)	
Tetrachloroethene	40.5	2.5	50	0	81	61	134	41.7	3.0(20)	
1,1,1,2-Tetrachloroethane	44.5	2.5	50	0	89	70	130	44.57	0.1(20)	
Chlorobenzene	43.9	2.5	50	0	88	70	130	44.44	1.2(20)	
Ethylbenzene	45.7	1.3	50	0.75	90	68	130	46.18	1.1(20)	
m,p-Xylene	46.1	1.3	50	0	92	64	130	46.78	1.5(20)	
Bromoform	37.1	2.5	50	0	74	64	138	36.31	2.1(20)	
Styrene	31.6	2.5	50	0	63	69	130	31.7	0.2(20)	M2
o-Xylene	47	1.3	50	0	94	70	130	47.27	0.5(20)	
1,1,2,2-Tetrachloroethane	48.5	2.5	50	0	97	65	131	48.74	0.5(20)	
1,2,3-Trichloropropane	93.9	10	100	0	94	70	130	93.33	0.6(20)	
Isopropylbenzene	47.8	2.5	50	0	96	64	138	48.81	2.2(20)	
Bromobenzene	44.7	2.5	50	0	89	70	130	44.86	0.4(20)	
n-Propylbenzene	47.8	2.5	50	0	96	66	132	48.81	2.1(20)	
4-Chlorotoluene	47.5	2.5	50	0	95	70	130	46.97	1.0(20)	
2-Chlorotoluene	47.5	2.5	50	0	95	70	130	47.91	1.0(20)	
1,3,5-Trimethylbenzene	46.4	2.5	50	0	93	66	136	47.56	2.4(20)	
tert-Butylbenzene	45.6	2.5	50	0	91	65	137	46.18	1.2(20)	
1,2,4-Trimethylbenzene	47.1	2.5	50	0	94	65	137	47.6	1.1(20)	
sec-Butylbenzene	46.9	2.5	50	0	94	66	134	48.62	3.5(20)	
1,3-Dichlorobenzene	46.2	2.5	50	0	92	70	130	45.73	1.0(20)	
1,4-Dichlorobenzene	44.3	2.5	50	0	89	70	130	44.34	0.0(20)	
4-Isopropyltoluene	47	2.5	50	0	94	66	137	47.69	1.5(20)	
1,2-Dichlorobenzene	45.5	2.5	50	0	91	70	130	45.47	0.0(20)	
n-Butylbenzene	50.8	2.5	50	0	102	60	142	51.76	1.9(20)	
1,2-Dibromo-3-chloropropane (DBCP)	236	15	250	0	94	67	130	228.6	3.0(20)	
1,2,4-Trichlorobenzene	39.8	10	50	0	80	61	137	39.94	0.3(20)	
Naphthalene	40.6	10	50	0	81	40	167	37.56	7.9(20)	
Hexachlorobutadiene	82.4	10	100	0	82	61	130	83.71	1.6(20)	
1,2,3-Trichlorobenzene	39.8	10	50	0	80	51	144	39.1	1.7(20)	
Surr: 1,2-Dichloroethane-d4	46.3		50		93	70	130			
Surr: Toluene-d8	49.5		50		99	70	130			
Surr: 4-Bromofluorobenzene	51.2		50		102	70	130			



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

**Date:**  
06-Aug-09

## QC Summary Report

**Work Order:**  
09072442

**Comments:**

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Alpha uses descriptive data qualifier flags, which could be replaced with either a DOD Q or J flag.

M2 = Matrix spike recovery was low, the method control sample recovery was acceptable.

# CHAIN-OF-CUSTODY RECORD

**Alpha Analytical, Inc.**  
 255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778  
 TEL: (775) 355-1044 FAX: (775) 355-0406

**CA**  
 WorkOrder : BMIS09072442  
 Report Due By : 5:00 PM On : 07-Aug-09

**Client:**  
 Battelle Memorial Institute  
 3990 Old Town Ave  
 Suite C-205  
 San Diego, CA 92110  
 PO : 218013

**Report Attention**    **Phone Number**    **Email Address**  
 David Conner    (818) 393-2808 x    connerd@battelle.org  
 Betsy Cutie    (614) 424-4899 x    cutiee@battelle.org  
 Shane Walton    (614) 424-4117 x    waltonsh@battelle.org

Client's COC # : 25749/25755    Job : G005862/JPL Groundwater Monitoring  
 QC Level : DS3    = DOD QC Required : Final Rpt, MBLK, LCS, MS/MSD with Surrogates  
 Cooler Temp    Samples Received    Date Printed  
 4 °C    24-Jul-09    24-Jul-09

Alpha Sample ID	Client Sample ID	Collection Matrix Date	No. of Bottles Alpha Sub	TAT	Requested Tests				Sample Remarks	
					314_W	METALS_D W	VOC_TIC_W	VOC_W		
BM109072442-01A	MW-18-5	AQ 07/23/09 07:45	4	0	10	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	LEVEL IV QC
BM109072442-02A	MW-18-4	AQ 07/23/09 08:16	5	0	10	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	One voa rec'd with air bubble >6mm.
BM109072442-03A	MW-18-3	AQ 07/23/09 09:01	5	0	10	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	MS/MSD
BM109072442-04A	MW-18-2	AQ 07/23/09 09:58	10	0	10	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BM109072442-05A	DUPE-3-3Q09	AQ 07/23/09 00:00	5	0	10	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BM109072442-06A	EB-3-7/23/09	AQ 07/23/09 09:25	5	0	10	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BM109072442-07A	TB-3-7/23/09	AQ 07/23/09 00:00	1	0	10	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	Reno Trip Blank 3/16/09
BM109072442-08A	MW-3-4	AQ 07/23/09 11:30	10	0	10	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	MS/MSD, One voa rec'd with air bubble >6mm.
BM109072442-09A	MW-3-3	AQ 07/23/09 11:52	5	0	10	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BM109072442-10A	MW-3-2	AQ 07/23/09 12:10	5	0	10	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	One voa rec'd with air bubble >6mm.

Comments: No security seals. Frozen ice. Temp Blank #7730 received @ 4 degrees Celcius. Samples should be used as the control spike sample if possible (I.E. MS/MSD).

Logged in by: Patricia Edwards    Signature: [Signature]    Print Name: Patricia Edwards    Company: Alpha Analytical, Inc.    Date/Time: 7/24/09 11:26

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.  
 The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report.  
 Matrix Type : AQ(Aqueous)    AR(Air)    SO(Soil)    WS(Waste)    DW(Drinking Water)    OT(Other)    Bottle Type: L-Liter    V-Voa    S-Soil Jar    O-Orbo    T-Tedlar    B-Brass    P-Plastic    OT-Other

**Billing Information:**

Name GERALD TORPERS / BATELLE  
 Address 505 KING AVE  
 City, State, Zip COLUMBIUS, OH 43201  
 Phone Number \_\_\_\_\_ Fax \_\_\_\_\_



**Alpha Analytical, Inc.**  
 255 Glendale Avenue, Suite 21  
 Sparks, Nevada 89431-5778  
 Phone (775) 355-1044  
 Fax (775) 355-0406

**Samples Collected From Which State?** 25749  
 AZ \_\_\_\_\_ CA  NV \_\_\_\_\_ WA \_\_\_\_\_  
 ID \_\_\_\_\_ OR \_\_\_\_\_ OTHER \_\_\_\_\_ Page # 1 of 1

Analyses Required

Required QC Level?  
 I II III  IV

EDD / EDP? YES \_\_\_\_\_ NO \_\_\_\_\_

Global ID #

REMARKS

Client Name	Address	City, State, Zip	PO #	Job #	Phone #	Email Address	Fax #	Matrix* See Key Below	Sampled by	Lab ID Number (Use Only)	Report Attention	Sample Description	TAT	Field Filtered	Total and type of containers ** See below	Vol (524.2)	TOTAL Wt (202.8)	LIQ (214.0)	REMARKS
BATELLE	3890 OLD TOWN AVE, C-225	SAVIEGA CA 92110	218013	6005862	(619) 726-7311			AA	BMB9D72442-01			MW-18-5	NONE		VP / 4	X			LEVEL TV QC
												MW-18-4			VP / 5	X			
												MW-18-3			VP / 10	X			MS / MSD
												MW-18-2			VP / 5	X			DUPLICATE
															VP / 5	X			EQUIP BLANK
															VP / 5	X			TEIP BLANK
															VP / 2	X			


**ADDITIONAL INSTRUCTIONS:**

Signature	Print Name	Company	Date	Time
<i>[Signature]</i>	MARCO MENDEZ	INSIGHT EEC	7/23/09	1430
<i>[Signature]</i>	FATVICA EDUSA	Alpha	7/24/09	11:06
Received by				
Relinquished by				
Received by				
Relinquished by				
Received by				
Relinquished by				

\*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other AR - Air \*\* L-Liter V-Voa S-Soil Jar O-Orho T-Teclat B-Brass P-Plastic OT-Other  
 NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report.

**Billing Information:**

Name Gerald Tompkins / BATELLE  
 Address 505 KING AVE  
 City, State, Zip COLUMBUS, OH 43201  
 Phone Number \_\_\_\_\_ Fax \_\_\_\_\_



**Alpha Analytical, Inc.**  
 255 Glendale Avenue, Suite 21  
 Sparks, Nevada 89431-5778  
 Phone (775) 355-1044  
 Fax (775) 355-0406



**Samples Collected From Which State?** 25755  
 AZ \_\_\_\_\_ CA  NV \_\_\_\_\_ WA \_\_\_\_\_  
 ID \_\_\_\_\_ OR \_\_\_\_\_ OTHER \_\_\_\_\_ Page # 1 of 1

Analyses Required

Client Name <b>BATELLE / DAVID COWEN</b>		P.O. # <b>218013</b>	Job # <b>6005862</b>
Address <b>3990 OYSTERS AVE., C-235</b>		Email Address	
City, State, Zip <b>SAN DIEGO, CA 92110</b>		Phone # <b>(619) 726-7311</b>	
Time Sampled		Matrix* See Key Below	Sampled by
Lab ID Number (Use Only)		Report Attention	
Sample Description		TAT	Field Filtered
Total and type of containers ** See below		Required QC Level? I II <u>III</u> IV	
EDD/EDF? YES _____ NO _____		Global ID #	
REMARKS <b>MS/MSD</b>			

Time Sampled	Matrix* See Key Below	Sampled by	Lab ID Number (Use Only)	Report Attention	Sample Description	TAT	Field Filtered	Total and type of containers ** See below	Analyses Required	REMARKS
1130	7/14/09	AQ	BMI09072442-08		NW-3-4			VP/AD	<input checked="" type="checkbox"/>	
1152					NW-3-3			VP/5	<input checked="" type="checkbox"/>	
120					NW-3-2			VP/5	<input checked="" type="checkbox"/>	
					ETS- / 109			VP/5	<input checked="" type="checkbox"/>	EDDF - BLANK

**ADDITIONAL INSTRUCTIONS:**

Signature	Print Name	Company	Date	Time
	MARKS MENDOZA	ECC	7/23/09	1400
	KATRICIA EDWOSA	Alpha	7/24/09	11:06
Received by				
Relinquished by				
Received by				
Relinquished by				
Received by				

\*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other AR - Air \*\* L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other  
 NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report.



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date: 06-Aug-09

David Conner  
Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
(818) 393-2808

Suite C-205

## CASE NARRATIVE

Project: G005862/JPL Groundwater Monitoring

Work Order: BMI09072804

Cooler Temp: 4 °C

Alpha's Sample ID	Client's Sample ID	Matrix
09072804-01A	MW-21-5	Aqueous
09072804-02A	MW-21-4	Aqueous
09072804-03A	MW-21-3	Aqueous
09072804-04A	MW-21-2	Aqueous
09072804-05A	MW-21-1	Aqueous
09072804-06A	DUPE-4-3Q09	Aqueous
09072804-07A	EB-4-7/24/09	Aqueous
09072804-08A	TB-4-7/24/09	Aqueous

### Manually Integrated Analytes

Alpha's Sample ID	Test Reference	Analyte
09072804-01A	EPA Method 314.0	Perchlorate
09072804-02A	EPA Method 314.0	Perchlorate
09072804-03A	EPA Method 314.0	Perchlorate
09072804-04A	EPA Method 314.0	Perchlorate
09072804-05A	EPA Method 314.0	Perchlorate
09072804-06A	EPA Method 314.0	Perchlorate

Enclosed please find the analytical results of the samples received by Alpha Analytical, Inc. under the above mentioned Work Order/Chain-of-Custody.

Alpha Analytical, Inc. has a formal Quality Assurance/Quality Control program, which is designed to meet or exceed the EPA requirements. All relevant QC met quality assurance objectives for this project unless otherwise stated in the footnotes.

If you have any questions with regards to this report, please contact Randy Gardner, Project Manager, at (800) 283-1183.

*Roger Scholl*      *Randy Gardner*      *Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer

Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641  
Date Received : 07/28/09

Job#: G005862/JPL Groundwater Monitoring

Perchlorate by Ion Chromatography  
EPA Method 314.0

Parameter	Concentration	Reporting Limit	Date Sampled	Date Analyzed
Client ID : <b>MW-21-5</b> Lab ID : BMI09072804-01A Perchlorate	2.99	1.00 µg/L	07/24/09	07/29/09
Client ID : <b>MW-21-4</b> Lab ID : BMI09072804-02A Perchlorate	2.05	1.00 µg/L	07/24/09	07/29/09
Client ID : <b>MW-21-3</b> Lab ID : BMI09072804-03A Perchlorate	2.40	1.00 µg/L	07/24/09	07/29/09
Client ID : <b>MW-21-2</b> Lab ID : BMI09072804-04A Perchlorate	2.07	1.00 µg/L	07/24/09	07/29/09
Client ID : <b>MW-21-1</b> Lab ID : BMI09072804-05A Perchlorate	2.82	1.00 µg/L	07/24/09	07/29/09
Client ID : <b>DUPE-4-3Q09</b> Lab ID : BMI09072804-06A Perchlorate	2.70	1.00 µg/L	07/24/09	07/29/09
Client ID : <b>EB-4-7/24/09</b> Lab ID : BMI09072804-07A Perchlorate	ND	1.00 µg/L	07/24/09	07/29/09

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

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8/10/09

Report Date





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## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641  
Date Received : 07/28/09

Job#: G005862/JPL Groundwater Monitoring

Metals by ICPMS  
EPA Method 200.8

Parameter	Concentration	Reporting Limit	Date Sampled	Date Analyzed
Client ID : MW-21-5 Lab ID : BMI09072804-01A Chromium (Cr)	ND	0.0050 mg/L	07/24/09	08/10/09
Client ID : MW-21-4 Lab ID : BMI09072804-02A Chromium (Cr)	ND	0.0050 mg/L	07/24/09	08/10/09
Client ID : MW-21-3 Lab ID : BMI09072804-03A Chromium (Cr)	ND	0.0050 mg/L	07/24/09	08/10/09
Client ID : MW-21-2 Lab ID : BMI09072804-04A Chromium (Cr)	ND	0.0050 mg/L	07/24/09	08/10/09
Client ID : MW-21-1 Lab ID : BMI09072804-05A Chromium (Cr)	ND	0.0050 mg/L	07/24/09	08/10/09
Client ID : DUPE-4-3Q09 Lab ID : BMI09072804-06A Chromium (Cr)	ND	0.0050 mg/L	07/24/09	08/10/09
Client ID : EB-4-7/24/09 Lab ID : BMI09072804-07A Chromium (Cr)	ND	0.0050 mg/L	07/24/09	08/10/09

ND = Not Detected

*Roger Scholl*

*Randy Gardner*

*Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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*[Signature]*

8/10/09

Report Date



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## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

### Tentatively Identified Compounds - Volatile Organics by GC/MS

	Parameter	Estimated Concentration	Estimated Reporting Limit	Date Received	Date Sampled	Date Analyzed
Client ID : <b>MW-21-5</b> Lab ID : BMI09072804-01A	Sulfur dioxide	3.4	2.0 µg/L	07/28/09	07/24/09	07/30/09
Client ID : <b>MW-21-4</b> Lab ID : BMI09072804-02A	*** None Found ***	ND	2.0 µg/L	07/28/09	07/24/09	07/30/09
Client ID : <b>MW-21-3</b> Lab ID : BMI09072804-03A	*** None Found ***	ND	2.0 µg/L	07/28/09	07/24/09	07/30/09
Client ID : <b>MW-21-2</b> Lab ID : BMI09072804-04A	Chlorodifluoromethane	2.6	2.0 µg/L	07/28/09	07/24/09	07/30/09
Client ID : <b>MW-21-1</b> Lab ID : BMI09072804-05A	*** None Found ***	ND	2.0 µg/L	07/28/09	07/24/09	07/30/09
Client ID : <b>DUPE-4-3Q09</b> Lab ID : BMI09072804-06A	*** None Found ***	ND	2.0 µg/L	07/28/09	07/24/09	07/30/09
Client ID : <b>EB-4-7/24/09</b> Lab ID : BMI09072804-07A	2-Methyl-1-propene Tertiary Butyl Alcohol (TBA)	6.7 25	2.0 µg/L 10 µg/L	07/28/09 07/28/09	07/24/09 07/24/09	07/30/09 07/30/09
Client ID : <b>TB-4-7/24/09</b> Lab ID : BMI09072804-08A	*** None Found ***	ND	2.0 µg/L	07/28/09	07/24/09	07/30/09

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

8/10/09

**Report Date**

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Page 1 of 1



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072804-01A  
Client I.D. Number: MW-21-5

Sampled: 07/24/09  
Received: 07/28/09  
Analyzed: 07/30/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	4.1	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropane	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	89	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	108	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	97	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	1.9	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

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8/10/09

Report Date

Page 1 of 1



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072804-02A  
Client I.D. Number: MW-21-4

Sampled: 07/24/09  
Received: 07/28/09  
Analyzed: 07/30/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	7.2	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	93	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	108	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	97	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	1.6	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

8/10/09

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Report Date

Page 1 of 1



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072804-03A  
Client I.D. Number: MW-21-3

Sampled: 07/24/09  
Received: 07/28/09  
Analyzed: 07/30/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	0.82	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	1.8	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	0.93	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	89	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	107	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	99	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	4.3	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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8/10/09

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Page 1 of 1



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072804-04A  
Client I.D. Number: MW-21-2

Sampled: 07/24/09  
Received: 07/28/09  
Analyzed: 07/30/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	1.8	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	2.3	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	0.85	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	90	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	109	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	101	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	14	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

*Roger Scholl*

*Randy Gardner*

*Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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*[Signature]*

8/10/09

Report Date

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# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072804-05A  
Client I.D. Number: MW-21-1

Sampled: 07/24/09  
Received: 07/28/09  
Analyzed: 07/30/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	1.0	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropane	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	91	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	110	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	99	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

*Roger Scholl*

*Randy Gardner*

*Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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*[Signature]*

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# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072804-06A  
Client I.D. Number: DUPE-4-3Q09

Sampled: 07/24/09  
Received: 07/28/09  
Analyzed: 07/30/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	0.68	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	1.6	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	0.76	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	90	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	108	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	96	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	3.4	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

*Roger L. Scholl*

*Randy Gardner*

*Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072804-07A  
Client I.D. Number: EB-4-7/24/09

Sampled: 07/24/09  
Received: 07/28/09  
Analyzed: 07/30/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	88	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	106	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	102	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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# Alpha Analytical, Inc.

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## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072804-08A  
Client I.D. Number: TB-4-7/24/09

Sampled: 07/24/09  
Received: 07/28/09  
Analyzed: 07/30/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	88	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	106	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	104	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

8/10/09

Report Date

Page 1 of 1



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## VOC Sample Preservation Report

**Work Order:** BMI09072804

**Project:** G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	pH
09072804-01A	MW-21-5	Aqueous	2
09072804-02A	MW-21-4	Aqueous	2
09072804-03A	MW-21-3	Aqueous	2
09072804-04A	MW-21-2	Aqueous	2
09072804-05A	MW-21-1	Aqueous	2
09072804-06A	DUPE-4-3Q09	Aqueous	2
09072804-07A	EB-4-7/24/09	Aqueous	2
09072804-08A	TB-4-7/24/09	Aqueous	2

**8/10/09**  
**Report Date**



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:  
06-Aug-09

## QC Summary Report

Work Order:  
09072804

### Method Blank

File ID: 14	Type MBLK	Test Code: EPA Method 314.0	Batch ID: 22432	Analysis Date: 07/29/2009 12:55						
Sample ID: MB-22432	Units : µg/L	Run ID: IC_3_090729A	Prep Date: 07/29/2009							
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	ND	1								

### Laboratory Fortified Blank

File ID: 15	Type LFB	Test Code: EPA Method 314.0	Batch ID: 22432	Analysis Date: 07/29/2009 13:13						
Sample ID: LFB-22432	Units : µg/L	Run ID: IC_3_090729A	Prep Date: 07/29/2009							
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	23.4	2	25	93	85	115				

### Sample Matrix Spike

File ID: 23	Type LFM	Test Code: EPA Method 314.0	Batch ID: 22432	Analysis Date: 07/29/2009 15:41						
Sample ID: 09072442-04ALFM	Units : µg/L	Run ID: IC_3_090729A	Prep Date: 07/29/2009							
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	22.5	2	25	0	90	80	120			

### Sample Matrix Spike Duplicate

File ID: 24	Type LFMD	Test Code: EPA Method 314.0	Batch ID: 22432	Analysis Date: 07/29/2009 15:59						
Sample ID: 09072442-04ALFMD	Units : µg/L	Run ID: IC_3_090729A	Prep Date: 07/29/2009							
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	22.9	2	25	0	91	80	120	22.53	1.5(15)	

### Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



# Alpha Analytical, Inc.

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Date:  
11-Aug-09

## QC Summary Report

Work Order:  
09072804

### Method Blank

Method Blank		Type	Test Code: EPA Method 200.8							
File ID: 080809.B\093SMPL.D\			Batch ID: 22446K		Analysis Date: 08/10/2009 00:56					
Sample ID: MB-22446	Units : mg/L		Run ID: ICP/MS_090810A		Prep Date: 07/30/2009					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	ND	0.005								

### Laboratory Control Spike

Laboratory Control Spike		Type	Test Code: EPA Method 200.8							
File ID: 080809.B\094_LCS.D\			Batch ID: 22446K		Analysis Date: 08/10/2009 01:02					
Sample ID: LCS-22446	Units : mg/L		Run ID: ICP/MS_090810A		Prep Date: 07/30/2009					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.054	0.005	0.05		108	80	120			

### Sample Matrix Spike

Sample Matrix Spike		Type	Test Code: EPA Method 200.8							
File ID: 080809.B\098SMPL.D\			Batch ID: 22446K		Analysis Date: 08/10/2009 01:25					
Sample ID: 09072804-01AMS	Units : mg/L		Run ID: ICP/MS_090810A		Prep Date: 07/30/2009					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0454	0.005	0.05		0 91	80	120			

### Sample Matrix Spike Duplicate

Sample Matrix Spike Duplicate		Type	Test Code: EPA Method 200.8							
File ID: 080809.B\099SMPL.D\			Batch ID: 22446K		Analysis Date: 08/10/2009 01:30					
Sample ID: 09072804-01AMSD	Units : mg/L		Run ID: ICP/MS_090810A		Prep Date: 07/30/2009					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.045	0.005	0.05		0 90	80	120	0.0454	0.9(20)	

### Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



# Alpha Analytical, Inc.

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Date:  
10-Aug-09

## QC Summary Report

Work Order:  
09072804

### Method Blank

Type **MBLK** Test Code: \_\_\_\_\_

File ID: **09073008.D**

Batch ID: **MS15W0730M**

Analysis Date: **07/30/2009 11:30**

Sample ID: **MBLK MS15W0730M**

Units : **µg/L**

Run ID: **MSD\_15\_090730B**

Prep Date: **07/30/2009**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	ND	0.5								
Chloromethane	ND	1								
Vinyl chloride	ND	0.5								
Chloroethane	ND	0.5								
Bromomethane	ND	1								
Trichlorofluoromethane	ND	0.5								
1,1-Dichloroethene	ND	0.5								
Dichloromethane	ND	1								
Freon-113	ND	0.5								
trans-1,2-Dichloroethene	ND	0.5								
Methyl tert-butyl ether (MTBE)	ND	0.5								
1,1-Dichloroethane	ND	0.5								
2-Butanone (MEK)	ND	10								
cis-1,2-Dichloroethene	ND	0.5								
Bromochloromethane	ND	0.5								
Chloroform	ND	0.5								
2,2-Dichloropropane	ND	0.5								
1,2-Dichloroethane	ND	0.5								
1,1,1-Trichloroethane	ND	0.5								
1,1-Dichloropropene	ND	0.5								
Carbon tetrachloride	ND	0.5								
Benzene	ND	0.5								
Dibromomethane	ND	0.5								
1,2-Dichloropropane	ND	0.5								
Trichloroethene	ND	0.5								
Bromodichloromethane	ND	0.5								
4-Methyl-2-pentanone (MIBK)	ND	2.5								
cis-1,3-Dichloropropene	ND	0.5								
trans-1,3-Dichloropropene	ND	0.5								
1,1,2-Trichloroethane	ND	0.5								
Toluene	ND	0.5								
1,3-Dichloropropane	ND	0.5								
Dibromochloromethane	ND	0.5								
1,2-Dibromoethane (EDB)	ND	1								
Tetrachloroethene	ND	0.5								
1,1,1,2-Tetrachloroethane	ND	0.5								
Chlorobenzene	ND	0.5								
Ethylbenzene	ND	0.5								
m,p-Xylene	ND	0.5								
Bromoform	ND	0.5								
Styrene	ND	0.5								
o-Xylene	ND	0.5								
1,1,1,2,2-Tetrachloroethane	ND	0.5								
1,2,3-Trichloropropane	ND	1								
Isopropylbenzene	ND	0.5								
Bromobenzene	ND	0.5								
n-Propylbenzene	ND	0.5								
4-Chlorotoluene	ND	0.5								
2-Chlorotoluene	ND	0.5								
1,3,5-Trimethylbenzene	ND	0.5								
tert-Butylbenzene	ND	0.5								
1,2,4-Trimethylbenzene	ND	0.5								
sec-Butylbenzene	ND	0.5								
1,3-Dichlorobenzene	ND	0.5								
1,4-Dichlorobenzene	ND	0.5								
4-Isopropyltoluene	ND	0.5								
1,2-Dichlorobenzene	ND	0.5								
n-Butylbenzene	ND	0.5								
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5								
1,2,4-Trichlorobenzene	ND	1								
Naphthalene	ND	1								
Hexachlorobutadiene	ND	1								
1,2,3-Trichlorobenzene	ND	1								
Surr: 1,2-Dichloroethane-d4	9.16		10		92	70	130			
Surr: Toluene-d8	10.6		10		106	70	130			



# Alpha Analytical, Inc.

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Date:  
10-Aug-09

## QC Summary Report

Work Order:  
09072804

Surr: 4-Bromofluorobenzene 10.1 10 101 70 130

### Laboratory Control Spike

Type LCS

Test Code:

File ID: 09073006.D

Batch ID: MS15W0730M

Analysis Date: 07/30/2009 10:25

Sample ID: LCS MS15W0730M

Units: µg/L

Run ID: MSD\_15\_090730B

Prep Date: 07/30/2009

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	8.17	1	10		82	70	130			
Chloromethane	9.17	2	10		92	70	130			
Vinyl chloride	10.3	1	10		103	70	130			
Chloroethane	8.59	1	10		86	70	130			
Bromomethane	8.12	2	10		81	70	130			
Trichlorofluoromethane	10.5	1	10		105	70	130			
1,1-Dichloroethene	10.3	1	10		103	70	130			
Dichloromethane	9.87	2	10		99	70	130			
trans-1,2-Dichloroethene	11	1	10		110	70	130			
Methyl tert-butyl ether (MTBE)	10.3	0.5	10		103	70	130			
1,1-Dichloroethane	10.9	1	10		109	70	130			
cis-1,2-Dichloroethene	10.5	1	10		105	70	130			
Bromochloromethane	10.4	1	10		104	70	130			
Chloroform	10.4	1	10		104	70	130			
2,2-Dichloropropane	11.4	1	10		114	70	130			
1,2-Dichloroethane	9.6	1	10		96	70	130			
1,1,1-Trichloroethane	10.6	1	10		106	70	130			
1,1-Dichloropropene	11.1	1	10		111	70	130			
Carbon tetrachloride	10.6	1	10		106	70	130			
Benzene	10.8	0.5	10		108	70	130			
Dibromomethane	9.78	1	10		98	70	130			
1,2-Dichloropropane	11.5	1	10		115	70	130			
Trichloroethene	10.4	1	10		104	70	130			
Bromodichloromethane	9.61	1	10		96	70	130			
cis-1,3-Dichloropropene	9.7	1	10		97	70	130			
trans-1,3-Dichloropropene	9.44	1	10		94	70	130			
1,1,2-Trichloroethane	10.4	1	10		104	70	130			
Toluene	10	0.5	10		100	70	130			
1,3-Dichloropropane	10.3	1	10		103	70	130			
Dibromochloromethane	8.94	1	10		89	70	130			
1,2-Dibromoethane (EDB)	19.1	2	20		96	70	130			
Tetrachloroethene	9.82	1	10		98	70	130			
1,1,1,2-Tetrachloroethane	10	1	10		100	70	130			
Chlorobenzene	10	1	10		100	70	130			
Ethylbenzene	10.5	0.5	10		105	70	130			
m,p-Xylene	10.7	0.5	10		107	70	130			
Bromoform	7.9	1	10		79	70	130			
Styrene	7.33	1	10		73	70	130			
o-Xylene	10.7	0.5	10		107	70	130			
1,1,2,2-Tetrachloroethane	10.2	1	10		102	70	130			
1,2,3-Trichloropropane	19.5	2	20		98	70	130			
Isopropylbenzene	10.9	1	10		109	70	130			
Bromobenzene	9.73	1	10		97	70	130			
n-Propylbenzene	11	1	10		110	70	130			
4-Chlorotoluene	10.7	1	10		107	70	130			
2-Chlorotoluene	10.8	1	10		108	70	130			
1,3,5-Trimethylbenzene	10.6	1	10		106	70	130			
tert-Butylbenzene	10.4	1	10		104	70	130			
1,2,4-Trimethylbenzene	10.7	1	10		107	70	130			
sec-Butylbenzene	10.9	1	10		109	70	130			
1,3-Dichlorobenzene	10.3	1	10		103	70	130			
1,4-Dichlorobenzene	9.85	1	10		99	70	130			
4-Isopropyltoluene	10.9	1	10		109	70	130			
1,2-Dichlorobenzene	9.87	1	10		99	70	130			
n-Butylbenzene	12	1	10		120	70	130			
1,2-Dibromo-3-chloropropane (DBCP)	46.2	3	50		92	70	130			
1,2,4-Trichlorobenzene	9.11	2	10		91	70	130			
Naphthalene	9	2	10		90	70	130			
Hexachlorobutadiene	18.9	2	20		94	70	130			
1,2,3-Trichlorobenzene	9.05	2	10		91	70	130			
Surr: 1,2-Dichloroethane-d4	9.07		10		91	70	130			
Surr: Toluene-d8	10		10		100	70	130			
Surr: 4-Bromofluorobenzene	9.79		10		98	70	130			



# Alpha Analytical, Inc.

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Date:  
10-Aug-09

## QC Summary Report

Work Order:  
09072804

### Sample Matrix Spike

Type **MS**

Test Code: \_\_\_\_\_

File ID: **09073009.D**

Batch ID: **MS15W0730M**

Analysis Date: **07/30/2009 11:52**

Sample ID: **09072804-01AMS**

Units: **µg/L**

Run ID: **MSD\_15\_090730B**

Prep Date: **07/30/2009**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	56.5	2.5	50	0	113	13	167			
Chloromethane	52.9	10	50	0	106	28	145			
Vinyl chloride	59	2.5	50	0	118	43	134			
Chloroethane	44.7	2.5	50	0	89	39	154			
Bromomethane	42.6	10	50	0	85	19	176			
Trichlorofluoromethane	54.9	2.5	50	0	110	34	160			
1,1-Dichloroethene	50.1	2.5	50	0	100	60	130			
Dichloromethane	47.6	10	50	0	95	68	130			
trans-1,2-Dichloroethene	52.5	2.5	50	0	105	63	130			
Methyl tert-butyl ether (MTBE)	50	1.3	50	0	100	56	141			
1,1-Dichloroethane	52.2	2.5	50	0	104	61	130			
cis-1,2-Dichloroethene	51.3	2.5	50	0	103	70	130			
Bromochloromethane	50.6	2.5	50	0	101	70	130			
Chloroform	54.8	2.5	50	4.14	101	67	130			
2,2-Dichloropropane	51.1	2.5	50	0	102	30	152			
1,2-Dichloroethane	46.9	2.5	50	0	94	60	135			
1,1,1-Trichloroethane	50.4	2.5	50	0	101	59	137			
1,1-Dichloropropene	52.6	2.5	50	0	105	63	130			
Carbon tetrachloride	50.5	2.5	50	0	101	50	147			
Benzene	52	1.3	50	0	104	67	130			
Dibromomethane	48.3	2.5	50	0	97	69	133			
1,2-Dichloropropane	54.3	2.5	50	0	109	69	130			
Trichloroethene	50.2	2.5	50	0	100	69	130			
Bromodichloromethane	45.8	2.5	50	0	92	66	134			
cis-1,3-Dichloropropene	44.9	2.5	50	0	90	63	130			
trans-1,3-Dichloropropene	43.6	2.5	50	0	87	66	131			
1,1,2-Trichloroethane	50.6	2.5	50	0	101	68	130			
Toluene	48.6	1.3	50	0	97	66	130			
1,3-Dichloropropane	50.5	2.5	50	0	101	70	130			
Dibromochloromethane	43.7	2.5	50	0	87	70	130			
1,2-Dibromoethane (EDB)	93.7	10	100	0	94	70	130			
Tetrachloroethene	48	2.5	50	1.91	92	61	134			
1,1,1,2-Tetrachloroethane	48.6	2.5	50	0	97	70	130			
Chlorobenzene	48.4	2.5	50	0	97	70	130			
Ethylbenzene	49.9	1.3	50	0	99.7	68	130			
m,p-Xylene	51.5	1.3	50	0	103	64	130			
Bromoform	37.7	2.5	50	0	75	64	138			
Styrene	34.8	2.5	50	0	70	69	130			
o-Xylene	51.6	1.3	50	0	103	70	130			
1,1,2,2-Tetrachloroethane	50.4	2.5	50	0	101	65	131			
1,2,3-Trichloropropane	95.5	10	100	0	96	70	130			
Isopropylbenzene	52.1	2.5	50	0	104	64	138			
Bromobenzene	47.3	2.5	50	0	95	70	130			
n-Propylbenzene	51.5	2.5	50	0	103	66	132			
4-Chlorotoluene	51.7	2.5	50	0	103	70	130			
2-Chlorotoluene	51.3	2.5	50	0	103	70	130			
1,3,5-Trimethylbenzene	50.3	2.5	50	0	101	66	136			
tert-Butylbenzene	49.4	2.5	50	0	99	65	137			
1,2,4-Trimethylbenzene	51.1	2.5	50	0	102	65	137			
sec-Butylbenzene	51.5	2.5	50	0	103	66	134			
1,3-Dichlorobenzene	49.4	2.5	50	0	99	70	130			
1,4-Dichlorobenzene	47.1	2.5	50	0	94	70	130			
4-Isopropyltoluene	51.3	2.5	50	0	103	66	137			
1,2-Dichlorobenzene	47.7	2.5	50	0	95	70	130			
n-Butylbenzene	56.2	2.5	50	0	112	60	142			
1,2-Dibromo-3-chloropropane (DBCP)	225	15	250	0	90	67	130			
1,2,4-Trichlorobenzene	41.8	10	50	0	84	61	137			
Naphthalene	39.3	10	50	0	79	40	167			
Hexachlorobutadiene	85.5	10	100	0	86	61	130			
1,2,3-Trichlorobenzene	39.4	10	50	0	79	51	144			
Surr: 1,2-Dichloroethane-d4	44		50		88	70	130			
Surr: Toluene-d8	50.6		50		101	70	130			
Surr: 4-Bromofluorobenzene	48.7		50		97	70	130			







# *Alpha Analytical, Inc.*

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

---

**Date:**

10-Aug-09

## QC Summary Report

**Work Order:**

09072804

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**Comments:**

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

**Billing Information :**

**CHAIN-OF-CUSTODY RECORD**

**CA AMENDED**

**Alpha Analytical, Inc.**  
 255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778  
 TEL: (775) 355-1044 FAX: (775) 355-0406

**WorkOrder : BMIS09072804**  
**Report Due By : 5:00 PM On : 11-Aug-2009**

**Client:**  
 Battelle Memorial Institute  
 3990 Old Town Ave  
 Suite C-205  
 San Diego, CA 92110

**Report Attention**    **Phone Number**    **Email Address**  
 David Conner    (818) 393-2808    x    connerd@battelle.org  
 Betsy Cutie    (614) 424-4899    x    cutiee@battelle.org  
 Shane Walton    (614) 424-4117    x    waltons@battelle.org

EDD Required : No

Sampled by : Client

Cooler Temp    Samples Received

4 °C    28-Jul-2009    04-Aug-2009

PO : 218013  
 Client's COC # : 25746    Job : G005862/JPL Groundwater Monitoring  
 QC Level : DS4 = DOD QC Required : Final Rpt, MBLK, Initial/Concal data, LCS, MS/MSD with Surrogates

Alpha Sample ID	Client Sample ID	Collection Matrix Date	No. of Bottles Alpha Sub TAT	Requested Tests			Sample Remarks
				314_W	METALS_D W	VOC_TIC_W	
BM109072804-01A	NW-21-5	AQ 07/24/09 07:20	5 0 10	Perchlorate	Cr	VOC by 524 Criteria	Level IV QC.
BM109072804-02A	NW-21-4	AQ 07/24/09 07:43	5 0 10	Perchlorate	Cr	VOC by 524 Criteria	
BM109072804-03A	NW-21-3	AQ 07/24/09 08:18	5 0 10	Perchlorate	Cr	VOC by 524 Criteria	
BM109072804-04A	NW-21-2	AQ 07/24/09 08:40	5 0 10	Perchlorate	Cr	VOC by 524 Criteria	
BM109072804-05A	NW-21-1	AQ 07/24/09 09:05	5 0 10	Perchlorate	Cr	VOC by 524 Criteria	
BM109072804-06A	DUPE-4-3Q09	AQ 07/24/09 00:00	5 0 10	Perchlorate	Cr	VOC by 524 Criteria	
BM109072804-07A	EB-4-7/24/09	AQ 07/24/09 08:52	5 0 10	Perchlorate	Cr	VOC by 524 Criteria	
BM109072804-08A	TB-4-7/24/09	AQ 07/24/09 00:00	1 0 10				Reno Trip Blank 3/16/09

**Comments:** No security seals. Frozen ice. Temp Blank #7356 received @ 4°C. Perchlorate RL of 1.0 ug/L. Level IV QC. Samples should be used as the control spike sample if possible. (I.E.: MS/MSD).  
 Amended 8/4/09 @ 7:47. Changed amount of sample bottles : to 1 voa for sample -08A due to login error. EA

Logged in by: Elizabeth Adcox    Signature: [Signature]    Print Name: Elizabeth Adcox    Company: Alpha Analytical, Inc.    Date/Time: 8-4-09 7:47

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.  
 The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report.  
 Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other)    Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

**Billing Information :**

**CHAIN-OF-CUSTODY RECORD**

**Alpha Analytical, Inc.**  
 255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778  
 TEL: (775) 355-1044 FAX: (775) 355-0406

**CA**

**WorkOrder : BMIS09072804**  
**Report Due By : 5:00 PM On : 11-Aug-2009**

**Client:** Battelle Memorial Institute  
 3990 Old Town Ave  
 Suite C-205  
 San Diego, CA 92110  
 PO : 218013

**Report Attention** Phone Number Email Address  
 David Conner (818) 393-2808 x connerd@battelle.org  
 Betsy Cutie (614) 424-4899 x cutiee@battelle.org  
 Shane Walton (614) 424-4117 x waltons@battelle.org

Client's COC #: 25746 Job : G005862/JPL Groundwater Monitoring

QC Level : DS4 = DOD QC Required : Final Rpt, MBLK, Initial/ConCal data, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Collection Date	No. of Bottles Alpha Sub	TAT	Requested Tests				Sample Remarks	
					314_W	METALS_D W	VOC_TIC_W	VOC_W		
BMIO9072804-01A	MW-21-5	AQ 07/24/09 07:20	5	0	10	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	Level IV QC.
BMIO9072804-02A	MW-21-4	AQ 07/24/09 07:43	5	0	10	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BMIO9072804-03A	MW-21-3	AQ 07/24/09 08:18	5	0	10	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BMIO9072804-04A	MW-21-2	AQ 07/24/09 08:40	5	0	10	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BMIO9072804-05A	MW-21-1	AQ 07/24/09 09:05	5	0	10	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BMIO9072804-06A	DUPE-4-3Q09	AQ 07/24/09 00:00	5	0	10	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BMIO9072804-07A	EB-4-7/24/09	AQ 07/24/09 08:52	5	0	10	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BMIO9072804-08A	TB-4-7/24/09	AQ 07/24/09 00:00	5	0	10					Reno Trip Blank 3/16/09

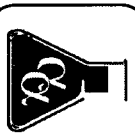
**Comments:** No security seals. Frozen ice. Temp Blank #7356 received @ 4°C. Perchlorate RL of 1.0 ug/L. Level IV QC. Samples should be used as the control spike sample if possible (I.E. MS/MSD).

Logged in by: Elizabeth Decox Signature Elizabeth Decox Print Name Elizabeth Decox Company Alpha Analytical, Inc. Date/Time 7:28:09 11/4/2

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report. Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Lier V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

**Billing Information:**

Name GERARD TOMPKINS/BATTELLE  
 Address 505 KING AVE  
 City, State, Zip COLUMBUS, OH 43201  
 Phone Number \_\_\_\_\_ Fax \_\_\_\_\_



**Alpha Analytical, Inc.**  
 255 Glendale Avenue, Suite 21  
 Sparks, Nevada 89431-5778  
 Phone (775) 355-1044  
 Fax (775) 355-0406

**Samples Collected From Which State?** 25746  
 AZ  CA  NV  WA   
 ID  OR  OTHER   
 Page # 1 of 1

Analyses Required

Required QC Level?  
 I  II  III  IV

EDD / EDF? YES  NO

Global ID # \_\_\_\_\_

REMARKS

Client Name	Address	City, State, Zip	PO #	Job #	Phone #	Sample Description	TAT	Field Filtered	Total and type of containers	Global ID #	REMARKS
BATTELLE	DAVID COWEN	3990 OLD TOWN AVE., #205 SAN DIEGO CA 92110	218013	9005862	(619) 726-7311	MW-21-5	Normal		VP / 5		LEVEL IV QC
720	7/24/09	AG	BMT09072804-01			MW-21-4					
743						MW-21-3					
818						MW-21-2					
840						MW-21-1					
905											
—						DOE - 4 - 3009					DUPLICATE
852						ERS - 4 - 7/24/09					EQUIP. BLANK
—						TRB - 4 - 7/24/09			V 1/2		TARP BLANK

**ADDITIONAL INSTRUCTIONS:**

Signature	Print Name	Company	Date	Time
<i>[Signature]</i>	MARCO MENDOZA	INSIGHT EEC	7/27/09	1230
<i>[Signature]</i>	Elizabeth Alder	Alpha	7.28.09	1142
Received by				
Relinquished by				
Received by				
Relinquished by				
Received by				

\*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other AR - Air \*\* - L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other  
 NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report.



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date: 10-Aug-09

David Conner  
Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
(818) 393-2808

Suite C-205

## CASE NARRATIVE

Project: G005862/JPL Groundwater Monitoring

Work Order: BMI09072805

Cooler Temp: 4 °C

Alpha's Sample ID	Client's Sample ID	Matrix
09072805-01A	MW-20-5	Aqueous
09072805-02A	MW-20-4	Aqueous
09072805-03A	MW-20-3	Aqueous
09072805-04A	MW-20-2	Aqueous
09072805-05A	MW-20-1	Aqueous
09072805-06A	DUPE-5-3Q09	Aqueous
09072805-07A	EB-5-7/27/09	Aqueous
09072805-08A	TB-5-7/27/09	Aqueous

### Manually Integrated Analytes

<u>Alpha's Sample ID</u>	<u>Test Reference</u>	<u>Analyte</u>
09072805-04A	EPA Method 314.0	Perchlorate

Enclosed please find the analytical results of the samples received by Alpha Analytical, Inc. under the above mentioned Work Order/Chain-of-Custody.

Alpha Analytical, Inc. has a formal Quality Assurance/Quality Control program, which is designed to meet or exceed the EPA requirements. All relevant QC met quality assurance objectives for this project unless otherwise stated in the footnotes.

If you have any questions with regards to this report, please contact Randy Gardner, Project Manager, at (800) 283-1183.

*Roger Scholl*

*Randy Gardner*

*Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer

Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641  
Date Received : 07/28/09

Job#: G005862/JPL Groundwater Monitoring

Perchlorate by Ion Chromatography  
EPA Method 314.0

Parameter	Concentration	Reporting Limit	Date Sampled	Date Analyzed
Client ID : <b>MW-20-5</b> Lab ID : BMI09072805-01A Perchlorate	ND	1.00 µg/L	07/27/09	07/31/09
Client ID : <b>MW-20-4</b> Lab ID : BMI09072805-02A Perchlorate	ND	1.00 µg/L	07/27/09	07/31/09
Client ID : <b>MW-20-3</b> Lab ID : BMI09072805-03A Perchlorate	ND	1.00 µg/L	07/27/09	07/31/09
Client ID : <b>MW-20-2</b> Lab ID : BMI09072805-04A Perchlorate	2.16	1.00 µg/L	07/27/09	07/31/09
Client ID : <b>MW-20-1</b> Lab ID : BMI09072805-05A Perchlorate	ND	1.00 µg/L	07/27/09	07/31/09
Client ID : <b>DUPE-5-3Q09</b> Lab ID : BMI09072805-06A Perchlorate	ND	1.00 µg/L	07/27/09	07/31/09
Client ID : <b>EB-5-7/27/09</b> Lab ID : BMI09072805-07A Perchlorate	ND	1.00 µg/L	07/27/09	07/31/09

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

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8/10/09

Report Date



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641  
Date Received : 07/28/09

Job#: G005862/JPL Groundwater Monitoring

Metals by ICPMS  
EPA Method 200.8

Parameter	Concentration	Reporting Limit	Date Sampled	Date Analyzed
Client ID: MW-20-5 Lab ID: BMI09072805-01A Chromium (Cr)	ND	0.0050 mg/L	07/27/09	08/10/09
Client ID: MW-20-4 Lab ID: BMI09072805-02A Chromium (Cr)	ND	0.0050 mg/L	07/27/09	08/10/09
Client ID: MW-20-3 Lab ID: BMI09072805-03A Chromium (Cr)	ND	0.0050 mg/L	07/27/09	08/10/09
Client ID: MW-20-2 Lab ID: BMI09072805-04A Chromium (Cr)	ND	0.0050 mg/L	07/27/09	08/10/09
Client ID: MW-20-1 Lab ID: BMI09072805-05A Chromium (Cr)	ND	0.0050 mg/L	07/27/09	08/10/09
Client ID: DUPE-5-3Q09 Lab ID: BMI09072805-06A Chromium (Cr)	ND	0.0050 mg/L	07/27/09	08/10/09
Client ID: EB-5-7/27/09 Lab ID: BMI09072805-07A Chromium (Cr)	ND	0.0050 mg/L	07/27/09	08/10/09

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

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8/10/09

Report Date





# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

### Tentatively Identified Compounds - Volatile Organics by GC/MS

Client ID :	Lab ID :	Parameter	Estimated Concentration	Estimated Reporting Limit	Date Received	Date Sampled	Date Analyzed
MW-20-5	BMI09072805-01A	Sulfur dioxide	43	2.0 µg/L	07/28/09	07/27/09	07/30/09
MW-20-4	BMI09072805-02A	Sulfur dioxide	25	2.0 µg/L	07/28/09	07/27/09	07/30/09
MW-20-3	BMI09072805-03A	Sulfur dioxide	22	2.0 µg/L	07/28/09	07/27/09	07/30/09
MW-20-2	BMI09072805-04A	Sulfur dioxide	4.7	2.0 µg/L	07/28/09	07/27/09	07/30/09
MW-20-1	BMI09072805-05A	Sulfur dioxide	14	2.0 µg/L	07/28/09	07/27/09	07/30/09
DUPE-5-3Q09	BMI09072805-06A	Sulfur dioxide	21	2.0 µg/L	07/28/09	07/27/09	07/30/09
EB-5-7/27/09	BMI09072805-07A	2-Methyl-1-propene	13	2.0 µg/L	07/28/09	07/27/09	07/31/09
		Tertiary Butyl Alcohol (TBA)	25	10 µg/L	07/28/09	07/27/09	07/31/09
TB-5-7/27/09	BMI09072805-08A	*** None Found ***	ND	2.0 µg/L	07/28/09	07/27/09	07/30/09

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

8/10/09

Report Date

Page 1 of 1



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072805-01A  
Client I.D. Number: MW-20-5

Sampled: 07/27/09  
Received: 07/28/09  
Analyzed: 07/30/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	97	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	104	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	100	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinckman, Quality Assurance Officer

Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

8/10/09

Report Date

Page 1 of 1



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072805-02A  
Client I.D. Number: MW-20-4

Sampled: 07/27/09  
Received: 07/28/09  
Analyzed: 07/30/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
6 Trichlorofluoromethane	ND	0.50 µg/L	41 Styrene	ND	0.50 µg/L
7 1,1-Dichloroethene	ND	0.50 µg/L	42 o-Xylene	ND	0.50 µg/L
8 Dichloromethane	ND	1.0 µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50 µg/L
9 Freon-113	ND	0.50 µg/L	44 1,2,3-Trichloropropane	ND	1.0 µg/L
10 trans-1,2-Dichloroethene	ND	0.50 µg/L	45 Isopropylbenzene	ND	0.50 µg/L
11 Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	46 Bromobenzene	ND	0.50 µg/L
12 1,1-Dichloroethane	ND	0.50 µg/L	47 n-Propylbenzene	ND	0.50 µg/L
13 2-Butanone (MEK)	ND	10 µg/L	48 4-Chlorotoluene	ND	0.50 µg/L
14 cis-1,2-Dichloroethene	ND	0.50 µg/L	49 2-Chlorotoluene	ND	0.50 µg/L
15 Bromochloromethane	ND	0.50 µg/L	50 1,3,5-Trimethylbenzene	ND	0.50 µg/L
16 Chloroform	ND	0.50 µg/L	51 tert-Butylbenzene	ND	0.50 µg/L
17 2,2-Dichloropropane	ND	0.50 µg/L	52 1,2,4-Trimethylbenzene	ND	0.50 µg/L
18 1,2-Dichloroethane	ND	0.50 µg/L	53 sec-Butylbenzene	ND	0.50 µg/L
19 1,1,1-Trichloroethane	ND	0.50 µg/L	54 1,3-Dichlorobenzene	ND	0.50 µg/L
20 1,1-Dichloropropene	ND	0.50 µg/L	55 1,4-Dichlorobenzene	ND	0.50 µg/L
21 Carbon tetrachloride	ND	0.50 µg/L	56 4-Isopropyltoluene	ND	0.50 µg/L
22 Benzene	ND	0.50 µg/L	57 1,2-Dichlorobenzene	ND	0.50 µg/L
23 Dibromomethane	ND	0.50 µg/L	58 n-Butylbenzene	ND	0.50 µg/L
24 1,2-Dichloropropane	ND	0.50 µg/L	59 1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	2.0 µg/L
27 4-Methyl-2-pentanone (MIBK)	ND	2.5 µg/L	62 Hexachlorobutadiene	ND	1.0 µg/L
28 cis-1,3-Dichloropropene	ND	0.50 µg/L	63 1,2,3-Trichlorobenzene	ND	1.0 µg/L
29 trans-1,3-Dichloropropene	ND	0.50 µg/L	64 Surr: 1,2-Dichloroethane-d4	91	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	105	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	100	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

8/10/09

Report Date

Page 1 of 1



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
3990 Old Town Ave  
San Diego, CA 92110  
Job#: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (818) 393-2808  
Fax: (614) 458-6641

Alpha Analytical Number: BMI09072805-03A  
Client I.D. Number: MW-20-3

Sampled: 07/27/09  
Received: 07/28/09  
Analyzed: 07/30/09

### Volatile Organics by GC/MS

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Dichlorodifluoromethane	ND	0.50 µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50 µg/L
2 Chloromethane	ND	1.0 µg/L	37 Chlorobenzene	ND	0.50 µg/L
3 Vinyl chloride	ND	0.50 µg/L	38 Ethylbenzene	ND	0.50 µg/L
4 Chloroethane	ND	0.50 µg/L	39 m,p-Xylene	ND	0.50 µg/L
5 Bromomethane	ND	1.0 µg/L	40 Bromoform	ND	0.50 µg/L
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30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	106	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	102	(70-130) %REC
32 1,3-Dichloropropane	ND	0.50 µg/L			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

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Page 1 of 1