

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** Attn: David Conner 3990 Old Town Ave (818) 393-2808 Phone: San Diego, CA 92110 (614) 458-6641 Fax: G005862/JPL Groundwater Monitoring Alpha Analytical Number: BMI09072805-04A Sampled: 07/27/09 Received: 07/28/09

Client I.D. Number: MW-20-2

Job#:

Volatile Organics by GC/MS

Analyzed: 07/30/09

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting Li	imit
1	Dichlorodifluoromethane	ND	0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	ug/L
2	Chloromethane	ND	1.0	ug/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-Butvibenzene	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 (DBCI	P) 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	97	(70-130)	%REC
32	1,3-Dichloropropane	ND	0.50	µg/L			1	, ,	-
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

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

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

8/10/09

Report Date

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 Job#: G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI09072805-05A Client I.D. Number: MW-20-1

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

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

Analyzed: 07/30/09

Volatile Organics by GC/MS

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting Li	imit
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-Xvlene	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 (DBC	P) 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-Bromofluorobenzerie	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

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Kanda Sauluer

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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 G005862/JPL Groundwater Monitoring Job#:

Alpha Analytical Number: BMI09072805-06A Client I.D. Number: DUPE-5-3Q09

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

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

Analyzed: 07/30/09

Volatile Organics by GC/MS

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting L	imit
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-Xvlene	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-Xvlene	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-Butvibenzene	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 (DBC		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	98	(70-130)	%REC
32	1,3-Dichloropropane	ND	0.50	µg/L	00			(10 100)	
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

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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

Alpha Analytical Number: BMI09072805-07A Client I.D. Number: EB-5-7/27/09

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

Sampled: 07/27/09 Received: 07/28/09 Analyzed: 07/31/09

Volatile Organics by GC/MS

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting L	imit
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	µq/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-Xvlene	ND	0.50	µg/L
8	Dichloromethane	1.2	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
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25	Trichloroethene	ND	0.50	µg/L	60	1,2,4-Trichlorobenzene	ND	1.0	µg/L
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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

Alpha Analytical Number: BMI09072805-08A Client I.D. Number: TB-5-7/27/09 Attn:David ConnerPhone:(818) 393-2808Fax:(614) 458-6641

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

Volatile Organics by GC/MS

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting Li	imit
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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-Xvlene	ND	0.50	µg/L
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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 (DBC	P) 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	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 Scholl

Kandy Sandmer

Dalter Arihum

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



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: BMI09072805

Project: G005862/JPL Groundwater Monitoring

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



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Date: 10-Aug-09		(QC S	Sur	nmar	y Repor	t				Work Ord 0907280	-
Method Blan File ID: 14	ık		Туре	ΜВΙ		est Code: El atch ID: 224		thod 314.0		sis Date:	07/31/2009 13:17	
Sample ID:	MB-22449	Units : µg/L		Rı	un ID: IC	_3_090731	4		Prep	Date:	07/31/2009	
Analyte		Result	PQL		SpkVal	SpkRefVal	%REC	CLCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qua
Perchlorate		ND		1								
	Fortified Blank		Туре	LFB		est Code: El		thod 314.0				
File ID: 15 Sample ID:	LFB-22449	Units : µg/L		Rı		atch ID: 224 _3_090731/			Analy Prep∣		07/31/2009 13:35 07/31/2009	
Analyte		Result	PQL	_	SpkVal	SpkRefVal	%REC	CLCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qua
Perchlorate		23.5		2	25		94	85	115			
Sample Matr File ID: 18	rix Spike		Туре	LFN		est Code: El atch ID: 224		thod 314.0		sis Date:	07/31/2009 14:30	
Sample ID:	09073122-08ALFM	Units : µg/L		Ru		_3_090731/			Prep		07/31/2009	
Analyte		Result	PQL		SpkVal	SpkRefVal	%REC	CLCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qual
Perchlorate		22.8		2	25	0	91	80	120			
	ix Spike Duplicate		Туре	LFN		est Code: El		thod 314.0			· · · ·	
File ID: 19						atch ID: 224					07/31/2009 14:49	
•	09073122-08ALFMD	Units : µg/L		Rı	ın ID: IC	_3_090731	4		Prep	Date:	07/31/2009	
Analyte		Result	PQL		SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qua
Perchlorate		23.6		2	25	0	94	80	120	22.8	1 3.3(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: 11-Aug-09	(QC S	ummar	y Repor	t				Work Orde 09072805	
Method Blank File ID: 080809.B\093SMPL.D\ Sample ID: MB-22446	Units : mg/L	Туре N	B	est Code: EF atch ID: 2244 P/MS_0908	46K	hod 200.8	Analy Prep l		08/10/2009 00:56 07/30/2009	
Analyte	Result	PQL				LCL(ME)	•		Val %RPD(Limit)	Qual
Chromium (Cr)	ND	0.005					· · · ·			
Laboratory Control Spike File ID: 080809.B\094_LCS.D\		Type L	B	est Code: EF atch ID: 2244	16K	hod 200.8			08/10/2009 01:02	
Sample ID: LCS-22446 Analyte	Units : mg/L Result	PQL		P/MS_0908 SpkRefVal		LCL(ME)	Prep I UCL(ME)		07/30/2009 Val %RPD(Limit)	Qual
Chromium (Cr)	0.054	0.005	5 0.05		108	80	120			
Sample Matrix Spike File ID: 080809.B\098SMPL.D\ Sample ID: 09072804-01AMS Analyte	Units : mg/L Result	Type N	Ban ID: IC	est Code: EF atch ID: 2244 P/MS_0908	16K 10A		Analy Prep l	Date:	08/10/2009 01:25 07/30/2009 Val %RPD(Limit)	Qual
Chromium (Cr)	0.0454	0:005		оркнегуаг		80	120		val /or in D(Linne)	
Sample Matrix Spike Duplicate File ID: 080809.B\099SMPL.D\		Туре М	ASD T	est Code: El	46K	hod 200.8	. ,		08/10/2009 01:30	
Sample ID: 09072804-01AMSD Analyte	Units : mg/L Result	PQL		P/MS_0908 ⁻ SpkBefVal		LCL(MF)	Prep I UCL(ME)		07/30/2009 Val %RPD(Limit)	Qual
Chromium (Cr)	0.045	0.005		0	90	80	120	0.045		

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.



Date: 06-Aug-09		(Work Order: 09072805								
Method Bla			Туре М	IBLK	Test Code:						
File ID: 09073					Batch ID: MS1		M	-		07/30/2009 11:30	
Sample ID:	MBLK MS15W0730M	Units : µg/L			: MSD_15_0907			Prep Dat		07/30/2009	
Analyte	· · · · · · · · · · · · · · · · · · ·	Result	PQL	Spk\	/al SpkRefVal	%REC I	_CL(ME)	UCL(ME) RP	DRef∖	/al %RPD(Limit)	Qua
Dichlorodifluor		ND	0.5								
Chloromethan Vinyl chloride	e	ND	1								
Chloroethane		ND ND	0.5 0.5								
Bromomethan	e	ND	0.5								
Trichlorofluoro		ND	0.5								
1,1-Dichloroet		ND	0.5								
Dichlorometha	ane	ND	1								
Freon-113	la ra ath an a	ND	0.5								
trans-1,2-Dich	tyl ether (MTBE)	ND ND	0.5 0.5								
1,1-Dichloroet		ND	0.5								
2-Butanone (M		ND	10								
cis-1,2-Dichlor	roethene	ND	0.5								
Bromochlorom	nethane	ND	0.5								
Chloroform	20220	ND	0.5								
2,2-Dichloropr 1,2-Dichloroet	-	ND ND	0.5 0.5								
1,1,1-Trichloro		ND	0.5								
1,1-Dichloropr		ND	0.5								
Carbon tetrach	nloride	ND	0.5								
Benzene		ND	0.5								
Dibromometha	-	ND	0.5								
1,2-Dichloropr Trichloroethen	•	ND ND	0.5								
Bromodichloro		ND	0.5 0.5								
	ntanone (MIBK)	ND	2.5								
cis-1,3-Dichlor		ND	0.5								
trans-1,3-Dich		ND	0.5								
1,1,2-Trichloro Toluene	bethane	ND	0.5								
1,3-Dichloropr	onane	·ND ND	0.5 0.5								
Dibromochloro	•	ND	0.5								
1,2-Dibromoet		ND	1								
Tetrachloroeth		ND	0.5								
1,1,1,2-Tetracl		ND	0.5								
Chlorobenzen	e	ND	0.5								
Ethylbenzene m,p-Xylene		ND ND	0.5 0.5								
Bromoform		ND	0.5								
Styrene		ND	0.5								
o-Xylene		ND	0.5								
1,1,2,2-Tetracl		ND	0.5								
1,2,3-Trichloro Isopropylbenze	• •	ND	1								
Bromobenzen		ND ND	0.5 0.5								
n-Propylbenze		ND	0.5								
4-Chlorotoluer		ND	0.5								
2-Chlorotoluer		ND	0.5								
1,3,5-Trimethy		ND	0.5								
tert-Butylbenze 1,2,4-Trimethy		ND	0.5								
sec-Butylbenz		ND ND	0.5 0.5								
1,3-Dichlorobe		ND	0.5								
1,4-Dichlorobe		ND	0.5								
4-Isopropyltolu		ND	0.5								
1,2-Dichlorobe		ND	0.5								
n-Butylbenzen	e -chloropropane (DBCP)	ND	0.5								
1,2-Dibromo-3		ND ND	2.5								
Naphthalene		ND	1								
Hexachlorobut	adiene	ND	1								
1,2,3-Trichloro		ND	1								
Surr: 1,2-Dichl Surr: Toluene-		9.16			10	92	70	130			
	110	10.6			10	106	70	130			



Date: 06-Aug-09	(QC Su	ımmar	y Report			Work Ord 09072803	
Surr: 4-Bromofluorobenzene	10.1		10	101	70	130		
Laboratory Control Spike		Type L(est Code:				
File ID: 09073006.D				atch ID: MS15W07	30M	•	07/30/2009 10:25	
Sample ID: LCS MS15W0730M	Units : µg/L			SD_15_090730B		Prep Date:	07/30/2009	
Analyte	Result	PQL	SpkVal	SpkRefVal %REC	CLCL(ME)	UCL(ME) RPDRef	Val %RPD(Limit)	Qual
Dichlorodifluoromethane	8.17	1	10	82	70	130		
Chloromethane	9.17	2	10	92	70	130		
Vinyl chloride Chloroethane	10.3	1	10	103	70	130		
Bromomethane	8.59 8.12	1 2	10 10	86 81	70 70	130 130		
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 cis-1,2-Dichloroethene	10.9 10.5	1 1	10 10	109 105	70 70	130 130		
Bromochloromethane	10.5	1	10	103	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 Carbon tetrachloride	11.1 10.6	1 1	10 10	111 106	70 70	130 130		
Benzene	10.8	0.5	10	108	70	130		
Dibromomethane	9.78	0.0	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 trans-1,3-Dichloropropene	9.7	1	10	97 94	70 70	130 130		
1,1,2-Trichloroethane	9.44 10.4	1 1	10 10	94 104	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 1,1,1,2-Tetrachloroethane	9.82 10	1	10 10	98 100	70 70	130 130		
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 1,1,2,2-Tetrachloroethane	10.7 10.2	0.5	10	107 102	70 70	130 130		
1,2,3-Trichloropropane	19.5	1	10 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 2-Chlorotoluene	10.7	1	10	107	70	130		
1,3,5-Trimethylbenzene	10.8 10.6	1	10 10	108 106	70 70	130 130		
tert-Butylbenzene	10.6	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 1,2-Dichlorobenzene	10.9 9.87	1 1	10 10	109 99	70 70	130 130		
n-Butylbenzene	9.87	1	10	99 120	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 1,2,3-Trichlorobenzene	18.9	2	20	94	70 70	130		
Surr: 1,2-Dichloroethane-d4	9.05 9.07	2	10 10	91 91	70 70	130 130		
Surr: Toluene-d8	9.07 10		10	100	70	130		
Surr: 4-Bromofluorobenzene	9.79		10	98	70	130		



1.144

Alpha Analytical, Inc.

Date: 06-Aug-09	(<u>QC</u> Su	mmar	y Repor			Work Ord 0907280		
Sample Matrix Spike		Туре М	S Te	est Code: _					
File ID: 09073009.D			Ba	atch ID: MS	1 5W 07:	30M	Analysis Dat	e: 07/30/2009 11:52	
Sample ID: 09072804-01AMS	Units : µg/L	F	Run ID: M	SD_15_090	730B		Prep Date:	07/30/2009	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME) UCL(ME) RPDR	efVal %RPD(Limit)	Qu
Dichlorodifluoromethane	56.5	2.5	50	0	113	13	167		
Chloromethane	52.9	10	50	0	106	28	145		
Vinyl chloride Chloroethane	59	2.5	50	0	118	43	134		
Bromomethane	44.7 42.6	2.5 10	50 50	0	89 85	39 19	154 176		
Trichlorofluoromethane	54.9	2.5	50	0	110	34	160		
1,1-Dichloroethene	50.1	2.5	50	Ō	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) 1,1-Dichloroethane	50 52.2	1.3 2.5	50 50	0	100 104	56 61	141 130		
cis-1,2-Dichloroethene	51.3	2.5	50	0	104	70	130		
Bromochloromethane	50.6	2.5	50	õ	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 1,1,1-Trichloroethane	46.9 50.4	2.5	50	0	94 101	60 59	135 137		
1,1-Dichloropropene	50.4 52.6	2.5 2.5	50 50	0	101	59 63	137 130		
Carbon tetrachloride	50.5	2.5	50 50	0	105	50	130		
Benzene	52	1.3	50	Ō	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 Bromodichloromethane	50.2	2.5	50	0	100	69 66	130		
cis-1,3-Dichloropropene	45.8 44.9	2.5 2.5	50 50	0	92 90	66 63	134 130		
trans-1,3-Dichloropropene	43.6	2.5	50	ő	87	66	131		
1,1,2-Trichloroethane	50.6	2.5	50	Ō	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 1,2-Dibromoethane (EDB)	43.7 93.7	2.5 10	50 100	0	87 94	70 70	130 130		
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 Bromoform	51.5	1.3	50	0	103	64	130		
Styrene	37.7 34.8	2.5 2.5	50 50	0	75 70	64 69	138 130		
o-Xylene	51.6	1.3	50	0	103	70	130		
1,1,2,2-Tetrachioroethane	50.4	2.5	50	Ō	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 n-Propylbenzene	47.3 51.5	2.5 2.5	50 50	0	95 103	70 66	130 132		
4-Chlorotoluene	51.7	2.5	50	0	103	70	130		
2-Chlorotoluene	51.3	2.5	50	õ	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 sec-Butylbenzene	51.1	2.5	50	0	102	65	137		
1,3-Dichlorobenzene	51.5 49.4	2.5 2.5	50 50	0	103 99	66 70	134 130		
1,4-Dichlorobenzene	47.1	2.5	50	0	95 94	70	130		
4-Isopropyltoluene	51.3	2.5	50	Ő	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) 1,2,4-Trichlorobenzene	225 41.8	15 10	250	0	90 84	67 61	130 137		
Naphthalene	41.8 39.3	10 10	50 50	0	84 79	40	137 167		
Hexachlorobutadiene	85.5	10	100	0	86	61	130		
1,2,3-Trichlorobenzene	39.4	10	50	Ō		51	144		
Surr: 1,2-Dichloroethane-d4	44		50		88	70	130		
Surr: Toluene-d8 Surr: 4-Bromofluorobenzene	50.6		50		101	70	130		
	48.7		50		97	70	130		



Date: 06-Aug-09	(QC Su	mmary	/ Repor	t				Work Ord 09072803	
Sample Matrix Spike Duplicate		Туре М		st Code:						
File 1D: 09073010.D			Ba	tch ID: MS	15W073	30M	Analys	sis Date: 0	7/30/2009 12:14	
Sample ID: 09072804-01AMSD	Units : µg/L	F	Run ID: MS	D_15_090	730B		Prep [Date: 07	/30/2009	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	55.1	2.5	50	0	110	13	167	56.47	2.5(20)	
Chloromethane	52	10	50	Ō	104	28	145	52.86	1.6(20)	
Vinyl chloride	58.8	2.5	50	0	118	43	134	59.01	0.3(20)	
Chloroethane	44.6	2.5	50	0	89	39	154	44.71	0.3(20)	
Bromomethane	43.5	10	50	0	87	19	176	42.55	2.1(20)	
Trichlorofluoromethane	52.8	2.5	50	0	106	34	160	54.92	4.0(20)	
Dichloromethane	48.4 48.3	2.5 10	50 50	0	97 97	60 68	130 130	50.11 47.59	3.6(20) 1.5(20)	
trans-1,2-Dichloroethene	51.5	2.5	50 50	0	103	63	130	52.54	2.0(20)	
Methyl tert-butyl ether (MTBE)	52.8	1.3	50	õ	106	56	141	49.99	5.5(20)	
1,1-Dichloroethane	51.7	2.5	50	0	103	61	130	52.16	0.9(20)	
cis-1,2-Dichloroethene	50.7	2.5	50	0	101	70	130	51.32	1.2(20)	
Bromochloromethane	51.9	2.5	50	0	104	70	130	50.59	2.6(20)	
Chloroform 2,2-Dichloropropane	55.8	2.5	50	4.14	103	67	130	54.75	2.0(20)	
1.2-Dichloroethane	50.9 48.3	2.5 2.5	50 50	0	102 97	30 60	152 135	51.05 46.86	0.3(20) 3.1(20)	
1,1,1-Trichloroethane	48.3 50.1	2.5 2.5	50 50	0	97 100	59	135	46.86 50.36	3.1(20) 0.6(20)	
1,1-Dichloropropene	51.5	2.5	50 50	0	100	63	130	52.58	2.0(20)	
Carbon tetrachloride	50	2.5	50	õ	100	50	147	50.51	1.0(20)	
Benzene	51.4	1.3	50	0	103	67	130	51.98	1.0(20)	
Dibromomethane	48.5	2.5	50	0	97	69	133	48.3	0.4(20)	
1,2-Dichloropropane	55.8	2.5	50	0	112	69	130	54.29	2.7(20)	
Trichloroethene Bromodichloromethane	48.7	2.5	50	0	97	69 60	130	50.22	3.1(20)	
cis-1,3-Dichloropropene	46.5 45.7	2.5 2.5	50 50	0 0	93 91	66 63	134 130	45.78 44.92	1.5(20) 1.7(20)	
trans-1,3-Dichloropropene	44.9	2.5	50 50	0	90	66	130	44.92	2.9(20)	
1,1,2-Trichloroethane	50	2.5	50	Ő	100	68	130	50.63	1.3(20)	
Toluene	46.7	1.3	50	Ō	93	66	130	48.62	4.0(20)	
1,3-Dichloropropane	50.7	2.5	50	0	101	70	130	50.52	0.4(20)	
Dibromochloromethane	44.7	2.5	50	0	89	70	130	43.65	2.3(20)	
1,2-Dibromoethane (EDB) Tetrachloroethene	95.2	10	100	0	95	70	130	93.7	1.6(20)	
1,1,1,2-Tetrachloroethane	46 47.9	2.5 2.5	50 50	1.91 0	88 96	61 70	134 130	47.95 48.64	4.2(20) 1.6(20)	
Chlorobenzene	47.4	2.5	50 50	0	90 95	70	130	48.4	2.1(20)	
Ethylbenzene	48.5	1.3	50	Ő	97	68	130	49.85	2.8(20)	
m,p-Xylene	49.7	1.3	50	Ō	99	64	130	51.49	3.6(20)	
Bromoform	39.7	2.5	50	0	79	64	138	37.73	5.0(20)	
Styrene	34.4	2.5	50	0	69	69	130	34.77	1.2(20)	
o-Xylene 1,1,2,2-Tetrachloroethane	50.2	1.3	50	0	100	70	130	51.58	2.6(20)	
1,2,3-Trichloropropane	51.5 98.3	2.5 10	50 100	0 0	103 98	65 70	131 130	50.35 95.53	2.2(20) 2.8(20)	
isopropylbenzene	49.9	2.5	50	0	99.8	64	138	52.09	4.3(20)	
Bromobenzene	46.9	2.5	50	Ő	94	70	130	47.29	0.9(20)	
n-Propylbenzene	50.5	2.5	50	Ō	101	66	132	51.53	2.1(20)	
4-Chlorotoluene	50.8	2.5	50	0	102	70	130	51.72	1.9(20)	
2-Chlorotoluene	49.6	2.5	50	0	99	70	130	51.3	3.4(20)	
1,3,5-Trimethylbenzene tert-Butylbenzene	49.1	2.5	50	0	98	66 65	136	50.28	2.4(20)	
1,2,4-Trimethylbenzene	47.9 49.9	2.5 2.5	50 50	0	96 99.7	65 65	137 137	49.37 51.05	3.0(20) 2.4(20)	
sec-Butylbenzene	49.9 49.8	2.5 2.5	50 50	0	99.7 99.6	66	137	51.05 51.45	3.3(20)	
1,3-Dichlorobenzene	49.7	2.5	50	0	99	70	130	49.37	0.7(20)	
1,4-Dichlorobenzene	47.3	2.5	50	Ő	95	70	130	47.06	0.4(20)	
4-Isopropyltoluene	49.5	2.5	50	0	99	66	137	51.25	3.5(20)	
1,2-Dichlorobenzene	48.2	2.5	50	0	96	70	130	47.72	1.0(20)	
n-Butylbenzene 1.2-Dibromo-3-chloropropaga (DBCB)	55	2.5	50	0	110	60 67	142	56.21	2.2(20)	
1,2-Dibromo-3-chloropropane (DBCP) 1,2,4-Trichlorobenzene	234 43.2	15 10	250	0	94 86	67 61	130 137	225 41.76	4.0(20)	
Naphthalene	43.2 40.4	10	50 50	0	86 81	61 40	137	41.76 39.34	3.3(20) 2.7(20)	
Hexachlorobutadiene	85.1	10	100	0	85	40 61	130	39.34 85.51	0.5(20)	
1,2,3-Trichlorobenzene	41.3	10	50	õ	83	51	144	39.35	4.8(20)	
Surr: 1,2-Dichloroethane-d4	46.4		50		93	70	130			
Surr: Toluene-d8	49.1		50		98	70	130			
Surr: 4-Bromofluorobenzene	50.2		50		100	70	130			



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

QC Summary Report

Work Order: 09072805

06-Aug-09 Comments:

Date:

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 :			CH	AIN	-0F		JSTO	DY	CHAIN-OF-CUSTODY RECC	ORD	CΔ	Page	Page: 1 of 1
				255 Gle	Alp ndale Av	ha A enue, Sui	Alpha Analytical, Inc. ale Avenue, Suite 21 Sparks, Nevada 8	al, In ks, Nevad	Alpha Analytical, Inc. 255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778	×	WorkOrder : BMIS09072805	BMIS090728	305
-				_	TEL: (775	6) 355-10	TEL: (775) 355-1044 FAX: (775) 355-0406	775) 355-	-0406		Report Due By : 5:00 PM On : 11-Aug-2009	5:00 PM On : 1	11-Aug-2009
Client:			Report Attention	ntion	Pho	Phone Number	ıber	EMail /	EMail Address				
Battelle Memorial Institute	l Institute		David Conner	9	(81)	(818) 393-2808	08 x	connerd(connerd@battelle.org				
Suite C-205	ve		Betsy Cutie		(61,	(614) 424-4899	x 66	cutice@t	cutiee@batelle.org		EDD Required : Yes	8	
San Diego, CA 92110	2110		Shane Walton	ň	(61,	(614) 424-4117	17 x	waltons(waltons@battelle.org		Sampled by : Client	ient	
PO: 218013											Cooler Temp	Samples Received	Date Printed
Client's COC #: 25745		Job :	G005862/JPL Groundwater Monitoring	² L Grou	ndwater	Monitori	ng				4°C	28-Jul-2009	28-Jul-2009
QC Level: DS4	= DOD QC Required : Final Rpt, MBLK, InitCal/ConCal data, LCS, MS/MSD With Surrogates	Final R	pt, MBLK, In	itCal/Cc	onCal dat	ta, LCS,	MS/MSD V	Nith Surr	ogates				
Alpha	Client		Collection	No. o	No. of Bottles	••		METALS D	VOC TIC	Requested Tests	Tests		
Sample ID	Sample ID	Matr	Matrix Date	Alpha	Sub	TAT	314_W	WE ALS_U		VOC_W		Sam	Sample Remarks
BM109072805-01A	MW-20-5	Ą	07/27/09 07:49	თ	0	10	Perchlorate	ĥ	VOC by 524 Criteria	VOC by 524 Criteria			
BMI09072805-02A	MW-20-4	Ą	07/27/09 08:16	5	0	10	Perchlorate	ç	VOC by 524 Criteria	VOC by 524 Criteria			
BM109072805-03A	MW-20-3	Ą	07/27/09 08:50	თ	0	10	Perchlorate	ĉ	VOC by 524 Criteria	VOC by 524 Criteria			
BMI09072805-04A	MW-20-2	ΑQ	07/27/09 09:13	თ	0	10	Perchlorate	Ŷ	VOC by 524 Criteria	VOC by 524 Criteria			
BMI09072805-05A MW-20-1	MW-20-1	Ą	07/27/09 09:38	5	0	10	Perchlorate	۵	VOC by 524 Criteria	VOC by 524 Criteria			
BMI09072805-06A	DUPE-5-3Q09	۵ ۵	07/27/09 00:00	თ	0	10	Perchlorate	Ω	VOC by 524 Criteria	VOC by 524 Criteria	· · · · · · · · · · · · · · · · · · ·		

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). :

BMI09072805-08A TB-5-7/27/09

AQ 07/27/09 00:00

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VOC by 524 VOC by 524 Criteria Criteria

Reno Trip Blank 3/16/09

BMI09072805-07A EB-5-7/27/09

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07/27/09 09:26

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10

Perchlorate

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VOC by 524 VOC by 524 Criteria Criteria

	Signature	Print Name	Company	Date/Time
				. 1
Logged in by:	Kanar uradya	Klizabuth Hacax	Alpha Analytical, Inc.	1.28.07 1.207
		•		

Matrix Type: AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) 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. 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. Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing Information: Name <u>GEMALD TOMPEINS IBATTELLE</u> Address <u>505 KING</u> AVE		Samples Collected From Which State? 2 AZ CA NV WA Page #	25745 # 1 of 1
סרמשפהז		Analyses Required	
Client Name BATTELLE SAVIO CONNEIL	- 382002 Jub # 6005862		Required QC Level?
OLY TOWN AVE.	EMail Address	14 4 4	11 (11) IV
SAN DIEGO, CA GUID	Prope# (6/4) 726 - 73/1 Fax #	1	DF? YESNO
Matrix* Sampled by See Key	10 00	AL I	
Sampled Sampled Below Lab ID Number (Use Only)	Sample Description TAT Filtered	bee below / ➤/ /⅔ ♂ / / / / / / /	REMARKS
749 1/1/4 AQ BMI09072805-01	MW-20-5 Norm	×	
S16 1 1 918	2 Mw-20-4		
<u>50 - 03</u>	3 Mw-20-3	XXX	
40- 516	MW-20-2	XXX	
g0	D Mr, 20-1	X X	
- OC	6 Jule - 5 - 3009	\times \times \times \times \longrightarrow $DVPi$	DUPLICATE
726	1/63-5-7127/29		. BLOWLE
· · · · · · · · · · · · · · · · · · ·	TR-5-7/17/2		
ADDITIONAL INSTRUCTIONS:			
Signature	Print Name	Company Date	Time
Relinquished by	MARCS MENZUZA IN	12/27/29	1230
Received by Con planth (lacor	Elizabeth Hdux	(lepha 7-28-09	1209
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

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.

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



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 Gro	undwater Monitoring			
Work Order:	BMI09072905		Cooler Temp:	4 °C	
Alpha's	Sample ID	Client's Sample ID	Matrix	······································	
09072	2905-01A	MW-4-3	Aqueou	S	
09072	2905-02A	MW-4-2	Aqueou	S	
09072	2905-03A	MW-4-1	Aqueou	S	
09072	2905-04A	DUPE-6-3Q09	Aqueou	S	
		Manually Integrate	ed Analytes		-
<u>Alpha's Sa</u>	mple ID	Test Reference		Analyte	_
090729	05-02A	EPA Method 314.0		Perchlorate	
090729	05-03A	EPA Method 314.0		Perchlorate	
	05-04A	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/Chainof-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.

Walter Airihum Kandy Saulur Roger Scholl

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

David Conner Attn: Phone: (818) 393-2808 Fax: (614) 458-6641 Date Received : 07/29/09

Job#: G005862/JPL Groundwater Monitoring

 	•	n Chromatography hod 314.0			
	Parameter	Concentration	Reporting Limit	Date Sampled	Date Analyzed
MW-4-3 BMI09072905-01A	Perchlorate	ND	1.00 μg/L	07/28/09	07/31/09
 MW-4-2 BMI09072905-02A	Perchlorate	1.91	1.00 μg/L	07/28/09	07/31/09
 MW-4-1 BMI09072905-03A	Perchlorate	ND	1.00 µg/L	07/28/09	07/31/09
DUPE-6-3Q09 BMI09072905-04A	Perchlorate	1.96	1.00 µg/L	07/28/09	07/31/09

ND = Not Detected

Roger Scholl

Kandy Santrus

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.

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

A

8/11/09 **Report Date**



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 ConnerPhone:(818) 393-2808Fax:(614) 458-6641Date Received : 07/29/09

Job#: G005862/JPL Groundwater Monitoring

		Metals by ICPMS EPA Method 200.8		
	Parameter	Concentration	Reporting Limit	Date Date Sampled Analyzed
Client ID : MW-4-3 Lab ID : BMI09072905	-01A Chromium (Cr)	ND	0.0050 mg/L	07/28/09 08/10/09
Client ID : MW-4-2 Lab ID : BMI09072905	-02A Chromium (Cr)	ND	0.0050 mg/L	07/28/09 08/10/09
Client ID : MW-4-1 Lab ID : BMI09072905	-03A Chromium (Cr)	ND	0.0050 mg/L	07/28/09 08/10/09
Client ID : DUPE-6-3Q0 Lab ID : BMI09072905		. ND	0.0050 mg/L	07/28/09 08/10/09

ND = Not Detected

Roger Scholl Kandy Saulmer

Walter Hinihum

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.

8/11/09

Report Date



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ANALYTICAL REPORT

Battelle Memorial InstituteAttn:David Conner3990 Old Town AvePhone: (818) 393-2808San Diego, CA 92110Fax: (614) 458-6641Job#:G005862/JPL Groundwater Monitoring

Tentatively Identified Compounds - Volatile Organics by GC/MS

		Parameter	Estimated Concentration	Estimated Reporting Limit	Date Received	Date Sampled	Date Analyzed
Client ID : Lab ID :	MW-4-3 BMI09072905-01A	* * * None Found * * *	ND	2.0 µg/L	07/29/09	07/28/09	08/05/09
Client ID : Lab ID :	MW-4-2 BMI09072905-02A	* * * None Found * * *	ND	2.0 µg/L	07/29/09	07/28/09	08/05/09
Client ID : Lab ID :	MW-4-1 BMI09072905-03A	* * * None Found * * *	ND	2.0 µg/L	07/29/09	07/28/09	08/05/09
Client ID : Lab ID :	DUPE-6-3Q09 BMI09072905-04A	* * * None Found * * *	ND	2.0 μg/L	07/29/09	07/28/09	08/05/09

Note: Analysis conducted using EPA Method 524.2 criteria. ND = Not Detected

Walter Arihm Roger Scholl Kandys

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.

8/11/09

Report Date Page 1 of 1



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

ANALYTICAL REPORT

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Sampled: 07/28/09
Received: 07/29/09
Analyzed: 08/05/09

Volatile Organics by GC/MS

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting Li	mit
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	2.5	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	0.60	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 (DBC	P) 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	106	(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.

Note: Bromomethane failed the method CV criteria of 70-130% @ 66.8% recovery.

ND = Not Detected

Roger Scholl

Kandy Saulmer

Walter Ainihum

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.

8/11/09

Report Date



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	Attn: David Conner
3990 Old Town Ave	Phone: (818) 393-2808
San Diego, CA 92110	Fax: (614) 458-6641
Job#: G005862/JPL Groundwater Monitoring	
Alpha Analytical Number: BMI09072905-02A Client I.D. Number: MW-4-2	Sampled: 07/28/09 Received: 07/29/09 Analyzed: 08/05/09

Volatile Organics by GC/MS

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting Li	mit
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-Chiorotoluene	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 (DBCf	P) ND	2.5	µg/L
25	Trichloroethene	0.56	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	110	(70-130)	%REC
31	Toluene	ND	0.50	μg/L	66	Surr: 4-Bromofluorobenzene	94	(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.

Note: Bromomethane failed the method CV criteria of 70-130% @ 66.8% recovery.

ND = Not Detected

Roger Scholl

Kandy Sandner

Walter Acrim

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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p2

8/11/09 Report Date



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#: <u>G005862/JPL Groundwater Monitoring</u>

Alpha Analytical Number: BMI09072905-03A Client I.D. Number: MW-4-1 Attn:David ConnerPhone:(818) 393-2808Fax:(614) 458-6641

Sampled: 07/28/09 Received: 07/29/09 Analyzed: 08/05/09

Volatile Organics by GC/MS

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting Li	imit
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 (DBC	P) ND	2.5	µg/L
25	Trichloroethene	ND	0.50	µg/L	60	1,2,4-Trichloroberizene	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-Trichlorobenzerie	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	115	(70-130)	%REC
31	Toluene	ND	0.50	μg/L	66	Surr: 4-Bromofluoroberizene	95	(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.

Note: Bromomethane failed the method CV criteria of 70-130% @ 66.8% recovery.

ND = Not Detected

Roger Scholl

Kandy Santur

Walter Alinihum

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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Report Date



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ANALYTICAL REPORT

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

Alpha Analytical Number: BMI09072905-04A Client I.D. Number: DUPE-6-3Q09 Attn: David Conner Phone: (818) 393-2808 Fax: (614) 458-6641

Sampled: 07/28/09 Received: 07/29/09 Analyzed: 08/05/09

Volatile Organics by GC/MS

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting Li	mit
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	2.0	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-Chlorotoiuene	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 (DBCI	P) ND	2.5	µg/L
25	Trichloroethene	0.70	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	113	(70-130)	%REC
31	Toluene	ND	0.50	µg/L	66	Surr: 4-Bromofluorobenzene	98	(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.

Note: Bromomethane failed the method CV criteria of 70-130% @ 66.8% recovery.

ND = Not Detected

Roger Scholl

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8/11/09

Report Date



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: BMI09072905

Project: G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	рН	
09072905-01A	MW-4-3	Aqueous	2	
09072905-02A	MW-4-2	Aqueous	2	
09072905-03A	MW-4-1	Aqueous	2	
09072905-04A	DUPE-6-3Q09	Aqueous	2	



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Date: 06-Aug-09		(QC S	Sun	nmary	y Repor	t				Work Orde 09072905	
Method Blank File ID: 14	κ		Туре	MBL		est Code: El atch ID: 224		hod 314.0	Analy	sis Date:	07/31/2009 13:17	
Sample ID:	MB-22449	Units : µg/L			-	_3_0907314			Prep		07/31/2009	
Analyte		Result	PQL		SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qua
Perchlorate		ND		1								
Laboratory F	ortified Blank		Туре	LFB	Te	est Code: El	PA Met	hod 314.0				
File ID: 15					Ba	atch ID: 224	49		Analy	sis Date:	07/31/2009 13:35	
Sample ID:	LFB-22449	Units : µg/L		Ru	in ID: IC _	_3_0907314	4		Prep	Date:	07/31/2009	
Analyte		Result	PQL		SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qual
Perchlorate		23.5		2	25		94	85	115			
Sample Matri	x Spike		Туре	LFM	Te	est Code: El	PA Met	hod 314.0				
File ID: 18					Ba	tch ID: 224	49		Analy	sis Date:	07/31/2009 14:30	
Sample ID:	09073122-08ALFM	Units : µg/L		Ru	in ID: IC _	_3_090731 <i>A</i>	4		Prep	Date:	07/31/2009	
Analyte		Result	PQL		SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qual
Perchlorate		22.8		2	25	0	91	80	120			
Sample Matri	x Spike Duplicate		Туре	LFM	D Te	est Code: El	PA Met	hod 314.0				
File ID: 19					Ba	tch ID: 224	49		Analy	sis Date:	07/31/2009 14:49	
Sample ID:	09073122-08ALFMD	Units : µg/L		Ru	in ID: IC _	_3_090731 <i>A</i>	۱.		Prep	Date:	07/31/2009	
Analyte		Result	PQL					LCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qua
Perchlorate		23.6		2	25	0	94	80	120	22.8	1 3.3(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: 12-Aug-09	(QC S	ummar	y Repor	t				Work Ord 09072905	
Method Blank File ID: 080809.B\093SMPL.D\		Туре I		est Code: E atch ID: 224		thod 200.8		/sis Date:	08/10/2009 00:56	
Sample ID: MB-22446	Units : mg/L			P/MS_0908			•	Date:	07/30/2009	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	CLCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qua
Chromium (Cr)	ND	0.00	5							
Laboratory Control Spike File ID: 080809.B\094_LCS.D\		Type I		est Code: E atch ID: 224		thod 200.8		/sis Date:	08/10/2009 01:02	
Sample ID: LCS-22446	Units : mg/L		Run ID: IC	P/MS_0908	10A		Prep	Date:	07/30/2009	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME	RPDRef	Val %RPD(Limit)	Qua
Chromium (Cr)	0.054	0.00	5 0.05		108	80	120	- 18		
Sample Matrix Spike File ID: 080809.B\098SMPL.D\		Туре 🛛		est Code: E atch ID: 224		thod 200.8		/sis Date:	08/10/2009 01:25	
Sample ID: 09072804-01AMS	Units : ma/L		Run ID: IC	P/MS_0908	10A		Prep	Date:	07/30/2009	
Analyte	Result	PQL		—		LCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qua
Chromium (Cr)	0.0454	0.00	5 0.05	0	91	80	120			
Sample Matrix Spike Duplicate		Type I	NSD T	est Code: E	PA Met	thod 200.8				
File ID: 080809.B\099SMPL.D\			В	atch ID: 224	46K		Analy	sis Date:	08/10/2009 01:30	
Sample ID: 09072804-01AMSD	Units : mg/ L		Run ID: IC	P/MS_0908	10A		Prep	Date:	07/30/2009	
Analyte	Result	PQL				LCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qua
Chromium (Cr)	0.045	0.00	5 0.05	0	90	80	120	0.045	54 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.



Date: 10-Aug-09	(QC Sun	mary Report		Work Orde 09072905	
Method Blank File ID: 09080506.D		Type MBL	K Test Code: Batch ID: MS15W0805M	Analysis Date	: 08/05/2009 11:54	
Sample ID: MBLK MS15W0805M	Units : µg/L		n ID: MSD_15_090805A	Prep Date:	08/05/2009	
Analyte	Result	PQL :	SpkVal SpkRefVal %REC LC	L(ME) UCL(ME) RPDRe	fVal %RPD(Limit)	Qual
Dichlorodifluoromethane	ND	0.5				
Chloromethane	ND	1				
Vinyl chloride	ND	0.5				
Chloroethane Bromomethane	ND ND	0.5 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) 1,1-Dichloroethane	ND ND	0.5 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 1,1,1-Trichloroethane	ND ND	0.5 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 Bromodichloromethane	ND ND	0.5 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				
	ND	0.5				
1,3-Dichloropropane Dibromochloromethane	ND ND	0.5 0.5				
1,2-Dibromoethane (EDB)	ND	0.5				
Tetrachloroethene	ND	0.5				
1,1,1,2-Tetrachloroethane	ND	0.5				
Chlorobenzene	ND	0.5				
Ethylbenzene	ND	0.5				
m,p-Xylene Bromoform	ND	0.5				
Styrene	ND ND	0.5 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 n-Propylbenzene	ND ND	0.5				
4-Chlorotoluene	ND	0.5 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 1,3-Dichlorobenzene	ND ND	0.5 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 Naphthalene	ND ND	1				
Hexachlorobutadiene	ND	1				
1,2,3-Trichlorobenzene	ND	1				
Surr: 1,2-Dichloroethane-d4	8.83		10 88	70 130		
Surr: Toluene-d8	11		10 110	70 130		



Date: 10-Aug-09	(QC Su	immary	/ Report			Work Ord 0907290	
Surr: 4-Bromofluorobenzene	9.51	بر 	10	95	70	130		
Laboratory Control Spike File ID: 09080503.D Sample ID: LCS MS15W0805M		Type L(Ва	est Code: itch ID: MS15W08 0)5 M	•	e: 08/05/2009 10:48	}
Sample ID: LCS MS15W0805M Analyte	Units : µg/L Result	PQL		SokRefVal %REC		Prep Date:	08/05/2009 efVal %RPD(Limit)	Qua
Dichlorodifluoromethane	12.8	1	10	128	70	130		
Chloromethane	8.94	2	10	89	70	130		
Vinyl chloride	9.15	1	10	92	70	130		
Chloroethane Bromomethane	9.41	1	10	94	70 70(70)	130		L50
Trichlorofluoromethane	6.68 11.4	2 1	10 10	67 114	70(70) 70	130 130		L90
1,1-Dichloroethene	10.8	1	10	108	70	130		
Dichloromethane	9.31	2	10	93	70	130		
trans-1,2-Dichloroethene	11	1	10	110	70	130		
Methyl tert-butyl ether (MTBE)	9.22	0.5	10	92	70	130		
1,1-Dichloroethane cis-1.2-Dichloroethene	10 10.4	1	10 10	100 104	70 70	130 130		
Bromochloromethane	10.3	1	10	103	70	130		
Chloroform	10	1	10	100	70	130		
2,2-Dichloropropane	11	1	10	110	70	130		
1,2-Dichloroethane 1,1,1-Trichloroethane	9.24	1	10	92	70	130 130		
1,1-Dichloropropene	10.9 10.8	1	10 10	109 108	70 70	130		
Carbon tetrachloride	10.9	1	10	109	70	130		
Benzene	10	0.5	10	100	70	130		
Dibromomethane	9.58	1	10	96	70	130		
1,2-Dichloropropane	9.96	1	10	99.6	70	130		
Trichloroethene Bromodichloromethane	11 8.87	1	10 10	110 89	70 70	130 130		
cis-1,3-Dichloropropene	9.01	1	10	90	70	130		
trans-1,3-Dichloropropene	8.52	1	10	85	70	130		
1,1,2-Trichloroethane	9.81	1	10	98	70	130		
Toluene	10.1	0.5	10	101	70	130		
1,3-Dichloropropane Dibromochloromethane	9.92 9.2	1	10 10	99 92	70 70	130 130		
1,2-Dibromoethane (EDB)	19.4	2	20	97	70	130		
Tetrachloroethene	11.1	1	10	111	70	130		
1,1,1,2-Tetrachloroethane	10.3	1	10	103	70	130		
Chlorobenzene Ethylbenzene	10 10.6	1	10	100 106	70 70	130 130		
m,p-Xylene	11.1	0.5 0.5	10 10	111	70	130		
Bromoform	8.29	1	10	83	70	130		
Styrene	7.32	1	10	73	70	130		
o-Xylene	11	0.5	10	110	70	130		
1,1,2,2-Tetrachloroethane 1,2,3-Trichloropropane	9.92 20	1	10 20	99 100	70 70	130 130		
Isopropylbenzene	10.8	1	10	108	70	130		
Bromobenzene	9.63	1	10	96	70	130		
n-Propylbenzene	10.7	1	10	107	70	130		
4-Chlorotoluene 2-Chlorotoluene	10.6 10.3	1	10 10	106 103	70 70	130 130		
1,3,5-Trimethylbenzene	10.3	1	10	103	70	130		
tert-Butylbenzene	10.4	1	10	104	70	130		
1,2,4-Trimethylbenzene	10.4	1	10	104	70	130		
sec-Butylbenzene	10.8	1	10	108	70	130		
1,3-Dichlorobenzene 1,4-Dichlorobenzene	10.2 9.79	1	10 10	102 98	70 70	130 130		
4-lsopropyltoluene	10.6	1	10	106	70	130		
1,2-Dichlorobenzene	9.81	1	10	98	70	130		
n-Butylbenzene	11.6	1	10	116	70	130		
1,2-Dibromo-3-chloropropane (DBCP)	44.6	3	50	89	70	130		
1,2,4-Trichlorobenzene Naphthalene	9.1 8.44	2 2	10 10	91 84	70 70	130 130		
Hexachlorobutadiene	0.44 19.4	2	20	04 97	70	130		
1,2,3-Trichlorobenzene	8.65	2	10	87	70	130		
Surr: 1,2-Dichloroethane-d4	8.5		10	85	70	130		
Surr: Toluene-d8	10.4		10	104	70	130		
Surr: 4-Bromofluorobenzene	9.73		10	97	70	130		



Date: 10-Aug-09	(QC Sı	ımmary	Report	t			Work Ord 09072905	
Sample Matrix Spike		Туре М	S Te	est Code:					
File ID: 09080507.D			Ba	tch ID: MS1	5W080	D5M	Analysis [Date: 08/05/2009 12:17	
Sample ID: 09072905-01AMS	Units : µg/L			SD_15_0908			Prep Date		
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPI	DRefVal %RPD(Limit)	Qual
Dichlorodifluoromethane	50.5	2.5	50	0	101	13	167		
Chloromethane Vinyl chloride	41.3	10	50	0	83	28	145		
Chloroethane	53.4 42.6	2.5 2.5	50 50	0 0	107 85	43 39	134 154		
Bromomethane	37.5	10	50	Ő	75	19	176		
Trichlorofluoromethane	58	2.5	50	0	116	34	160		
1,1-Dichloroethene	49.5	2,5	50	0	99	60	130		
Dichloromethane trans-1,2-Dichloroethene	43.8 51.2	10	50	0	88 102	68	130 130		
Methyl tert-butyl ether (MTBE)	46.3	2.5 1.3	50 50	0 0	93	63 56	141		
1,1-Dichloroethane	46.6	2.5	50	Õ	93	61	130		
cis-1,2-Dichloroethene	48.3	2.5	50	0	97	70	130		
Bromochloromethane	51.1	2.5	50	0	102	70	130		
Chloroform 2,2-Dichloropropane	47.6 50.2	2.5	50	0	95 100	67 30	130		
1,2-Dichloroethane	45.5	2.5 2.5	50 50	0 0	91	60	152 135		
1,1,1-Trichloroethane	51.8	2.5	50	Ő	104	59	137		
1,1-Dichloropropene	50.6	2.5	50	0	101	63	130		
Carbon tetrachloride	52.8	2.5	50	0	106	50	147		
Benzene Dibromomethane	47	1.3	50	0	94 91	67 60	130		
1,2-Dichloropropane	45.6 47	2.5 2.5	50 50	0 0	91 94	69 69	133 130		
Trichloroethene	50.6	2.5	50	Ő	101	69	130		
Bromodichloromethane	43.3	2.5	50	0	87	66	134		
cis-1,3-Dichloropropene	40.9	2.5	50	0	82	63	130		
trans-1,3-Dichloropropene 1,1,2-Trichloroethane	40.2	2.5	50	0	80	66	131		
Toluene	47.4 47.3	2.5 1.3	50 50	0 0	95 95	68 66	130 130		
1,3-Dichloropropane	48.4	2.5		Ő	97	70	130		
Dibromochloromethane	45.3	2.5	50	0	91	70	130		
1,2-Dibromoethane (EDB)	92.9	10		0	93	70	130		
Tetrachloroethene 1,1,2-Tetrachloroethane	51.4 50.2	2.5 2.5	50 50	0 0	103 100	61 70	134 130		
Chlorobenzene	47.2	2.5	50 50	0	94	70	130		
Ethylbenzene	50.8	1.3		2.45	97	68	130		
m,p-Xylene	51.3	1.3	50	0	103	64	130		
Bromoform	40.3	2.5	50	0	81	64	138		
Styrene	34.7	2.5	50	0.6	68	69	130		M2
o-Xylene 1,1,2,2-Tetrachloroethane	51.1	1.3	50	0	102	70 65	130		
1,2,3-Trichloropropane	49.7 97.9	2.5 10	50 100	0 0	99 98	70	131 130		
Isopropylbenzene	50.2	2.5	50	Ő	100	64	138		
Bromobenzene	45	2.5		0	90	70	130		
n-Propylbenzene	50.6	2.5	50	0	101	66	132		
4-Chlorotoluene 2-Chlorotoluene	49.4 48.7	2.5	50	0	99 97	70	130 130		
1,3,5-Trimethylbenzene	48.4	2.5 2.5	50 50	0 0	97 97	70 66	130		
tert-Butylbenzene	48.4	2.5		Ő	97	65	137		
1,2,4-Trimethylbenzene	48.5	2.5		0	97	65	137		
sec-Butylbenzene	50	2.5	50	0	99.9	66	134		
1,3-Dichlorobenzene 1,4-Dichlorobenzene	48 46.7	2.5	50	0 0	96 93	70 70	130 130		
4-Isopropyltoluene	49.9	2.5 2.5	50 50	0	93 99.9	70 66	130		
1,2-Dichlorobenzene	47.1	2.5	50	0	94	70	130		
n-Butylbenzene	53.4	2.5		0	107	60	142		
1,2-Dibromo-3-chloropropane (DBCP)	212	15	250	0	85	67	130		
1,2,4-Trichlorobenzene Naphthalene	41.9	10		0	84 77	61	137 167		
Hexachlorobutadiene	38.3 92.9	10 10		0	93	40 61	167 130		
1,2,3-Trichlorobenzene	41.3	10		Ő	83	51	144		
Surr: 1,2-Dichloroethane-d4	45.1		50		90	70	130		
Surr: Toluene-d8	51.7		50		103	70	130		
Surr: 4-Bromofluorobenzene	47.8		50		96	70	130		



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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

Date: 10-Aug-09	(QC Sum	mary]	Report	,				Work Ord 0907290	
Sample Matrix Spike Duplicate		Type MSD		Code: n ID: MS1 !	5W080	5M	Analys	is Date: 08/	05/2009 12:39	
Sample ID: 09072905-01AMSD	Units : µg/L	Run		_15_0908			Prep D		05/2009	
Analyte	Result						•	RPDRefVal 9		Qual
Dichlorodifluoromethane Chloromethane	51.1 43.9	2.5 10	50 50	0 0	102 88	13 28	167 145	50.46 41.25	1.3(20) 6.2(20)	
Vinyl chloride	43.9 54.7	2.5	50 50	0	109	43	134	53.4	2.5(20)	
Chloroethane	42.3	2.5	50	Ő	85	39	154	42.62	0.7(20)	
Bromomethane	39.1	10	50	Ō	78	19	176	37.49	4.2(20)	
Trichlorofluoromethane	55.8	2.5	50	0	112	34	160	58.02	4.0(20)	
1,1-Dichloroethene	46.8	2.5	50	0	94	60	130	49.5	5.6(20)	
Dichloromethane	43.6	10	50	0	87	68	130	43.8	0.4(20)	
trans-1,2-Dichloroethene Methyl tert-butyl ether (MTBE)	49.6 47	2.5 1.3	50 50	0 0	99 94	63 56	130 141	51.17 46.28	3.1(20) 1.5(20)	
1,1-Dichloroethane	47	2.5	50 50	0	94 92	56 61	130	46.64	1.1(20)	
cis-1,2-Dichloroethene	47.8	2.5	50 50	Ő	96	70	130	48.32	1.1(20)	
Bromochloromethane	51.2	2.5	50	Ō	102	70	130	51.11	0.2(20)	
Chloroform	47.1	2.5	50	0	94	67	130	47.56	1.1(20)	
2,2-Dichloropropane	48.3	2.5	50	0	97	30	152	50.2	3.9(20)	
1,2-Dichloroethane	44.9	2.5	50	0	90	60	135	45.54	1.5(20)	
1,1,1-Trichloroethane 1,1-Dichloropropene	49.3 48	2.5 2.5	50 50	0 0	99 96	59 63	137 130	51.79 50.58	4.9(20) 5.3(20)	
Carbon tetrachloride	40	2.5	50 50	0	90 98	50	147	52.84	7.1(20)	
Benzene	45.9	1.3	50 50	0	92	67	130	47.02	2.4(20)	
Dibromomethane	46.7	2.5	50	Ō	93	69	133	45.55	2.5(20)	
1,2-Dichloropropane	47	2.5	50	0	94	69	130	47.03	0.0(20)	
Trichloroethene	49.1	2.5	50	0	98	69	130	50.57	3.0(20)	
Bromodichloromethane	42.9	2.5	50	0	86	66	134	43.32	1.1(20)	
cis-1,3-Dichloropropene	40.8	2.5	50	0	82	63	130	40.94	0.4(20) 4.4(20)	
trans-1,3-Dichloropropene 1,1,2-Trichloroethane	42 48.4	2.5 2.5	50 50	0 0	84 97	66 68	131 130	40.17 47.4	2.1(20)	
Toluene	45.9	1.3	50 50	0	92	66	130	47.28	2.9(20)	
1,3-Dichloropropane	48.1	2.5	50	Õ	96	70	130	48.36	0.6(20)	
Dibromochloromethane	44.6	2.5	50	0	89	70	130	45.27	1.4(20)	
1,2-Dibromoethane (EDB)	94.7	10	100	0	95	70	130	92.91	2.0(20)	
Tetrachloroethene	49.6	2.5	50	0	99	61	134	51.39	3.7(20)	
1,1,1,2-Tetrachloroethane Chlorobenzene	48.8	2.5	50	0 0	98 93	70 70	130 130	50.22 47.21	2.9(20) 1.8(20)	
Ethylbenzene	46.4 49.6	2.5 1.3	50 50	2.45	93 94	68	130	50.76	2.3(20)	
m,p-Xylene	49.8	1.3	50	2.40	99.6	64	130	51.27	2.9(20)	
Bromoform	40.8	2.5	50	Ō	82	64	138	40.28	1.3(20)	
Styrene	34.7	2.5	50	0.6	68	69	130	34.66	0.1(20)	M2
o-Xylene	50.8	1.3	50	0	102	70	130	51.1	0.5(20)	
1,1,2,2-Tetrachloroethane	49.6	2.5	50	0	99	65	131	49.71	0.2(20)	
1,2,3-Trichloropropane	101	10	100	0	101	70	130	97.86	2.8(20)	
lsopropylbenzene Bromobenzene	47.8	2.5	50	0	96 91	64 70	138 130	50.23 44.99	5.0(20) 1.0(20)	
n-Propylbenzene	45.4 47.3	2.5 2.5	50 50	0 0	95	66	130	50.6	6.8(20)	
4-Chlorotoluene	48.6	2.5	50	Ő	97	70	130	49.4	1.7(20)	
2-Chlorotoluene	47.2	2.5	50	Ō	94	70	130	48.7	3.1(20)	
1,3,5-Trimethylbenzene	46.3	2.5	50	0	93	66	136	48.35	4.4(20)	
tert-Butylbenzene	46.8	2.5	50	0	94	65	137	48.4	3.3(20)	
1,2,4-Trimethylbenzene	46.6	2.5	50	0	93	65 65	137	48.45	3.9(20) 5.1(20)	
sec-Butylbenzene 1,3-Dichlorobenzene	47.5 47.3	2.5 2.5	50 50	0 0	95 95	66 70	134 130	49.96 47.99	5.1(20) 1.4(20)	
1,4-Dichlorobenzene	45.2	2.5	50 50	0	90	70	130	46.66	3.2(20)	
4-lsopropyltoluene	48.3	2.5	50	Õ	97	66	137	49.93	3.4(20)	
1,2-Dichlorobenzene	46.2	2.5	50	Ō	92	70	130	47.08	1.9(20)	
n-Butylbenzene	51.7	2.5	50	0	103	60	142	53.42	3.2(20)	
1,2-Dibromo-3-chloropropane (DBCP)	214	15	250	0	86	67	130	212.1	0.8(20)	
1,2,4-Trichlorobenzene	43.3	10	50	0	87 70	61	137 167	41.87	3.3(20)	
Naphthalene Hexachlorobutadiene	39.4 90.8	10 10	50 100	0 0	79 91	40 61	167 130	38.25 92.92	2.9(20) 2.3(20)	
1,2;3-Trichlorobenzene	90.8 41.7	10	50	0	83	51	144	41.33	0.9(20)	
Surr: 1,2-Dichloroethane-d4	44.5		50	J	89	70	130			
Surr: Toluene-d8	51.4		50		103	70	130			
Surr: 4-Bromofluorobenzene	47.9		50		96	70	130			



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QC Summary Report

Work Order: 09072905

10-Aug-09 Comments:

Date:

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.

L50 = Analyte recovery was below acceptance limits for the LCS, but was acceptable in the MS/MSD.

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

Matrix Type: AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) 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 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. Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Logged in by: Clarpbith Adcox	Signature
Elizabeth Adcox	Print Name
Alpha Analytical, Inc.	Company
7-29-09 1342	Date/Time

No security scals. Frozen ice. Temp Blank #5039 received @ 4°C. Perchlorate RL of 1.0 ug/L Level IV QC. Samples should be used as the control spike sample if possible (LE.: MS/MSD). :

Comments:

										Requested Tests	sts	
Alpha Sample ID	Client Sample ID	Matr	Collection No. of Bottles Matrix Date Alpha Sub	No. of Alpha	No. of Bottles Alpha Sub TAT	TAT	314_W	METALS_C	METALS_D VOC_TIC_	VOC_W		Sample Remarks
		;			,	5	,					
BMI09072905-01A	MW-4-3	AQ	07/28/09 09:53	თ	0	10	Perchlorate	ទ្	VOC by 524 Criteria	VOC by 524 Criteria		
BM109072905-02A	MW-4-2	Å	07/28/09 10:23	თ	0	10	Perchlorate	Ç	VOC by 524 Criteria	VOC by 524 Criteria		
BM109072905-03A	MW-4-1	Ą	07/28/09 10:44	თ	0	10	Perchlorate	ç	VOC by 524 Criteria	VOC by 524 Criteria		
BMI09072905-04A DUPE-6-3Q09	DUPE-6-3Q09	A	07/28/09 00:00	თ	0	10	Perchlorate	٩	VOC by 524 Criteria	VOC by 524 Criteria		

CHAIN-OF-CUSTODY RECORD

Page: 1 of 1

Billing Information :

Client's COC #: 25754

Job :

G005862/JPL Groundwater Monitoring

PO: 218013

San Diego, CA 92110

David Conner Betsy Cutie Shane Walton

(818) 393-2808 x (614) 424-4899 x (614) 424-4117 x

cutiee@batelle.org waltons@battelle.org

3990 Old Town Ave Suite C-205 Client:

Report Attention

Phone Number

connerd@battelle.org

EDD Required : Yes

Sampled by : Client
<u>Cooler Temp</u> Sa

4°C

Samples Received 29-Jul-2009

Date Printed 29-Jul-2009 EMail Address

Report Due By : 5:00 PM On : 12-Aug-2009

WorkOrder : BMIS09072905

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

Alpha Analytical, Inc.

Battelle Memorial Institute

PUPLICATE							P (4-3 4-2 4-2	MW-4-3 MW-4-3 DUPE-6		(Use	Bmt 0907-		753 7/28/55 1073 1 1044 1	953 1023 1044
tate? 2.5./5.4 Page # of	Samples Collected From Which State?	Collected Fr CA X NV OR Analyses I Analyses I	AZ Collected AZ CA ID CA CA CA CA CA CA CA CA CA CA CA CA CA C	Total and type of	alytical, Inc. Avenue, Suite 21 Ja 89431-5778 355-1044 5-0406 * 5-0406	Alpha Analytical, Inc. 255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778 Phone (775) 355-0406 Fax (775) 355-0406 Fax #	Alpha 255 Gler Sparks, I Phone (Fax (778	7311	$\frac{2}{14} \frac{13}{724} = 13$	323	SZ CO Fax	Multin A	ame <u>CEACS</u> ddress <u>So</u> S ity, State, Zip <u>Coc</u> hone Number <u>Client Name</u> <u>Sate</u> CCS 1 Olient State, Zip Sate, Zip SAM Date Matrix S		Billing Information: Name <u>CAN</u> Ti Address <u>Sos</u> k City, State, Zip <u>Cort</u> Phone Number Phone Number Client Name Address 3.462.0 CL9 T City, State, Zip City, State, Zip



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 Gro	oundwater Monitoring		
Work Order:	BMI09072906		Cooler Temp:	4 °C
Alpha's	Sample ID	Client's Sample ID	Matrix	
09072	2906-01A	MW-17-4	Aqueous	3
09072	2906-02A	MW-17-3	Aqueous	5
09072	2906-03A	MW-17-2	Aqueous	5
09072	2906-04A	EB-6-7/28/09	Aqueous)
09072	2906-05A	TB-6-7/28/09	Aqueous	3
		Manually Integrat	ed Analytes	
<u>Alpha's Sat</u>	mple ID	Test Reference		Analyte
0907290	06-02A	EPA Method 314.0		Perchlorate
0907290	06-03A	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/Chainof-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.

Walter Hinihum Roger Scholl Kandy Saulner

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.



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 ConnerPhone:(818) 393-2808Fax:(614) 458-6641Date Received : 07/29/09

Job#: G005862/JPL Groundwater Monitoring

Perchlorate by Ion Chromatography EPA Method 314.0							
	Parameter	Concentration	Reporting Limit	Date Date Sampled Analyzed			
Client ID : MW-17-4 Lab ID : BMI09072906-01A	Perchlorate	ND	1.00 µg/L	07/28/09 08/06/09			
Client ID : MW-17-3 Lab ID : BMI09072906-02A	Perchlorate	11.5	1.00 µg/L	07/28/09 08/06/09			
Client ID : MW-17-2 Lab ID : BMI09072906-03A	Perchlorate	5.03	1.00 µg/L	07/28/09 08/06/09			
Client ID : EB-6-7/28/09 Lab ID : BMI09072906-04A	Perchlorate	ND	1.00 µg/L	07/28/09 08/06/09			

ND = Not Detected

Roger Scholl

Kandy Santmer

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.

Dalter Aridman

8/11/09 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 : 07/29/09

Job#: G005862/JPL Groundwater Monitoring

Metals by ICPMS EPA Method 200.8							
	Parameter	Concentration	Reporting Limit	Date Date Sampled Analyzed			
Client ID : MW-17-4 Lab ID : BMI09072906-01A	Chromium (Cr)	ND	0.0050 mg/L	07/28/09 08/07/09			
Client ID : MW-17-3 Lab ID : BM109072906-02A	Chromium (Cr)	ND	0.0050 mg/L	07/28/09 08/07/09			
Client ID : MW-17-2 Lab ID : BMI09072906-03A	Chromium (Cr)	ND	0.0050 mg/L	07/28/09 08/07/09			
Client ID : EB-6-7/28/09 Lab ID : BMI09072906-04A	Chromium (Cr)	ND	0.0050 mg/L	07/28/09 08/07/09			

ND = Not Detected

Kandy Sandmer Roger Scholl

Walter Arinhum

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.

8/11/09

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

				Estimated			
		Parameter	Estimated	Reporting	Date	Date	Date
			Concentration	Limit	Received	Sampled	Analyzed
Client ID : Lab ID :	MW-17-4 BMI09072906-01A	*** None Found ***	ND	2.0 μg/L	07/29/09	07/28/09	08/05/09
Client ID : Lab ID :	MW-17-3 BMI09072906-02A	* * * None Found * * *	ND	2.0 µg/L	07/29/09	07/28/09	08/05/09
Client ID : Lab ID :	MW-17-2 BMI09072906-03A	* * * None Found * * *	ND	2.0 μg/L	07/29/09	07/28/09	08/05/09
Client ID : Lab ID :	E B-6-7/28/09 BMI09072906-04A	* * * None Found * * *	ND	2.0 μg/L	07/29/09	07/28/09	08/05/09
Client ID : Lab ID :	T B-6-7/28/09 BMI09072906-05A	* * * None Found * * *	ND	2.0 μg/L	07/29/09	07/28/09	08/05/09

Note: Analysis conducted using EPA Method 524.2 criteria. ND = Not Detected

Roger Scholl

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

8/11/09

Report Date

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ANALYTICAL REPORT

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

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

Alpha Analytical Number: BMI09072906-01A Client I.D. Number: MW-17-4

Sampled: 07/28/09 Received: 07/29/09 Analyzed: 08/05/09

Volatile Organics by GC/MS

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting L	imit
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-Chiorotoluene	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 (DBC	P) ND	2.5	µg/L
25	Trichloroethene	0.81	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	111	(70-130)	%REC
31	Toluene	ND	0.50	µg/L	66	Surr: 4-Bromofluorobenzene	90	(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.

Note: Bromomethane failed the method CV criteria of 70-130% @ 66.8% recovery.

ND = Not Detected

Roger Scholl

Kandy Daulmer

Walter Arihm

8/11/09

Report Date

Page 1 of 1

de la

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

Alpha Analytical Number: BMI09072906-02A Client I.D. Number: MW-17-3 Attn:David ConnerPhone:(818) 393-2808Fax:(614) 458-6641

Sampled: 07/28/09 Received: 07/29/09 Analyzed: 08/05/09

Volatile Organics by GC/MS

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting Li	mit
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	i,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	0.65	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 (DBCI	P) ND	2.5	µg/L
25	Trichloroethene	ND	0.50	µg/L	60	1,2,4-Trichlorobenzene	ND	1.0	µg/L
26	Bromodichioromethane	ND	0.50	µg/L	61	Naphthalene	ND	2.0	µg/L
27	4-Methyl-2-pentanone (MIBK)	ND	2.5	µg/L	62	Hexachiorobutadiene	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	110	(70-130)	%REC
31	Toluene	ND	0.50	µg/L	66	Surr: 4-Bromofluorobenzene	95	(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.

Note: Bromomethane failed the method CV criteria of 70-130% @ 66.8% recovery.

ND = Not Detected

Rogen Scholl

Walter Acrilmon

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

Kandy Daulmer

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ANALYTICAL REPORT

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110 Job#: <u>G005862/JPL Groundwater Monitoring</u>
 Attn:
 David Conner

 Phone:
 (818) 393-2808

 Fax:
 (614) 458-6641

Alpha Analytical Number: BMI09072906-03A Client I.D. Number: MW-17-2

Sampled: 07/28/09 Received: 07/29/09 Analyzed: 08/05/09

Volatile Organics by GC/MS

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting L	imit
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-Chiorotoluene	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 (DBCF	P) ND	2.5	µg/L
25	Trichloroethene	1.2	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	90	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	µg/L	65	Surr: Toluene-d8	115	(70-130)	%REC
31	Toluene	ND	0.50	µg/L	66	Surr: 4-Bromofluorobenzene	94	(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	1.0	0.50	µg/L					

Note: Analysis conducted using EPA Method 524.2 criteria.

Note: Bromomethane failed the method CV criteria of 70-130% @ 66.8% recovery.

ND = Not Detected

Roger Scholl

Kandy Saulmer

Walter Hirihm

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ANALYTICAL REPORT

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110 Job#: G005862/JPL Groundwater Monitoring Attn:David ConnerPhone:(818) 393-2808Fax:(614) 458-6641

Alpha Analytical Number: BMI09072906-04A Client I.D. Number: EB-6-7/28/09 Sampled: 07/28/09 Received: 07/29/09 Analyzed: 08/05/09

Volatile Organics by GC/MS

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting Li	mit
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 (DBC	P) 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	94	(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.

Note: Bromomethane failed the method CV criteria of 70-130% @ 66.8% recovery.

ND = Not Detected

Roger Scholl

Kandy Sandmer

Walter Amilian

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.



Report Date



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

Alpha Analytical Number: BMI09072906-05A Client I.D. Number: TB-6-7/28/09 Attn: David Conner Phone: (818) 393-2808 Fax: (614) 458-6641

Sampled: 07/28/09 Received: 07/29/09 Analyzed: 08/05/09

Volatile Organics by GC/MS

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting Li	mit
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 (DBC	P) 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	112	(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	ND	0.50	µg/L					

Note: Analysis conducted using EPA Method 524.2 criteria.

Note: Bromomethane failed the method CV criteria of 70-130% @ 66.8% recovery.

ND = Not Detected

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Report Date



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: BMI09072906

Project: G005862/JPL Groundwater Monitoring

• · · · · · · · · · · · · · · · · · · ·				
Alpha's Sample ID	Client's Sample ID	Matrix	рН	
09072906-01A	MW-17-4	Aqueous	2	
09072906-02A	MW-17-3	Aqueous	2	
09072906-03A	MW-17-2	Aqueous	2	
09072906-04A	EB-6-7/28/09	Aqueous	2	
09072906-05A	TB-6-7/28/09	Aqueous	2	



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Date: 11-Aug-09	QC Summary Report								
Method Blank File ID: 14		Туре	MBLK	Test Code: E Batch ID: 22		thod 314.0		: 08/06/2009 15:38	
Sample ID: MB-22492	Units : µg/L		Run ID	IC_3_090806	A		Prep Date:	08/06/2009	
Analyte	Result	PQL	Spk\	/al SpkRefVa	I %REC	C LCL(ME)	UCL(ME) RPDRe	fVal %RPD(Limit)	Qua
Perchlorate	ND		1						
Laboratory Fortified Blank		Туре	LFB	Test Code: E	EPA Me	thod 314.0)		
File ID: 15				Batch ID: 22	492		Analysis Date	: 08/06/2009 15:56	
Sample ID: LFB-22492	Units : µg/L		Run ID	: IC_3_090806	iΑ		Prep Date:	08/06/2009	
Analyte	Result	PQL	Spk\	/al SpkRefVa	I %REC	CLCL(ME)	UCL(ME) RPDRe	fVal %RPD(Limit)	Qua
Perchlorate	24.8		2	25	99	85	115		
Sample Matrix Spike		Туре	LFM	Test Code: E	EPA Me	thod 314.0			
File ID: 35				Batch ID: 22	492		Analysis Date	e: 08/06/2009 22:04	
Sample ID: 09080502-03ALFM	Units : µg/L		Run ID	: IC_3_090806	6A		Prep Date:	08/06/2009	
Analyte	Result	PQL	Spk\	/al SpkRefVa	I %RE(C LCL(ME)	UCL(ME) RPDRe	fVal %RPD(Limit)	Qua
Perchlorate	34.4		2	25 9.10	5 101	80	120		
Sample Matrix Spike Duplicate		Туре	LFMD	Test Code:	EPA Me	thod 314.0)		
File ID: 36				Batch ID: 22	492		Analysis Date	e: 08/06/2009 22:22	
Sample ID: 09080502-03ALFMD	Units : µg/L		Run ID	: IC_3_090806	6A		Prep Date:	08/06/2009	
Analyte	Result	PQL				C LCL(ME)	UCL(ME) RPDRe	efVal %RPD(Limit)	Qua
Perchlorate	34.7		2	25 9.10	5 102	80	120 34.	43 0.8(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: 11-Aug-09	QC Summary Report							Work Order: 09072906		
Method Blank File ID: 080609.B\45MB.D\		Туре І		est Code: E atch ID: 224		thod 200.8		sis Date:	08/07/2009 09:22	
Sample ID: MB-22445	Units : mg/L		Run ID: IC	P/MS_0908	07A		Prep D	Date:	07/30/2009	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qual
Chromium (Cr)	ND	0.00	5							
Laboratory Control Spike		Туре	LCS T	est Code: E	PA Met	hod 200.8				
File ID: 080609.B\45L1.D\			В	atch ID: 224	45K		Analys	sis Date:	08/07/2009 09:46	
Sample ID: LCS-22445	Units : mg/L		Run ID: IC	P/MS_0908	07A		Prep D	Date:	07/30/2009	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) F	RPDRef	Val %RPD(Limit)	Qual
Chromium (Cr)	0.0432	0.00	5 0.05		86	80	120			
Sample Matrix Spike		Туре І	VIS T	est Code: E	PA Met	hod 200.8				
File ID: 080609.B\MS.D\			В	atch ID: 224	45K		Analys	sis Date:	08/07/2009 10:08	
Sample ID: 09072442-08AMS	Units : mg/L		Run ID: IC	P/MS_0908	07A		Prep D	Date:	07/30/2009	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRef	val %RPD(Limit)	Qual
Chromium (Cr)	0.0498	0.00	5 0.05	0	99.6	80	120			
Sample Matrix Spike Duplicate		Type I	MSD T	est Code: E	PA Met	hod 200.8				
File ID: 080609.B\MSD.D\			В	atch ID: 224	45K		Analys	sis Date:	08/07/2009 10:14	
Sample ID: 09072442-08AMSD	Units : mg/L		Run ID: IC	P/MS_0908	07A		Prep D	Date:	07/30/2009	
Analyte	Result	PQL				LCL(ME)	UCL(ME) F	RPDRef	Val %RPD(Limit)	Qual
Chromium (Cr)	0.0458	0.00		0		80	120	0.049		

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.



Date: 10-Aug-09	UC Summary Report							
Method Blank File ID: 09080506.D		Type MBLK	Test Code: Batch ID: MS15W0805M	Analysis Date:	08/05/2009 11:54	_		
Sample ID: MBLK MS15W0805M	Units : µg/L	Run II	D: MSD_15_090805A	Prep Date:	08/05/2009			
Analyte	Result		Val SpkRefVal %REC LCL(ME	•		Qual		
Dichlorodifluoromethane	ND	0.5		, ()		-		
Chloromethane	ND	0.5						
Vinyl chloride	ND	0.5						
Chloroethane	ND	0.5						
Bromomethane	ND	1						
Trichlorofluoromethane 1,1-Dichloroethene	ND	0.5						
Dichloromethane	ND ND	0.5 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) cis-1,2-Dichloroethene	ND	10						
Bromochloromethane	ND ND	0.5 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 Carbon tetrachloride	ND	0.5						
Benzene	ND ND	0.5 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 trans-1,3-Dichloropropene	ND ND	0.5 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) Tetrachloroethene	ND	1						
1,1,1,2-Tetrachloroethane	ND ND	0.5 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 1,1,2,2-Tetrachloroethane	ND ND	0.5 0.5						
1,2,3-Trichloropropane	ND	0.5						
isopropylbenzene	ND	0.5						
Bromobenzene	ND	0.5						
n-Propylbenzene	ND	0.5						
4-Chlorotoluene 2-Chlorotoluene	ND	0.5						
1,3,5-Trimethylbenzene	ND	0.5						
tert-Butylbenzene	ND ND	0.5 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-lsopropyltoluene 1,2-Dichlorobenzene	ND ND	0.5						
n-Butylbenzene		0.5 0.5						
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5						
1,2,4-Trichlorobenzene	ND	1						
Naphthalene	ND	1						
Hexachlorobutadiene 1,2,3-Trichlorobenzene	ND	1						
Surr: 1,2-Dichloroethane-d4	ND 8.83	1	10 88 70	130				
Surr: Toluene-d8	11		10 110 70	130				
	••			·				



Date: 10-Aug-09		QC Summary Report							Work Ord 0907290	
Surr: 4-Bromofl	uorobenzene	9.51		10		95	70	130		
File ID: 090805			Type LC	Ba	est Code: atch ID: MS1 :)5M	•	08/05/2009 10:48	
Sample ID:	LCS MS15W0805M	Units : µg/L			SD_15_09080			Prep Date:	08/05/2009	0
Analyte	- 11-	Result	PQL		SpkRefVal %			UCL(ME) RPDRef	Val %RPD(Limit)	Qua
Dichlorodifluoro Chloromethane		12.8 8.94	1 2	10 10		128 89	70 70	130 130		
Virgi chloride		9.15	1	10		92	70	130		
Chloroethane		9.41	1	10		94	70	130		
Bromomethane		6.68	2	10		67	70(70)	130		L50
Trichlorofluoron		11.4	1	10		114	70	130		
1,1-Dichloroeth Dichloromethan		10.8 9.31	1 2	10 10		108 93	70 70	130 130		
trans-1,2-Dichlo		11	1	10		110	70	130		
Methyl tert-buty	· ·	9.22	0.5	10		92	70	130		
1,1-Dichloroeth		10	1	10		100	70	130		
cis-1,2-Dichloro Bromochlorome		10.4 10.3	1 1	10 10		104 103	70 70	130 130		
Chloroform	strano	10.3	1	10		100	70	130		
2,2-Dichloropro	pane	11	1	10		110	70	130		
1,2-Dichloroeth		9.24	1	10		92	70	130		
1,1,1-Trichloroe 1,1-Dichloropro		10.9	1	10		109	70 70	130 130		
Carbon tetrach	-	10.8 10.9	1 1	10 10		108 109	70 70	130		
Benzene		10	0.5	10		100	70	130		
Dibromomethar		9.58	1	10		96	70	130		
1,2-Dichloropro Trichloroethene	•	9.96	1	10		99.6	70	130		
Bromodichloron		11 8.87	1 1	10 10		110 89	70 70	130 130		
cis-1,3-Dichloro		9.01	1	10		90	70	130		
trans-1,3-Dichlo		8.52	1	10		85	70	130		
1,1,2-Trichloroe	ethane	9.81	1	10		98	70	130		
Toluene 1,3-Dichloropro	nane	10.1 9.92	0.5 1	10 10		101 99	70 70	130 130		
Dibromochloron		9.92	1	10		99 92	70	130		
1,2-Dibromoeth	. ,	19.4	2	20		97	70	130		
Tetrachloroethe		11.1	1	10		111	70	130		
1,1,1,2-Tetrach Chlorobenzene	-	10.3 10	1	10 10		103 100	70 70	130 130		
Ethylbenzene		10.6	1 0.5	10		100	70	130		
m,p-Xylene		11.1	0.5	10		111	70	130		
Bromoform		8.29	1	10		83	70	130		
Styrene o-Xylene		7.32	1	10		73	70	130		
1,1,2,2-Tetrach	loroethane	11 9.92	0.5 1	10 10		110 99	70 70	130 130		
1,2,3-Trichlorop		20	2	20		100	70	130		
Isopropylbenze		10.8	1	10		108	70	130		
Bromobenzene		9.63	1	10		96	70	130		
n-Propylbenzen 4-Chlorotoluene		10.7 10.6	1	10 10		107 106	70 70	130 130		
2-Chlorotoluene		10.3	1	10		103	70	130		
1,3,5-Trimethylt		10.2	1	10		102	70	130		
tert-Butylbenzei		10.4	1	10		104	70	130		
1,2,4-Trimethyll sec-Butylbenze		10.4 10.8	1	10		104	70 70	130		
1,3-Dichloroben		10.8	1 1	10 10		108 102	70 70	130 130		
1,4-Dichloroben	izene	9.79	1	10		98	70	130		
4-Isopropyltolue		10.6	1	10		106	70	130		
1,2-Dichloroben n-Butylbenzene		9.81	1	10		98 116	70 70	130		
	chloropropane (DBCP)	11.6 44.6	1 3	10 50		116 89	70 70	130 130		
1,2,4-Trichlorob		9.1	2	10		91	70	130		
Naphthalene		8.44	2	10		84	70	130		
Hexachlorobuta 1,2,3-Trichlorob		19.4	2	20		97 97	70 70	130		
Surr: 1,2-Dichlo		8.65 8.5	2	10 10		87 85	70 70	130 130		
Surr: Toluene-d		10.4		10		104	70	130		
Surr: 4-Bromof	uorobenzene	9.73		10		97	70	130		



Field: Descension Analysic bits: Constraints: Batch ID: MS150, Geoscia Analysic Bits: Constraints: Const	Date: 10-Aug-09	QC Summary Report					Work Order: 09072906				
Sample Poils: spit. Result: POL Result: POL Spit/val Spikevora KREC LCUME / UCLME / POR efval Spikevora Spike Develoation Outerodeflacomeflane 50.5 2.5 50 0 101 13 167 Outerodeflacomeflane 41.4 10 50 0 837 28 144 Othorsethane 41.4 10 50 0 87 39 144 Bronnenthane 43.8 10 50 0 87 139 144 Bronnenthane 48.8 10 50 0 88 68 130 Dehdomeflane 48.3 10 50 0 88 68 130 Dehdomeflane 48.3 10 50 0 97 70 130 Dehdomeflane 48.3 2.5 50 0 98 67 130 Dehdomeflane 43.3 2.5 50 0 91 68 130	Sample Matrix Spike		Type MS	S Test	Code:						
Aniye Result POL Spikerval %REC LCL(ME) UCLME) PPDRetVal %REPQL(Imit) Quait Choromethane 51.5 2 50 0 101 13 167 Choromethane 51.5 2 50 0 101 13 167 Simonethane 42.6 2.5 50 0 85 39 154 Simonethane 37.5 10 50 0 75 19 176 Trichhoromethane 43.8 10 50 0 88 88 130 Dichhoromethane 43.8 10 50 0 95 67 130 Dichhoromethane 43.8 2.5 50 0 95 67 130 Dichhoromethane 51.4 2.5 50 0 95 67 130 1.1-Dichoromethane 51.8 2.5 50 0 166 133 14 1.2-Dichoromethane 51.8 2.5 50 0 </td <td>File ID: 09080507.D</td> <td></td> <td></td> <td>Batch</td> <td>n ID: MS1</td> <td>5W080</td> <td>5M</td> <td>Analysis Dat</td> <td>e: 08/05/2009 12:17</td> <td></td>	File ID: 09080507.D			Batch	n ID: MS1	5W080	5M	Analysis Dat	e: 08/05/2009 12:17		
Dickbordhursmeithane 60.5 2.5 60 0 101 12 157 Choromethane 41.3 10 50 0 107 43 134 Virvl chorde 53.4 2.5 50 0 107 43 134 Choroethane 42.6 2.5 50 0 106 34 160 11-Dichtorothormethane 42.5 50 0 106 34 160 11-Dichtorothormethane 42.5 50 0 93 63 130 Trichtorothorothornethane 43.5 2.5 50 0 93 61 130 Gin-12-Dichtorothorothore 48.3 2.5 50 0 93 61 130 Chorothorothorothore 51.8 2.2.5 50 0 100 30 155 1.1.Dichtorothorothoro 52.8 2.5 50 0 101 63 130 Chorothorothoro 51.8 2.5	•	Units : µg/L	F					•			
Chormethane 41.3 10 50 0 83 26 14 Wh cholds 53 4 2.5 50 0 107 43 134 Choroethane 7.5 10 50 0 75 19 176 Trefnicolucromethane 7.5 10 50 0 75 19 176 Trefnicolucromethane 45.8 2.5 50 0 116 34 160 Trefnicolucromethane 45.8 2.5 50 0 116 34 160 Trefnicolucromethane 45.8 2.5 50 0 93 56 141 1.1.0.0.0.000000000000000000000000000		Result	PQL	SpkVal Sp	kRefVal	%REC	LCL(ME)	UCL(ME) RPDR	efVal %RPD(Limit)	Qual	
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Surr: Toluene-d8 51.7 50 103 70 130			10		0						
	Surr: Toluene-d8										
	Surr: 4-Bromofluorobenzene										



Date: 10-Aug-09	(QC Su	mmary	Report	t				Work Ord 0907290	
Sample Matrix Spike Duplicate		Туре М	SD Te	st Code:						
File ID: 09080508.D		. jpo int		tch ID: MS1	5W080)5M	Analy	sis Date: 08	/05/2009 12:39	
Sample ID: 09072905-01AMSD	Units : µg/L	F		D_15_0908			Prep I		05/2009	
Analyte	Result	PQL				LCL(ME)	•		%RPD(Limit)	Qual
Dichlorodifluoromethane	51.1	2.5	50	0	102	13	167	50.46	1.3(20)	
Chloromethane	43.9	10	50	0	88	28	145	41.25	6.2(20)	
Vinyl chloride Chloroethane	54.7 42.3	2.5 2.5	50 50	0	109 85	43 39	134 154	53.4 42.62	2.5(20) 0.7(20)	
Bromomethane	39.1	2.5	50	0	78	19	176	37.49	4.2(20)	
Trichlorofluoromethane	55.8	2.5	50	0	112	34	160	58.02	4.0(20)	
1,1-Dichloroethene Dichloromethane	46.8	2.5	50	0	94	60	130	49.5	5.6(20)	
traris-1,2-Dichloroethene	43.6 49.6	10 2.5	50 50	0 0	87 99	68 63	130 130	43.8 51.17	0.4(20) 3.1(20)	
Methyl tert-butyl ether (MTBE)	47	1.3	50	õ	94	56	141	46.28	1.5(20)	
1,1-Dichloroethane	46.1	2.5	50	0	92	61	130	46.64	1.1(20)	
cis-1,2-Dichloroethene Bromochloromethane	47.8 51.2	2.5 2.5	50 50	0 0	96 102	70 70	130 130	48.32 51.11	1.1(20) 0.2(20)	
Chloroform	47.1	2.5	50 50	0	94	67	130	47.56	1.1(20)	
2,2-Dichloropropane	48.3	2.5	50	0	97	30	152	50.2	3.9(20)	
1,2-Dichloroethane	44.9	2.5	50	0	90	60	135	45.54	1.5(20)	
1,1,1-Trichloroethane 1,1-Dichloropropene	49.3 48	2.5	50 50	0 0	99 96	59 63	137 130	51.79 50.58	4.9(20) 5.3(20)	
Carbon tetrachloride	40 49.2	2.5 2.5	50 50	0	90 98	50	130	50.56 52.84	5.3(20) 7.1(20)	
Benzene	45.9	1.3	50	Ő	92	67	130	47.02	2.4(20)	
Dibromomethane	46.7	2.5	50	0	93	69	133	45.55	2.5(20)	
1,2-Dichloropropane Trichloroethene	47	2.5	50	0	94 98	69 69	130	47.03	0.0(20)	
Bromodichloromethane	49.1 42.9	2.5 2.5	50 50	0	98 86	69 66	130 134	50.57 43.32	3.0(20) 1.1(20)	
cis-1,3-Dichloropropene	40.8	2.5	50	õ	82	63	130	40.94	0.4(20)	
trans-1,3-Dichloropropene	42	2.5	50	0	84	66	131	40.17	4.4(20)	
1,1,2-Trichloroethane Toluene	48.4	2.5	50	0	97	68	130	47.4	2.1(20)	
1,3-Dichloropropane	45.9 48.1	1.3 2.5	50 50	0	92 96	66 70	130 130	47.28 48.36	2.9(20) 0.6(20)	
Dibromochloromethane	44.6	2.5	50	õ	89	70	130	45.27	1.4(20)	
1,2-Dibromoethane (EDB)	94.7	10	100	0	95	70	130	92.91	2.0(20)	
Tetrầchloroethene 1,1,1,2-Tetrachloroethane	49.6	2.5	50	0	99	61	134	51.39	3.7(20)	
Chlorobenzene	48.8 46.4	2.5 2.5	50 50	0	98 93	70 70	130 130	50.22 47.21	2.9(20) 1.8(20)	
Ethylbenzene	49.6	1.3	50	2.45	94	68	130	50.76	2.3(20)	
m,p-Xylene	49.8	1.3	50	0	99.6	64	130	51.27	2.9(20)	
Bromoform Styrene	40.8	2.5	50	0	82	64	138	40.28	1.3(20)	
o-Xylene	34.7 50.8	2.5	50	0.6	68 102	69 70	130 130	34.66	0.1(20)	M2
1,1,2,2-Tetrachloroethane	49.6	1.3 2.5	50 50	0 0	99	70 65	130	51.1 49.71	0.5(20) 0.2(20)	
1,2,3-Trichloropropane	101	10	100	õ	101	70	130	97.86	2.8(20)	
Isopropylbenzene	47.8	2.5	50	0	96	64	138	50.23	5.0(20)	
Bromobenzene n-Propylbenzene	45.4 47.3	2.5 2.5	50 50	0 0	91 95	70 66	130 132	44.99 50.6	1.0(20) 6.8(20)	
4-Chlorotoluene	48.6	2.5	50 50	0	95	70	132	49.4	1.7(20)	
2-Chlorotoluene	47.2	2.5	50	Ō	94	70	130	48.7	3.1(20)	
1,3,5-Trimethylbenzene	46.3	2.5	50	0	93	66	136	48.35	4.4(20)	
tert-Butylbenzene 1,2,4-Trimethylbenzene	46.8 46.6	2.5 2.5	50 50	0 0	94 93	65 65	137 137	48.4 48.45	3.3(20)	
sec-Butylbenzene	40.0	2.5	50 50	0	93 95	66	137	48.45	3.9(20) 5.1(20)	
1,3-Dichlorobenzene	47.3	2.5	50	Ō	95	70	130	47.99	1.4(20)	
1,4-Dichlorobenzene	45.2	2.5	50	0	90	70	130	46.66	3.2(20)	
4-Isopropyltoluene 1,2-Dichlorobenzene	48.3 46.2	2.5	50	0	97 92	66 70	137 130	49.93 47.08	3.4(20)	
n-Butylbenzene	46.2 51.7	2.5 2.5	50 50	0 0	92 103	60	142	47.08 53.42	1.9(20) 3.2(20)	
1,2-Dibromo-3-chloropropane (DBCP)	214	15	250	õ	86	67	130	212.1	0.8(20)	
1,2,4-Trichlorobenzene	43.3	10	50	0	87	61	137	41.87	3.3(20)	
Naphthalene Hexachlorobutadiene	39.4 90.8	10	50 100	0	79 91	40	167	38.25	2.9(20)	
1,2,3-Trichlorobenzene	90.8 41.7	10 10	100 50	0	91 83	61 51	130 144	92.92 41.33	2.3(20) 0.9(20)	
Surr: 1,2-Dichloroethane-d4	44.5		50	5	89	70	130		0.0(20)	
Surr: Toluene-d8	51.4		50		103	70	130			
Surr: 4-Bromofluorobenzene	47.9		50		96	70	130			



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

QC Summary Report

Work Order: 09072906

10-Aug-09 Comments:

Date:

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.

L50 = Analyte recovery was below acceptance limits for the LCS, but was acceptable in the MS/MSD.

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

Matrix Type: AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) 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 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. Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Logged in by:	
abith Udcox	Signature
Elizabeth Adcox	Print Name
Alpha Analytical, Inc.	Company
7-29-09 1423	Date/Time

No security scals. Frozen ice, Temp Blank #5039 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). :

Comments:

										Requested Tests	fests	
Alpha Sample ID	Client Sample ID	Matr	Collection No. of Bottles Matrix Date Alpha Sub	No. of Alpha	No. of Bottles Alpha Sub	s TAT	314_W	METALS_I W	WETALS_D VOC_TIC_			Sample Remarks
BMI09072906-01A	MW-17-4	AQ	07/28/09 07:38	თ	0	10	Perchlorate	Ω	VOC by 524 Criteria	VOC by 524 Criteria		
BM109072906-02A	MW-17-3	AQ	07/28/09 08:05	Сл	0	10	Perchlorate	ç	VOC by 524 Criteria	VOC by 524 Criteria		
BMI09072906-03A	MW-17-2	AQ	07/28/09 08:35	СЛ	0	10	Perchlorate	ç	VOC by 524 Criteria	VOC by 524 Criteria		
BMI09072906-04A	EB-6-7/28/09	AQ	07/28/09 08:22	сл	0	10	Perchlorate	ç	VOC by 524 Criteria	VOC by 524 Criteria		
BM109072906-05A	TB-6-7/28/09	AQ	07/28/09 00:00	-	0	10			VOC by 524 Criteria	VOC by 524 Criteria		Reno Trip Blank 3/16/09

Client: Client's COC #: 25748 Р О Battelle Memorial Institute San Diego, CA 92110 Suite C-205 3990 Old Town Ave 218013 Job : G005862/JPL Groundwater Monitoring Report Attention Shane Walton Betsy Cutie David Conner CHAIN-OF-CUSTODY RECORD 255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778 TEL: (775) 355-1044 FAX: (775) 355-0406 Alpha Analytical, Inc. Phone Number (818) 393-2808 x (614) 424-4899 x (614) 424-4117 x cutiee@batelle.org waltons@battelle.org connerd@battelle.org EMail Address Report Due By: 5:00 PM On: 12-Aug-2009 WorkOrder : BMIS09072906 EDD Required : Yes Sampled by : Client C A Cooler Temp 4°C Samples Received 29-Jul-2009 29-Jul-2009 Date Printed

Billing Information :

N P ∃		₽ 0	Samples Collected From Which State? 25748 AZCAWAPage # (of
e, Zip <u>(arun (s</u> u umber		Phone (775) 355-1044 Fax (775) 355-0406 Analys	Analyses Required
SATIELLE / DAVID CONNER	P.O. # 218013	5 6 6 1 29200 July 3	Required QC Level?
OLD TOWN AVE.	EMail Address		VI (III VI
the CA GZI	726-7311		
Time Date Matrix Sampled by Sampled Sampled beckey 1 ah ID Number (. Office)	Heport Attention	TAT Field Containers	
BMT09072	H-11-4	2/ AN	
	2		
50. 548	MW-17-2	XXX	
HO.	EB-6-7/28/29	XXX	EQUIP. BLANE
Ŷ.	TB-6-7/28/09		TRIP BLANE
ADDITIONAL INSTRUCTIONS:			
Signature	Print Name	Company	Date Time
Relinquished by	MARCO MENDORA	INDIGHT ETC	002/ 20/85/7
Received by Complexin along	Elizabeth Hdcox	Alpha	7:29 09 1423
Received by			
Relinquished by			
Received by			
*Kev: AQ - Aqueous SO - Soit WA - Waste	OT - Other AR - Air **:	L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar	rr 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.



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

Date: 11-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 G	roundwater Monitoring		
Work Order:	BMI09073021		Cooler Temp:	4 °C
Alpha's	Sample ID	Client's Sample ID	Matrix	
09073	3021-01A	MW-23-4	Aqueous	6
09073021-02A		MW-23-3	Aqueous	3
09073	3021-03A	MW-23-2	Aqueous	S
09073	3021-04A	MW-23-1	Aqueous	3
09073	3021-05A	EB-7-7/29/09	Aqueous	3
09073	3021-06A	TB-7-7/29/09	Aqueous	5
		Manually Integrat	ed Analytes	
<u>Alpha's Sa</u>	mple ID	Test Reference		Analyte
0907302	21-03A	EPA Method 314.0		Perchlorate
0907302	21-04A	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/Chainof-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.

Walter Aridman Kandy Sauluer Roger Scholl

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 : 07/30/09

Job#: G005862/JPL Groundwater Monitoring

		Perchlorate by Ion Chromatography EPA Method 314.0		
	Parameter	Concentration	Reporting Limit	Date Date Sampled Analyzed
Client ID : MW-23-3 Lab ID : BMI09073021-02A	Perchlorate	ND	1.00 µg/L	07/29/09 08/06/09
Client ID : MW-23-2 Lab ID : BMI09073021-03A	Perchlorate	4.13	2.00 μg/L	07/29/09 08/06/09
Client ID : MW-23-1 Lab ID : BMI09073021-04A	Perchlorate	2.18	1.00 µg/L	07/29/09 08/06/09
Client ID : EB-7-7/29/09 Lab ID : BMI09073021-05A	Perchlorate	ND	I.00 μg/L	07/29/09 08/06/09

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.

ND = Not Detected

Kandy Saulmer Roger Scholl

Walter Hindun

8/12/09 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 : 07/30/09

Job#: G005862/JPL Groundwater Monitoring

			Metals by ICPMS EPA Method 200.8			
		Parameter	Concentration	Reporting Limit	Date Sampled	Date Analyzed
Client ID : Lab ID :	MW-23-4 BMI09073021-01A	Chromium (Cr)	ND	0.0050 mg/L	07/29/09	08/12/09
Client ID : Lab ID :	MW-23-3 BMI09073021-02A	Chromium (Cr)	0.0053	0.0050 mg/L	07/29/09	08/12/09
Client ID : Lab ID :	MW-23-2 BMI09073021-03A	Chromium (Cr)	ND	0.0050 mg/L	07/29/09	08/13/09
Client ID : Lab ID :	MW-23-1 BMI09073021-04A	Chromium (Cr)	ND	0.0050 mg/L	07/29/09	08/13/09
Client ID : Lab ID :	EB-7-7/29/09 BMI09073021-05A	Chromium (Cr)	ND	0.0050 mg/L	07/29/09	08/13/09

ND = Not Detected

Roger Scholl Kandy Saulan

Walter Hirihum

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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Report Date



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ANALYTICAL REPORT

David Conner (818) 393-2808 (614) 458-6641

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

Tentatively Identified Compounds - Volatile Organics by GC/MS

				Estimated			
		Parameter	Estimated	Reporting	Date	Date	Date
			Concentration	Limit	Received	Sampled	Analyzed
Client ID : Lab ID :	MW-23-3 BMI09073021-02A	* * * None Found * * *	ND	2.0 µg/L	07/30/09	07/29/09	08/05/09
Client ID : Lab ID :	MW-23-2 BMI09073021-03A	* * * None Found * * *	ND	2.0 µg/L	07/30/09	07/29/09	08/05/09
Client ID : Lab ID :	MW-23-1 BMI09073021-04A	* * * None Found * * *	ND	2.0 µg/L	07/30/09	07/29/09	08/05/09
Client ID : Lab ID :	E B-7-7/29/09 BMI09073021-05A	* * * None Found * * *	ND	2.0 μg/L	07/30/09	07/29/09	08/05/09
Client ID : Lab ID :	TB-7-7/29/09 BMI09073021-06A	* * * None Found * * *	ND	2.0 μg/L	07/30/09	07/29/09	08/05/09

Note: Analysis conducted using EPA Method 524.2 criteria. ND = Not Detected

Roger Scholl Kandy Dauln 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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Iter Arm

8/12/09

Report Date

Page 1 of 1



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ANALYTICAL REPORT

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

Alpha Analytical Number: BMI09073021-02A Client I.D. Number: MW-23-3 Attn:David ConnerPhone:(818) 393-2808Fax:(614) 458-6641

Sampled: 07/29/09 Received: 07/30/09 Analyzed: 08/05/09

Volatile Organics by GC/MS

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND	0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	µg/L
2	Chioromethane	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 (DBC	P) 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	110	(70-130)	%REC
31	Toluene	ND	0.50	µg/L	66	Surr: 4-Bromofluorobenzene	91	(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.

Note: Bromomethane failed the method CV criteria of 70-130% @ 66.8% recovery.

ND = Not Detected

Roger Scholl

Kandy Saulmen

Walter Alinihum

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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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
Job#: G005862/JPL Groundwater Monitoring	
Alpha Analytical Number: BMI09073021-03A Client I.D. Number: MW-23-2	Sampled: 07/29/09 Received: 07/30/09 Analyzed: 08/05/09

Volatile Organics by GC/MS

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting L	imit
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 (DBCF	P) ND	2.5	μg/L
25	Trichloroethene	1.3	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	111	(70-130)	%REC
31	Toluene	ND	0.50	µg/L	66	Surr: 4-Bromofluorobenzene	94	(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.

Note: Bromomethane failed the method CV criteria of 70-130% @ 66.8% recovery.

ND = Not Detected

Roger Scholl

Kandy Santur

Walter Hinihum

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Report Date



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

Alpha Analytical Number: BMI09073021-04A Client I.D. Number: MW-23-1
 Attn:
 David Conner

 Phone:
 (818) 393-2808

 Fax:
 (614) 458-6641

Sampled: 07/29/09 Received: 07/30/09 Analyzed: 08/05/09

Volatile Organics by GC/MS

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting L	imit
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	0.53	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 (DBCI	P) 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	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	92	(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	Tetrachioroethene	1.0	0.50	µg/L					

Note: Analysis conducted using EPA Method 524.2 criteria.

Note: Bromomethane failed the method CV criteria of 70-130% @ 66.8% recovery.

ND = Not Detected

Roger Scholl

Kandy Sandmer

Dalter Airihan

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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Report Date



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

Alpha Analytical Number: BMI09073021-05A Client I.D. Number: EB-7-7/29/09 Attn: David Conner Phone: (818) 393-2808 Fax: (614) 458-6641

Sampled: 07/29/09 Received: 07/30/09 Analyzed: 08/05/09

Volatile Organics by GC/MS

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting Li	imit
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 (DBCI	P) 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	86	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	µg/L	65	Surr: Toluene-d8	113	(70-130)	%REC
31	Toluene	ND	0.50	µg/L	66	Surr: 4-Bromofluorobenzene	91	(70-130)	%REC
32	,	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.

Note: Bromomethane failed the method CV criteria of 70-130% @ 66.8% recovery.

ND = Not Detected

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Report Date



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

Alpha Analytical Number: BMI09073021-06A Client I.D. Number: TB-7-7/29/09 Attn: David Conner Phone: (818) 393-2808 Fax: (614) 458-6641

Fax: (614) 458-6641

Sampled: 07/29/09 Received: 07/30/09 Analyzed: 08/05/09

Volatile Organics by GC/MS

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting L	imit
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	μ g /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 (DBCl	P) 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	112	(70-130)	%REC
31	Toluene	ND	0.50	µg/L	66	Surr: 4-Bromofluorobenzene	95	(70-130)	%REC
32		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.

Note: Bromomethane failed the method CV criteria of 70-130% @ 66.8% recovery.

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Report Date



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: BMI09073021

Project: G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	pH
09073021-02A	MW-23-3	Aqueous	2
09073021-03A	MW-23-2	Aqueous	2
09073021-04A	MW-23-1	Aqueous	2
09073021-05A	EB-7-7/29/09	Aqueous	2
09073021-06A	TB-7-7/29/09	Aqueous	2

8/12/09 Report Date



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

Date: 11-Aug-09		ork Order: 09073021
Method Blank File ID: 14	Type MBLK Test Code: EPA Method 314.0 Batch ID: 22492 Analysis Date: 08/06/200	9 15:38
Sample ID: MB-22492	Units : µg/L Run ID: IC_3_090806A Prep Date: 08/06/2009	9
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: 22492 Analysis Date: 08/06/200	9 15.56
Sample ID: LFB-22492 Analyte	Units : µg/L Run ID: IC_3_090806A Prep Date: 08/06/2009 Result PQL SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(9
Perchlorate	24.8 2 25 99 85 115	
Sample Matrix Spike File ID: 35	Type LFM Test Code: EPA Method 314.0 Batch ID: 22492 Analysis Date: 08/06/200	9 22:04
Sample ID: 09080502-03ALFM	Units : µg/L Run ID: IC_3_090806A Prep Date: 08/06/2009	9
Analyte	Result PQL SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD((Limit) Qual
Perchlorate	34.4 2 25 9.105 101 80 120	
Sample Matrix Spike Duplicate	e Type LFMD Test Code: EPA Method 314.0	
File ID: 36	Batch ID: 22492 Analysis Date: 08/06/200	9 22:22
Sample ID: 09080502-03ALFMD	Ο Units : μg/L Run ID: IC_3_090806A Prep Date: 08/06/2009	9
Analyte	Result PQL SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD((Limit) Qual
Perchlorate		(15)

Comments:

4.2

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.



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

Date: 14-Aug-09	(QC S	umma	ry Repo	rt				Work Orde 09073021	
Method Blank File ID: 081209.B\115SMPL.D\ Sample ID: MB-22456 Analyte	Units : mg/L Result	Type I	Run ID:	Test Code: E Batch ID: 224 ICP/MS_090 al SpkRefVa	156K 812E		Prep	Date:	08/12/2009 22:48 08/03/2009 Val %RPD(Limit)	Qual
Chromium (Cr)	ND	0.00								
Laboratory Control Spike File ID: 081209.B\116_LCS.D\ Sample ID: LCS-22456 Analyte	Units : mg/L Result	Type I	Run ID:	Test Code: E Batch ID: 224 ICP/MS_090 al SpkRefVa	456K 812E		Prep	Date:	08/12/2009 22:54 08/03/2009 Val %RPD(Limit)	Qual
Chromium (Cr)	0.0512	0.00			102	80	120			
Sample Matrix Spike File ID: 081209.B\120SMPL.D\ Sample ID: 09073103-03AMS Analyte	Units : mg/L Result	Type I	Run ID:	Test Code: E Batch ID: 22 4 ICP/MS_090 al SpkRefVa	456K 812E		Prep	Date:	08/12/2009 23:16 08/03/2009 Val %RPD(Limit)	Qual
Chromium (Cr)	0.051	0.00) 102	80	120			
Sample Matrix Spike Duplicate File ID: 081209.B\121SMPL.D\ Sample ID: 09073103-03AMSD Analyte	Units : mg/L Result	Type I	Run ID:	Test Code: E Batch ID: 22 4 ICP/MS_090 al SpkRefVa	456K 812E		Prep	Date:	08/12/2009 23:22 08/03/2009 Val %RPD(Limit)	Qual
Chromium (Cr)	0.0488	0.00		· · · · · · · · · · · · · · · · · · ·) 98	80	120	0.050		<u> </u>

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.



Date: 10-Aug-09		QC Sumn	nary Report	Work C 09073	
Method Blank		Type MBLK	Test Code:		
File ID: 09080506.D			Batch ID: MS15W0805M	Analysis Date: 08/05/2009 11:	54
Sample ID: MBLK MS	:15W0805M Units : µg/L	. Run I	D: MSD_15_090805A	Prep Date: 08/05/2009	
Analyte	Result	PQL Spl	Val SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual
Dichlorodifluoromethane	ND	0.5			
Chloromethane	ND	1			
Vinyl chloride	ND	0.5			
Chloroethane Bromomethane	ND ND	0.5			
Trichlorofluoromethane	ND	1 0.5			
1,1-Dichloroethene	ND	0.5			
Dichloromethane	ND	1			
Freon-113	ND	0.5			
trans-1,2-Dichloroethene	ND ND	0.5			
Methyl tert-butyl ether (MT 1,1-Dichloroethane	BE) ND ND	0.5 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			
1,1,1-Trichloroethane	ND ND	0.5 0.5			
1,1-Dichloropropene	ND	0.5			
Carbon tetrachloride	ND	0.5			
Benzene	ND	0.5			
Dibromomethane	ND	0.5			
1,2-Dichloropropane Trichloroethene	ND	0.5			
Bromodichloromethane	ND ND	0.5 0.5			
4-Methyl-2-pentanone (MIE	SK) 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 Dibromochloromethane	ND ND	0.5 0.5			
1,2-Dibromoethane (EDB)	ND	0.5			
Tetrachloroethene	ND	0.5			
1,1,1,2-Tetrachloroethane	ND	0.5			
Chlorobenzene	ND	0.5			
Ethylbenzene	ND	0.5			
m,p-Xylene Bromoform	ND ND	0.5			
Styrene	ND	0.5 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 n-Propylbenzene	ND ND	0.5			
4-Chlorotoluene	ND	0.5 0.5			
2-Chlorotoluene	ND	0.5			
1,3,5-Trimethylbenzene	ND	0.5			
tert-Butylbenzene	ND	0.5			
1,2,4-Trimethylbenzene sec-Butylbenzene	ND	0.5			
1,3-Dichlorobenzene	ND ND	0.5			
1,4-Dichlorobenzene	ND	0.5 0.5			
4-Isopropyltoluene	ND	0.5			
1,2-Dichlorobenzene	ND	0.5			
n-Butylbenzene	ND	0.5			
1,2-Dibromo-3-chloropropa		2.5			
1,2,4-Trichlorobenzene Naphthalene	ND	1			
Hexachlorobutadiene	ND ND	1 1			
1,2,3-Trichlorobenzene	ND	1			
Surr: 1,2-Dichloroethane-d	4 8.83	-	10 88 70	130	
Surr: Toluene-d8	11		10 110 70	130	



Alpha Analytical, Inc.

Date: 10-Aug-09		(QC Su	mmar	y Repor	ť			Work Ord 0907302	
Surr: 4-Bromot	fluorobenzene	9.51		10		95	70	130		
File ID: 09080	Control Spike 503.D		Type LC	Ba	est Code: atch ID: MS 1		5M	•	08/05/2009 10:48	
Sample ID:	LCS MS15W0805M	Units : µg/L			SD_15_0908			Prep Date:	08/05/2009	<u> </u>
Analyte		Result	PQL		SpkRefVal			UCL(ME) RPDRef	Val %RPD(Limit)	Qual
Dichlorodifluor Chloromethan		12.8 8.94	1 2	10 10		128 89	70 70	130 130		
Vinyl chloride	6	9.15	1	10		92	70	130		
Chloroethane		9.41	1	10		94	70	130		
Bromomethan	-	6.68	2	10		67	70(70)	130		L50
Trichlorofluoro 1,1-Dichloroeth		11.4 10.8	1 1	10 10		114 108	70 70	130 130		
Dichlorometha		9.31	2	10		93	70	130		
trans-1,2-Dichl		11	1	10		110	70	130		
	yl ether (MTBE)	9.22	0.5	10		92	70	130		
1,1-Dichloroett cis-1,2-Dichlor		10 10.4	1	10 10		100 104	70 70	130 130		
Bromochlorom		10.4	1	10		103	70	130		
Chloroform		10	1	10		100	70	130		
2,2-Dichloropro	-	11	1	10		110	70	130		
1,2-Dichloroeth 1,1,1-Trichloro		9.24 10.9	1 1	10 10		92 109	70 70	130 130		
1,1-Dichloropro		10.8	1	10		108	70	130		
Carbon tetrach	loride	10.9	1	10		109	70	130		
Benzene Dibromometha	220	10	0.5	10		100	70	130		
1,2-Dichloropro		9.58 9.96	1 1	10 10		96 99.6	70 70	130 130		
Trichloroethen	•	11	1	10		110	70	130		
Bromodichloro		8.87	1	10		89	70	130		
cis-1,3-Dichlor		9.01	1	10		90	70	130		
trans-1,3-Dichl 1,1,2-Trichloro		8.52 9.81	1 1	10 10		85 98	70 70	130 130		
Toluene	oundito	10.1	0.5	10		101	70	130		
1,3-Dichloropro	•	9.92	1	10		99	70	130		
Dibromochloro 1,2-Dibromoet		9.2	1	10		92	70	130		
Tetrachloroeth		19.4 11.1	2 1	20 10		97 111	70 70	130 130		
1,1,1,2-Tetrack		10.3	1	10		103	70	130		
Chlorobenzene	e	10	1	10		100	70	130		
Ethylbenzene		10.6	0.5	10		106	70	130		
m,p-Xylene Bromoform		11.1 8.29	0.5 1	10 10		111 83	70 70	130 130		
Styrene		7.32	1	10		73	70	130		
o-Xylene		11	0.5	10		110	70	130		
1,1,2,2-Tetrach 1,2,3-Trichloro		9.92 20	1	10		99 100	70 70	130 130		
Isopropylbenze		10.8	2 1	20 10		100	70	130		
Bromobenzene	e	9.63	1	10		96	70	130		
n-Propylbenze		10.7	1	10		107	70	130		
4-Chlorotoluen 2-Chlorotoluen		10.6 10.3	1 1	10 10		106 103	70 70	130 130		
1,3,5-Trimethy		10.3	1	10		103	70	130		
tert-Butylbenze		10.4	1	10		104	70	130		
1,2,4-Trimethy		10.4	1	10		104	70	130		
sec-Butylbenze 1,3-Dichlorobe		10.8 10.2	1 1	10 10		108 102	70 70	130 130		
1,4-Dichlorobe		9.79	1	10		98	70	130		
4-Isopropyltolu		10.6	1	10		106	70	130		
1,2-Dichlorobe		9.81	1	10		98	70	130		
n-Butylbenzen 1,2-Dibromo-3	e -chloropropane (DBCP)	11.6 44.6	1 3	10 50		116 89	70 70	130 130		
1,2,4-Trichloro		9.1	2	10		91	70	130		
Naphthalene		8.44	2	10		84	70	130		
Hexachlorobut 1,2,3-Trichloro		19.4 8.65	2	20		97 97	70 70	130		
Surr: 1,2-Dichl		8.65 8.5	2	10 10		87 85	70 70	130 130		
Surr: Toluene-	d8	10.4		10		104	70	130		
Surr: 4-Bromot	tluorobenzene	9.73		10		97	70	130		



Date: 10-Aug-09	(QC Su	mmary	/ Repor	t			Work Ord 0907302	
Sample Matrix Spike		Type MS	s Te	est Code:					
File ID: 09080507.D			Ba	tch ID: MS1	5W080)5M	Analysis Dat	e: 08/05/2009 12:17	
Sample ID: 09072905-01AMS	Units : µg/L	F	Run ID: MS	SD_15_0908	305A		Prep Date:	08/05/2009	
Analyte	Result	PQL						efVal %RPD(Limit)	Qua
Dichlorodifluoromethane	50.5	2.5	50	0	101	13	167		
Chloromethane	41.3	10	50	0	83	28	145		
Vinyl chloride Chloroethane	53.4	2.5	50	0	107	43	134		
Bromomethane	42.6	2.5	50	0	85 75	39 10	154 176		
Trichlorofluoromethane	37.5 58	10 2.5	50 50	0	75 116	19 34	160		
1,1-Dichloroethene	49.5	2.5	50 50	0	99	54 60	130		
Dichloromethane	49.5	2.5	50 50	0	99 88	68	130		
trans-1,2-Dichloroethene	51.2	2.5	50 50	0	102	63	130		
Methyl tert-butyl ether (MTBE)	46.3	1.3	50	0	93	56	141		
1,1-Dichloroethane	46.6	2.5	50	Ő	93	61	130		
cis-1,2-Dichloroethene	48.3	2.5	50	ŏ	97	70	130		
Bromochloromethane	51.1	2.5	50	õ	102	70	130		
Chloroform	47.6	2.5	50	õ	95	67	130		
2,2-Dichloropropane	50.2	2.5	50	õ	100	30	152		
1,2-Dichloroethane	45.5	2.5	50	ŏ	91	60	135		
1,1,1-Trichloroethane	51.8	2.5	50	Ō	104	59	137		
1,1-Dichloropropene	50.6	2.5	50	Ō	101	63	130		
Carbon tetrachloride	52.8	2.5	50	0	106	50	147		
Benzene	47	1.3	50	0	94	67	130		
Dibromomethane	45.6	2.5	50	0	91	69	133		
1,2-Dichloropropane	47	2.5	50	0	94	69	130		
Trichloroethene	50.6	2.5	50	0	101	69	130		
Bromodichloromethane	43.3	2.5	50	0	87	66	134		
cis-1,3-Dichloropropene	40.9	2.5	50	0	82	63	130		
trans-1,3-Dichloropropene	40.2	2.5	50	0	80	66	131		
1,1,2-Trichloroethane	47.4	2.5	50	0	95	68	130		
Toluene	47.3	1.3	50	0	95	66	130		
1,3-Dichloropropane	48.4	2.5	50	0	97	70	130		
Dibromochloromethane	45.3	2.5	50	0	91	70	130		
1,2-Dibromoethane (EDB)	92.9	10	100	0	93	70	130		
Tetrachloroethene	51.4	2.5	50	0	103	61	134		
1,1,1,2-Tetrachloroethane	50.2	2.5	50	0	100	70	130		
Chlorobenzene	47.2	2.5	50	0	94	70	130		
Ethylbenzene	50.8	1.3	50	2.45	97	68	130		
m,p-Xylene Bromoform	51.3	1.3	50	0	103	64	130		
Styrene	40.3	2.5	50	0	81	64 69	138 130		M2
-	34.7	2.5	50	0.6	68				IVIZ
o-Xylene	51.1	1.3	50	0	102	70	130		
1,1,2,2-Tetrachloroethane 1,2,3-Trichloropropane	49.7	2.5	50	0	99	65	131		
Isopropylbenzene	97.9 50.2	10	100	0	98 100	70 64	130 138		
Bromobenzene	45	2.5 2.5	50	0 0	90	04 70	130		
n-Propylbenzene	43 50.6	2.5 2.5	50 50	0	90 101	66	130		
4-Chlorotoluene	49.4	2.5	50 50	0	99	70	130		
2-Chlorotoluene	49.4	2.5	50 50	0	95 97	70	130		
1,3,5-Trimethylbenzene	48.4	2.5	50 50	0	97	66	136		
tert-Butylbenzene	48.4	2.5	50	0	97	65	137		
1,2,4-Trimethylbenzene	48.5	2.5	50	0	97	65	137		
sec-Butylbenzene	50	2.5	50	Ő	99.9	66	134		
1,3-Dichlorobenzene	48	2.5	50	ŏ	96	70	130		
1,4-Dichlorobenzene	46.7	2.5	50	õ	93	70	130		
4-Isopropyltoluene	49.9	2.5	50	Ō	99.9	66	137		
1,2-Dichlorobenzene	47.1	2.5	50	Ō	94	70	130		
n-Butylbenzene	53.4	2.5	50	Ō	107	60	142		
1,2-Dibromo-3-chloropropane (DBCP)	212	15	250	Ō	85	67	130		
1,2,4-Trichlorobenzene	41.9	10	50	Ő	84	61	137		
Naphthalene	38.3	10	50	Ō	77	40	167		
Hexachlorobutadiene	92.9	10	100	0	93	61	130		
1,2,3-Trichlorobenzene	41.3	10	50	0	83	51	144		
Surr: 1,2-Dichloroethane-d4	45.1		50		90	70	130		
Surr: Toluene-d8	51.7		50		103	70	130		
Surr: 4-Bromofluorobenzene	47.8		50		96	70	130		



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Alpha Analytical, Inc.

Date: 10-Aug-09	(QC Su	immary	y Repor	t				Work Ord 0907302	
Sample Matrix Spike Duplicate		Type M		est Code:						
File ID: 09080508.D			Ba	tch ID: MS	15W080)5M	Analys	sis Date: 0	3/05/2009 12:39	
Sample ID: 09072905-01AMSD	Units : µg/L	I	Run ID: MS	SD_15_090	805A		Prep [Date: 08	/05/2009	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qua
Dichlorodifluoromethane	51.1	2.5	. 50	0	102	13	167	50.46	1.3(20)	
Chloromethane	43.9	10	50	0	88	28	145	41.25	6.2(20)	
Vinyl chloride	54.7	2.5	50	Ő	109	43	134	53.4	2.5(20)	
Chloroethane	42.3	2.5	50	0	85	39	154	42.62	0.7(20)	
Bromomethane	39.1	10	50	0	78	19	176	37.49	4.2(20)	
Trichlorofluoromethane	55.8	2.5	50	0	112	34	160	58.02	4.0(20)	
1,1-Dichloroethene	46.8	2.5	50	0	94	60	130	49.5	5.6(20)	
Dichloromethane	43.6	10	50	0	87	68	130	43.8	0.4(20)	
trans-1,2-Dichloroethene	49.6	2.5	50	0	99	63	130	51.17	3.1(20)	
Methyl tert-butyl ether (MTBE)	47	1.3	50	0	94	56	141	46.28	1.5(20)	
1,1-Dichloroethane	46.1	2.5	50	0	92	61	130	46.64	1.1(20)	
cis-1,2-Dichloroethene	47.8	2.5	50	0	96	70	130	48.32	1.1(20)	
Bromochloromethane	51.2	2.5	50	0	102	70	130	51.11	0.2(20)	
Chloroform	47.1	2.5	50	0	94	67	130	47.56	1.1(20)	
2,2-Dichloropropane	48.3	2.5	50	0	97	30	152	50.2	3.9(20)	
1,2-Dichloroethane	44.9	2.5	50	0	90	60 50	135	45.54	1.5(20)	
1,1,1-Trichloroethane 1,1-Dichloropropene	49.3	2.5	50	0	99	59	137	51.79	4.9(20) 5.3(20)	
Carbon tetrachloride	48	2.5	50 50	0	96 98	63 50	130 147	50.58 52.84	5.3(20) 7.1(20)	
Benzene	49.2 45.9	2.5 1.3	50 50	0	98 92	50 67	147	52.84 47.02	2.4(20)	
Dibromomethane	46.7	2.5	50 50	0	92 93	69	133	45.55	2.5(20)	
1,2-Dichloropropane	40.7	2.5	50 50	0	93 94	69	130	45.55	0.0(20)	
Trichloroethene	47 49.1	2.5	50 50	0	9 4 98	69	130	50.57	3.0(20)	
Bromodichloromethane	42.9	2.5	50	0	86	66	134	43.32	1.1(20)	
cis-1,3-Dichloropropene	40.8	2.5	50	0	82	63	130	40.94	0.4(20)	
trans-1,3-Dichloropropene	42	2.5	50	Ő	84	66	131	40.17	4.4(20)	
1,1,2-Trichloroethane	48.4	2.5	50	Ő	97	68	130	47.4	2.1(20)	
Toluene	45.9	1.3	50	Ō	92	66	130	47.28	2.9(20)	
1,3-Dichloropropane	48.1	2.5	50	Ō	96	70	130	48.36	0.6(20)	
Dibromochloromethane	44.6	2.5	50	0	89	70	130	45.27	1.4(20)	
1,2-Dibromoethane (EDB)	94.7	10	100	0	95	70	130	92.91	2.0(20)	
Tetrachloroethene	49.6	2.5	50	0	99	61	134	51.39	3.7(20)	
1,1,1,2-Tetrachloroethane	48.8	2.5	50	0	98	70	130	50.22	2.9(20)	
Chlorobenzene	46.4	2.5	50	0	93	70	130	47.21	1.8(20)	
Ethylbenzene	49.6	1.3	50	2.45	94	68	130	50.76	2.3(20)	
m,p-Xylene	49.8	1.3	50	0	99.6	64	130	51.27	2.9(20)	
Bromoform	40.8	2.5	50	0	82	64	138	40.28	1.3(20)	
Styrene	34.7	2.5	50	0.6	68	69	130	34.66	0.1(20)	M2
o-Xylene	50.8	1.3	50	0	102	70	130	51.1	0.5(20)	
1,1,2,2-Tetrachloroethane	49.6	2.5	50	0	99	65	131	49.71	0.2(20)	
1,2,3-Trichloropropane	101	10	100	0	101	70	130	97.86	2.8(20)	
Isopropylbenzene	47.8	2.5	50	0	96	64	138	50.23	5.0(20)	
Bromobenzene	45.4	2.5	50	0	91	70	130	44.99	1.0(20)	
n-Propylbenzene	47.3	2.5	50	0	95	66	132	50.6	6.8(20)	
4-Chlorotoluene	48.6	2.5	50	0	97	70	130	49.4	1.7(20)	
2-Chlorotoluene	47.2	2.5	50	0	94	70	130	48.7	3.1(20)	
1,3,5-Trimethylbenzene	46.3	2.5	50	0		66 65	136	48.35	4.4(20)	
tert-Butylbenzene 1,2,4-Trimethylbenzene	46.8	2.5	50 50	0		65 65	137	48.4	3.3(20)	
sec-Butylbenzene	46.6 47.5	2.5 2.5	50 50	0 0		65 66	137 134	48.45 49.96	3.9(20) 5.1(20)	
1.3-Dichlorobenzene	47.5 47.3	2.5 2.5	50 50	0	95 95	66 70	134	49.90 47.99	5.1(20) 1.4(20)	
1,4-Dichlorobenzene	47.3 45.2	2.5 2.5	50 50	0		70	130	47.99	3.2(20)	
4-isopropyltoluene	45.2	2.5	50 50	0		66	130	49.93	3.4(20)	
1,2-Dichlorobenzene	46.2	2.5	50	0		70	130	47.08	1.9(20)	
n-Butylbenzene	51.7	2.5	50	0	103	60	142	53.42	3.2(20)	
1,2-Dibromo-3-chloropropane (DBCP)	214	15	250	0		67	130	212.1	0.8(20)	
1,2,4-Trichlorobenzene	43.3	10	50	Ő		61	137	41.87	3.3(20)	
Naphthalene	39.4	10	50	Ő		40	167	38.25	2.9(20)	
Hexachlorobutadiene	90.8	10	100	Ő		61	130	92.92	2.3(20)	
1,2,3-Trichlorobenzene	41.7	10	50	Ő		51	144	41.33	0.9(20)	
Surr: 1,2-Dichloroethane-d4	44.5		50	•	89	70	130		• •	
Surr: Toluene-d8	51.4		50		103	70	130			
Surr: 4-Bromofluorobenzene	47.9		50		96	70	130			



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

QC Summary Report

Work Order: 09073021

10-Aug-09 Comments:

Date:

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.

L50 = Analyte recovery was below acceptance limits for the LCS, but was acceptable in the MS/MSD.

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

Billing Information :			CH	AIN	-OF		CHAIN-OF-CUSTODY RECO	DY	RECO	ORD	C.A	Page:	1 of 1
					Alp	ha A	Alpha Analytical, Inc.	al, In	Ċ.		WorkOrder :	WorkOrder : BMIS09073021	21
-				L L	EL: (775) 355-10	TEL: (775) 355-1044 FAX: (775) 355-0406	ns, incrau 775) 355-	0406	G	Report Due By: 5:00 PM On: 13-Aug-09	5:00 PM On : 1:	3-Aug-09
Client:			Report Attention		Pho	Phone Number	nber	EMail /	EMail Address				
Battelle Memorial Institute	nstitute		David Conner	-	(81)	(818) 393-2808	308 x	connerd(connerd@battelle.org				
3990 Old Town Ave	e		Betsy Cutie		(61,	(614) 424-4899	x 668	cutice@batelle.org	atelle.org		EDD Required : Yes	č	
San Diego, CA 92110	110		Shane Walton	2	(61,	(614) 424-4117 x	l17 x	waltons@	waltons@battelle.org		Sampled by : Client	ient	
PO: 218013											Cooler Temp	Samples Received	Date Printed
Client's COC #: 25744		Job :	G005862/JPL Groundwater Monitoring	L Grou	ndwater	Monitori	ing				4 °C	30-Jul-09	30-Jul-09
QC Level: DS4	= DOD QC Required : Final Rpt, MBLK, InitCal/ConCal data, LCS, MS/MSD With Surrogates	-inal Rµ	ot, MBLK, Ini	tCal/Co	nCal da	ta, LCS,	MS/MSD \	With Surr	ogates				
							1 1			Requested Tests	1 Tests		
Sample ID	Sample ID	Matri	Matrix Date	Alpha	Alpha Sub	TAT	3 			-10		Samp	Sample Remarks
BMI09073021-01A	MW-23-4	ð	07/29/09 07:34	N	0	10		ç					MS/MSD
BMI09073021-02A	MW-23-3	Ą	07/29/09 07:58	თ	0	10	Perchlorate	Cr	VOC by 524 VOC by 524 Criteria Criteria	VOC by 524 Criteria			
BMI09073021-03A	MW-23-2	Ą	07/29/09 08:18	თ	0	10	Perchlorate	ç	VOC by 524 VOC by 524 Criteria Criteria	VOC by 524 Criteria			
BMI09073021-04A	MW-23-1	ð	07/29/09 08:46	сл	0	10	Perchlorate	ណ្ដ	VOC by 524 VOC by 524 Criteria Criteria	VOC by 524 Criteria			- - -
BMI09073021-05A	EB-7-7/29/09	Ą	07/29/09 08:32	сл	0	10	Perchlorate	ç	VOC by 524 VOC by 524 Criteria Criteria	VOC by 524 Criteria			-
BMI09073021-06A	TB-7-7/29/09	Ą	07/29/09 00:00		0	10			VOC by 524 VOC by 524 Criteria Criteria	VOC by 524 Criteria		Reno Trip	Reno Trip Blank 3/16/09
												and the second	

Comments: No security seals. Frozen ice. Temp Blank #7606 received @ 4°C. Perchlorate RL of 1.0 ug/L. Level IV OC. Samples should be used as the control spike sample if possible (I.E.: MS/MSD). :

Signature

Logged in by: C Munay

monary

Print Name Alpha Analytical, Inc. Company 7/30/09 1105 Date/Time

Matrix Type: AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) 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 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. Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tediar B-Brass P-Plastic OT-Other

*Key: AQ - Aqueous SO - Soil WA - Waste NOTE: Samples are discarded 60 days after results are in of the above samples is applicable only to those samples	Received by	Relinquished by	Received by	Relinquished by	Received by	Relinquished by	Signature	ADDITIONAL INSTRUCTIONS:		20 - 1 1 - 06	82 05	ho / 9+8			734 Hoda AU BM/09073021-01	Time Date Matrix Sampled by Sampled Sampled Below Lab ID Number (Use Only)	DIEGO, CA 92/10	Client Name BATTELLE SAVID CONNER Address 3995 SLD TOKN AVE. L-WS	Billing Information: Name <u>Geraco Torreuns Batterne</u> Address <u>Sos kund ave</u> City, State, Zip <u>Corumans OH H3601</u> Phone Number <u>Fax</u>
<pre>'aste OT - Other AR - Air **: are reported unless other arrangements are main nples received by the laboratory with this coc. 1</pre>					K MUNAUS	MARCO MENDOZA	Print Name			6 TR - 7 - 7/29/29	5 EB-7-7/29/09	1 MW-23 - 1	Mw-	2 MW-23-3	1 Mw-23-4	Report Attention Sample Description			
*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.					AAA	INSIGHT EEC	Company				X X X	× ×	X X X	1 VP /5 X X	x 7/ d	al and type of containers See below	Fax #	E E E 238 2000 # dor	Alpha Analytical, Inc. 255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778 Phone (775) 355-1044 Fax (775) 355-0406
r B-Brass P-Plastic OT-Other sed of at client expense. The report for the analysis or the report.				,	7/30/09 1045	0129/25/230	Date Time			TRIP & LANC	EQUIP. BLANC				NS	Giobal ID # REMARKS		Required OC Level?	Samples Collected From Which State? 25744 AZCANVWAPage # of _/_ IDOROTHERPage # of _/



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Date: 12-Aug-09

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

Suite C-205

CASE NARRATIVE

Project: Work Order:	G005862/JPL C BMI09073102	roundwater Monitoring	Cooler Temp: 2 °C	
Alpha's	Sample ID	Client's Sample ID	Matrix	
09073102-01A		MW-11-4	Aqueous	
09073102-02A		MW-11-3	Aqueous	
09073102-03A		MW-11-2	Aqueous	
09073	102-04A	MW-11-1	Aqueous	
		Manually Integrated	Analytes	
Alpha's Sar	nple ID	Test Reference	Analyte	
NO	NE			

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

Walter Hinihum Kandy Saulmer Roger Scholl



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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 : 07/31/09

Job#: G005862/JPL Groundwater Monitoring

Anions by IC EPA Method 300.0 / 9056								
	Parameter	Concentration	Reporting Limit	Date / Time Sampled	Date / Time Analyzed			
Client ID : MW-11-1	Nitrite (NO2) - N	ND	0.25 mg/L	07/30/09 11:49	07/31/09 13:30			
Lab ID : BMI09073102-04A	Nitrate (NO3) - N Phosphate, ortho - P	0.99 ND	0.25 mg/L 0.25 mg/L	07/30/09 11:49 07/30/09 11:49				

ND = Not Detected

Roger Scholl

Kandy Saulner

lter Acrim

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.



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

-14

 Attn:
 David Conner

 Phone:
 (818) 393-2808

 Fax:
 (614) 458-6641

 Date Received : 07/31/09

Job#: G005862/JPL Groundwater Monitoring

			Anions by IC EPA Method 300.0 / 9056		
		Parameter	Concentration	Reporting Limit	Date Date Sampled Analyzed
Client ID :	MW-11-1				
Lab ID :	BMI09073102-04A	Chloride	24	0.50 mg/L	07/30/09 07/31/09
1. A.S.		Sulfate (SO4)	55	0.50 mg/L	07/30/09 07/31/09

Roger Scholl

Kandy Daulun

Walter Hinkow

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.

8/13/09 **Report Date**

G005862/JPL Groundwater Monitoring



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ANALYTICAL REPORT

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

David Conner Attn: Phone: (818) 393-2808 (614) 458-6641 Fax: Date Received: 07/31/09

Job#: G005862/JPL Groundwater Monitoring

			Perchlorate by Ion Chromatography EPA Method 314.0		
		Parameter	Concentration	Reporting Limit	Date Date Sampled Analyzed
Client ID : Lab ID :	MW-11-4 BMI09073102-01A	Perchlorate	ND	1.00 µg/L	07/30/09 08/06/09
Client ID : Lab ID :	MW-11-3 BMI09073102-02A	Perchlorate	ND	1.00 µg/L	07/30/09 08/06/09
Client ID : Lab ID :	MW-11-2 BMI09073102-03A	Perchlorate	ND	1.00 µg/L	07/30/09 08/06/09
Client ID : Lab ID :	MW-11-1 BMI09073102-04A	Perchlorate	ND	1.00 µg/L	07/30/09 08/06/09

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ND = Not Detected

Kandy Santur Roger Scholl

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

8/13/09 **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 : 07/31/09

Job#: G005862/JPL Groundwater Monitoring

	Metals by ICPMS EPA Method 200.8							
	Parameter	Concentration	Reporting Limit	Date Date Sampled Analyzed				
Client ID : MW-11-3 Lab ID : BMI09073102-02A	Chromium (Cr)	ND	0.0050 mg/L	07/30/09 08/13/09				
Ciient ID : MW-11-2 Lab ID : BMI09073102-03A	Chromium (Cr)	ND	0.0050 mg/L	07/30/09 08/13/09				
Client ID : MW-11-1 Lab ID : BMI09073102-04A	Chromium (Cr)	ND	0.0050 mg/L	07/30/09 08/13/09				

ND = Not Detected

Roger Scholl

Kandy Sandman

Walter Arihm

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.

8/14/09

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 : Lab ID :	MW-11-4 BMI09073102-01A	Sulfur dioxide	11	2.0 μg/L	07/31/09	07/30/09	08/05/09
Client ID : Lab ID :	MW-11-3 BMI09073102-02A	Sulfur dioxide	3.2	2.0 μg/L	07/31/09	07/30/09	08/05/09
Client ID : Lab ID :	MW-11-2 BMI09073102-03A	Sulfur dioxide	2.4	2.0 μg/L	07/31/09	07/30/09	08/05/09
Client ID : Lab ID :	MW-11-1 BMI09073102-04A	* * * None Found * * *	ND	2.0 μg/L	07/31/09	07/30/09	08/05/09

Note: Analysis conducted using EPA Method 524.2 criteria. ND = Not Detected

Walter Acrilian Roger Scholl Kandy Santur

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.

8/13/09

Report Date Page 1 of 1



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 Attn: David Conner 3990 Old Town Ave Phone: (818) 393-2808 San Diego, CA 92110 Fax: (614) 458-6641 Job#: G005862/JPL Groundwater Monitoring Alpha Analytical Number: BMI09073102-01A Sampled: 07/30/09 Client I.D. Number: MW-11-4 Received: 07/31/09 Analyzed: 08/05/09

Volatile Organics by GC/MS

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting L	imit
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-Xvlene	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 (DBCI	P) 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	97	(70-130)	%REC
32	1,3-Dichloropropane	ND	0.50	µg/L	-		1		_
33	Dibromochloromethane	ND	0.50	µg/L					
34	1,2-Dibromoetharie (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

Kandy Daulner

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

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

8/13/09

Report Date

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ANALYTICAL REPORT

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

Alpha Analytical Number: BMI09073102-02A Client I.D. Number: MW-11-3

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

Sampled: 07/30/09 Received: 07/31/09

Analyzed: 08/05/09

Volatile Organics by GC/MS

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting Li	imit
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-Xvlene	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 (DBCI	P) 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	111	(70-130)	%REC
31	Toluene	ND	0.50	µg/L	66	Surr: 4-Bromofluorobenzene	92	(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

Kanda Dantmer

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

8/13/09

Report Date



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ANA	<u>LYTICAL REPORT</u>	
Battelle Memorial Institute	Attn: David Conner	
3990 Old Town Ave	Phone: (818) 393-2808	
San Diego, CA 92110	Fax: (614) 458-6641	
Job#: G005862/JPL Groundwater Monitoring	- · ·	
Alpha Analytical Number: BMI09073102-03A	Sampled: 07/30/09	
Client I.D. Number: MW-11-2	Received: 07/31/09	
	Analyzed: 08/05/09	

ANAL MELCAL DEDOD

Volatile Organics by GC/MS

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting L	imit
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		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 (DBCI	P) 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	85	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	µg/L	65	Surr: Toluene-d8	113	(70-130)	%REC
31	Toluene	ND	0.50	µg/L	66	Surr: 4-Bromofluorobenzene	93	(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

Kandy Santur

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8/13/09 **Report Date**

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ANALYTICAL REPORT

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

Alpha Analytical Number: BMI09073102-04A Client I.D. Number: MW-11-1

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

Sampled: 07/30/09 Received: 07/31/09

Analyzed: 08/05/09

Volatile Organics by GC/MS

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting Li	imit
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-Xviene	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	Stvrene	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 (DBCI	P) 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	112	(70-130)	%REC
31	Toluene	ND	0.50	µg/L	66	Surr: 4-Bromofluorobenzene	92	(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

Kandy Daulner

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.

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

8/13/09

Report Date



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: BMI09073102

Project: G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	pH	
09073102-01A	MW-11-4	Aqueous	2	
09073102-02A	MW-11-3	Aqueous	2	
09073102-03A	MW-11-2	Aqueous	2	
09073102-04A	MW-11-1	Aqueous	2	

8/13/09 Report Date



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Date: 13-Aug-09	Ç	QC Si	ummar	y Repor	t			Work Ord 0907310	
Method Blank File ID: 17 Sample ID: MB-22448 Analyte	Units : mg/L Result	Type M	Ba Run ID: IC	est Code: EF atch ID: 224 4 _ 2_090731 A SpkRefVal	18A		Analysis Dat Prep Date:	te: 07/31/2009 12:35 07/31/2009 lefVal %RPD(Limit)	Qual
Nitrite (NO2) - N Nitrate (NO3) - N Phosphate, ortho - P	ND ND ND	0.25 0.25 0.25							
Laboratory Fortified Blank File ID: 18		Type LI	-	est Code: EF atch ID: 2244		hod 300.0		te: 07/31/2009 12:53	
Sample ID: LFB-22448 Analyte	Units : mg/L Result	PQL	Run ID: IC	_2_090731A		LCL(ME)	Prep Date:	07/31/2009 lefVal %RPD(Limit)	Qual
Nitrite (NO2) - N Nitrate (NO3) - N Phosphate, ortho - P	1.21 1.26 1.98	0.25 0.25 0.25	1.25 1.25 1.25		97 101 158	90 90 90	110 110 110 110		L51
Sample Matrix Spike		Type LI	FM To	est Code: EF	PA Met	hod 300.0			
File ID: 09073102-04ALFM Sample ID: 09073102-04ALFM	Units : mg/L		Run ID: IC	atch ID: 2244 2_090731A			Prep Date:	te: 07/31/2009 16:36 07/31/2009	
Analyte Nitrite (NO2) - N Nitrate (NO3) - N Phosphate, ortho - P	Result 1.28 2.27 1.56	PQL 0.25 0.25 0.25	SpkVal 1.25 1.25 1.25	SpkRefVal 0 0.9932 0	%REC 103 102 125	80 80 80 80	UCL(ME) RPDR 120 120 120	lefVal %RPD(Limit)	Qual
Sample Matrix Spike Duplicate File ID: 31 Sample ID: 09073102-04ALFMD	Units : ma/L	Type LI	Ba	est Code: EF atch ID: 2244 _2_090731A	8 A	hod 300.0		te: 07/31/2009 16:54 07/31/2009	
Analyte	Result	PQL				LCL(ME)	•	lefVal %RPD(Limit)	Qual
Nitrite (NO2) - N Nitrate (NO3) - N Phosphate, ortho - P	1.29 2.21 1.56	0.25 0.25 0.25	1.25 1.25 1.25	0 0.9932 0	103 97 125	80 80 80	120 2.	282 0.5(10) 269 2.8(10) 563 0.3(10)	M1

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.

L51 = Analyte recovery was above acceptance limits for the LCS, but was acceptable in the MS/MSD.

M1 = Matrix spike recovery was high, the method control sample recovery was acceptable.



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Date: 		Ç	QC S	umma	ry I	Repor	t					Corder: 073102
Method Blank File ID: 17			Туре I			Code: EF n ID: 2244		hod 300.0	Analy		07/31/2009 1	12:35
Sample ID: M Analyte	IB-22448	Units : mg/L Result	PQL			090731A				Date: RPDRef	07/31/2009 Val %RPD(Lir	nit) Qu
Sulfate (SO4)		ND	0.8				/on LO	, <u>LOL(IIIL)</u>	001(1112)			
Laboratory Fo File ID: 18	rtified Blank		Type L	.FB		Code: EF		hod 300.0		/sis Date:	07/31/2009 ⁻	12:53
Sample ID: L Analyte	FB-22448	Units : mg/L Result	PQL			_ 090731A kRefVal		LCL(ME)		Date: RPDRef	07/31/2009 Val %RPD(Lir	nit) Qu
Sulfate (SO4)		10.1	0.5	5 1	0		101	90	110			
Sample Matrix File ID: 30	x Spike		Туре I	.FM		Code: EF		hod 300.0		/sis Date:	07/31/2009 ⁻	16:36
Sample ID: 09 Analyte	9073102-04ALFM	Units : mg/L Result	PQL			_ 090731A kRefVal		LCL(ME)	•	Date: RPDRef	07/31/2009 Val %RPD(Lii	nit) Qu
Sulfate (SO4)		64.3	0.9	5 1	0	55.25	90	80	120			
Sample Matrix File ID: 31	Spike Duplicate		Type L	_FMD		Code: EF		thod 300.0		/sis Date:	07/31/2009 ⁻	16:54
Sample ID: 09 Analyte	9073102-04ALFMD	Units : mg/L Result	PQL			_ 090731 A okRefVal		LCL(ME)		Date:) RPDRef	07/31/2009 Val %RPD(Lii	nit) Qu
Sulfate (SO4)		65.1	0.8		0	55.25	98	80	120	64.2		

Comments:



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(QC S	ummar	y Repo	rt				Work Ord 09073102	
	Type N				thod 300.0		/sis Date:	07/31/2009 12:35	
Units : mg/L		Run ID: IC	2_090731	A		Prep	Date:	07/31/2009	
Result	PQL	SpkVal	SpkRefVa	8REC	LCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qual
ND	0.5	;							
	Type L	FB T	est Code: E	PA Met	thod 300.0	/ 9056			
		E	atch ID: 224	48C		Analy	sis Date:	07/31/2009 12:53	
Units : mg/L		Run ID: IC	C_2_090731	A		Prep	Date:	07/31/2009	
Result	PQL	SpkVal	SpkRefVa	8REC	LCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qual
4.52	0.5	5 5		90	90	110			
	Type L	.FM T	est Code: E	PA Met	thod 300.0	/ 9056			
		Е	atch ID: 224	48C		Analy	sis Date:	07/31/2009 16:36	
Units : mg/L		Run ID: IC	2_090731	A		Prep	Date:	07/31/2009	
Result	PQL	SpkVal	SpkRefVa	%REC	LCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qual
27.7	0.5	5 5	23.53	84	80	120		-	
	Type L	.FMD T	est Code: E	PA Met	thod 300.0	/ 9056			
		E	atch ID: 224	48C		Analy	sis Date:	07/31/2009 16:54	
Units : mg/L		Run ID: IC	C_2_090731	Α		Prep	Date:	07/31/2009	
Result	PQL	SpkVal	SpkRefVa	NREC	LCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qual
28	0.5	5 5	23.53	89	80	120	27.7	3 1.0(10)	
	Units : mg/L Result ND Units : mg/L Result 4.52 Units : mg/L Result 27.7 Units : mg/L Result	Type N Units : mg/L Result PQL ND 0.5 Type L Units : mg/L Result PQL 4.52 0.5 Type L Units : mg/L Result PQL 27.7 0.5 Type L Units : mg/L Result PQL	Type MBLK T B Units : mg/L Run ID: IC Result PQL SpkVal ND 0.5 Type LFB T B Units : mg/L Run ID: IC Result PQL SpkVal 4.52 0.5 5 Type LFM T B Units : mg/L Run ID: IC Result PQL SpkVal 27.7 0.5 5 Type LFMD T B Units : mg/L Run ID: IC Result PQL SpkVal	Type MBLK Test Code: E Batch ID: 224 Units : mg/L Run ID: IC_2_090731 Result PQL SpkVal ND 0.5 Type LFB Test Code: E Batch ID: 224 Units : mg/L Run ID: IC_2_090731 Result PQL SpkVal Units : mg/L Run ID: IC_2_090731 Result PQL SpkVal Units : mg/L Run ID: IC_2_090731 Result PQL SpkVal 4.52 0.5 5 Type LFM Test Code: E Batch ID: 224 Units : mg/L Run ID: IC_2_090731 Result PQL SpkVal SpkRefVa 27.7 0.5 5 23.53 Type LFMD Test Code: E Batch ID: 224 Units : mg/L Run ID: IC_2_090731 Result PQL SpkVal SpkRefVa Units : mg/L Run ID: IC_2_090731 Result PQL SpkVal SpkRefVa	Batch ID: 22448C Units : mg/L Run ID: IC_2_090731A Result PQL SpkVal SpkRefVal %REC ND 0.5 Type LFB Test Code: EPA Met Batch ID: 22448C Units : mg/L Run ID: IC_2_090731A Result PQL SpkVal SpkRefVal %REC 4.52 0.5 5 90 Type LFM Test Code: EPA Met Batch ID: 22448C Units : mg/L Run ID: IC_2_090731A Result PQL SpkVal SpkRefVal %REC 27.7 0.5 5 23.53 84 Type LFMD Test Code: EPA Met Batch ID: 22448C Units : mg/L Run ID: IC_2_090731A Result PQL SpkVal SpkRefVal %REC 27.7 0.5 5 23.53 84 Type LFMD Test Code: EPA Met Batch ID: 22448C Units : mg/L Run ID: IC_2_090731A Result PQL SpkVal SpkRefVal %REC	Type MBLK Test Code: EPA Method 300.0 Batch ID: 22448C Units : mg/L Run ID: IC_2_090731A Result PQL SpkVal SpkRefVal %REC LCL(ME) ND 0.5	Type MBLK Test Code: EPA Method 300.0 / 9056 Batch ID: 22448C Analy Units : mg/L Run ID: IC_2_090731A Prep Result PQL SpkVal SpkRefVal %REC LCL(ME) UCL(ME) ND 0.5 0.5 Type LFB Test Code: EPA Method 300.0 / 9056 Batch ID: 22448C Analy Units : mg/L Run ID: IC_2_090731A Prep Result PQL SpkVal SpkRefVal %REC LCL(ME) UCL(ME) Units : mg/L Run ID: IC_2_090731A Prep Result PQL SpkVal SpkRefVal %REC LCL(ME) UCL(ME) 4.52 0.5 5 90 90 110 Type LFM Test Code: EPA Method 300.0 / 9056 Batch ID: 22448C Analy Units : mg/L Run ID: IC_2_090731A Prep 27.7 0.5 5 23.53 84 80 120 Type LFMD Test Code: EPA Method 30	Type MBLK Test Code: EPA Method 300.0 / 9056 Batch ID: 22448C Analysis Date: Units : mg/L Run ID: IC_2_090731A Prep Date: Result PQL SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRef ND 0.5	QC Summary Report 0907310: Type MBLK Test Code: EPA Method 300.0 / 9056 Batch ID: 22448C Analysis Date: 07/31/2009 12:35 Units : mg/L Run ID: IC_2_090731A Prep Date: 07/31/2009 Result PQL SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) ND 0.5 Type LFB Test Code: EPA Method 300.0 / 9056 Batch ID: 22448C Analysis Date: 07/31/2009 12:53 Units : mg/L Run ID: IC_2_090731A Prep Date: 07/31/2009 12:53 Units : mg/L Run ID: IC_2_090731A Prep Date: 07/31/2009 Result PQL SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) 4.52 0.5 5 90 90 110 Type LFM Test Code: EPA Method 300.0 / 9056 Batch ID: 22448C Analysis Date: 07/31/2009 16:36 Units : mg/L Run ID: IC_2_090731A Prep Date: 07/31/2009 Ei36 27.7 0.5 5 23.53

Comments:



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Date: 12-Aug-09		(QC S	Sum	mary	y Repor	t					rk Order: 9073102
Method Blan File ID: 14			Туре	MBLM		est Code: El atch ID: 224		hod 314.0		sis Date:	08/06/2009	15:38
Sample ID:	MB-22492	Units : µg/L			-	_3_0908064			Prep [08/06/2009	
Analyte		Result	PQL	S	pkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRef	√al %RPD(L	imit) Qua
Perchlorate		ND		1								
Laboratory	Fortified Blank		Туре	LFB	Τe	est Code: El	PA Met	hod 314.0				
File ID: 15					Ba	atch ID: 224	92		Analys	sis Date:	08/06/2009	15:56
Sample ID:	LFB-22492	Units : µg/L		Run	ID: IC_	_3_0908064	4		Prep [Date:	08/06/2009	
Analyte		Result	PQL	S	pkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRef	val %RPD(L	imit) Qua
Perchlorate		24.8		2	25		99	85	115			
Sample Mat	rix Spike		Туре	LFM	Τe	est Code: El	PA Met	hod 314.0				
File ID: 35					Ba	atch ID: 224	92		Analys	sis Date:	08/06/2009	22:04
Sample ID:	09080502-03ALFM	Units : µg/L		Run	ID: IC	_3_090806/	4		Prep [Date:	08/06/2009	
Analyte		Result	PQL	S	pkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRef	val %RPD(L	imit) Qua
Perchlorate		34.4		2	25	9.105	101	80	120			
Sample Mat	rix Spike Duplicate		Туре) Te	est Code: El	PA Met	hod 314.0				
File ID: 36	-				Ba	atch ID: 224	92		Analys	sis Date:	08/06/2009	22:22
Sample ID:	09080502-03ALFMD	Units : µg/L		Run	ID: IC _	_3_0908064	λ		Prep [Date:	08/06/2009	
Analyte		Result	PQL		-			LCL(ME)	UCL(ME)	RPDRef	val %RPD(L	imit) Qua
Perchlorate		34.7		2	25	9.105	102	80	120	34.4	3 0.8(1	15)

Comments:



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Date: 14-Aug-09	(QC S	ummar	y Repor	t				Work Orde 09073102	
Method Blank File ID: 081209.B\115SMPL.D\		Туре М		est Code: EF atch ID: 224		thod 200.8	Analysis D	ate: 08 /*	12/2009 22:48	
Sample ID: MB-22456	Units : mg/L		Run ID: IC	P/MS_0908	12E		Prep Date:	08/0	3/2009	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPD	RefVal %	6RPD(Limit)	Qua
Chromium (Cr)	ND	0.00	5							
Laboratory Control Spike File ID: 081209.B\116_LCS.D\		Type L		est Code: EF atch ID: 224		thod 200.8	Analysis D	ate: 08/*	12/2009 22:54	
Sample ID: LCS-22456	Units : mg/L		Run ID: IC	P/MS_0908	12E		Prep Date:	08/0	3/2009	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPD	RefVal %	6RPD(Limit)	Qual
Chromium (Cr)	0.0512	0.005	5 0.05		102	80	120			
Sample Matrix Spike File ID: 081209.B\120SMPL.D\		Туре М		est Code: EF atch ID: 224		thod 200.8	Analysis D	ate: 08/'	12/2009 23:16	
Sample ID: 09073103-03AMS	Units : ma/L		Run ID: IC	P/MS 0908	12E		Prep Date:	08/0	3/2009	
Analyte	Result	PQL		-		LCL(ME)	UCL(ME) RPD	RefVal %	%RPD(Limit)	Qual
Chromium (Cr)	0.051	0.005	5 0.05	0	102	80	120			
Sample Matrix Spike Duplicate File ID: 081209.B\121SMPL.D\		Туре 🛚	-	est Code: EF atch ID: 224		thod 200.8	Analysis D	ate: 08/'	12/2009 23:22	
Sample ID: 09073103-03AMSD	Units : mg/L		Run ID: IC	P/MS_0908	12E		Prep Date:	08/0	3/2009	
Analyte	Result	PQL				LCL(ME)	UCL(ME) RPD	RefVal %	6RPD(Limit)	Qual
Chromium (Cr)	0.0488	0.005		0	98	80		05098	4.4(20)	

Comments:



Date: <u>12-Aug-09</u>		(QC Sumr	nary Report		Work Orde 09073102	
Method Bla			Type MBLK	Test Code:			
File ID: 0907:	3142.D			Batch ID: MS15W0804N	Analysis Date:	08/05/2009 00:27	
Sample ID:	MBLK MS15W0804N	Units : µg/L	Run I	D: MSD_15_090804C	Prep Date:	08/05/2009	
Analyte		Result	PQL Sp	kVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRef	/al %RPD(Limit)	Qu
Dichlorodifluo		ND	0.5				
Chloromethar		ND	1				
Vinyl chloride Chloroethane		ND	0.5				
Bromomethar		ND ND	0.5 1				
Trichlorofluor		ND	0.5				
1,1-Dichloroe		ND	0.5				
Dichlorometha	ane	ND	1				
Freon-113		ND	0.5				
trans-1,2-Dich		ND	0.5				
1,1-Dichloroe	ityl ether (MTBE) thane	ND	0.5				
2-Butanone (I		ND ND	0.5 10				
cis-1,2-Dichlo		ND	0.5				
Bromochloror		ND	0.5				
Chloroform		ND	0.5				
2,2-Dichlorop		ND	0.5				
1,2-Dichloroe 1,1,1-Trichlor		ND	0.5				
1,1-Dichlorop		ND ND	0.5 0.5				
Carbon tetrac	-	ND	0.5				
Benzene		ND	0.5				
Dibromometh	ane	ND	0.5				
1,2-Dichlorop	•	ND	0.5				
Trichloroether		ND	0.5				
Bromodichlor	ometnane entanone (MIBK)	ND	0.5				
cis-1,3-Dichlo		ND ND	2.5 0.5				
trans-1,3-Dich		ND	0.5				
1,1,2-Trichlor		ND	0.5				
Toluene		ND	0.5				
1,3-Dichlorop	-	ND	0.5				
Dibromochlor 1,2-Dibromoe		ND	0.5				
Tetrachloroet		ND ND	1 0.5				
1,1,1,2-Tetrac		ND	0.5				
Chlorobenzen		ND	0.5				
Ethylbenzene		ND	0.5		•		
m,p-Xylene		ND	0.5				
Bromoform Styrene		ND	0.5				
o-Xylene		ND ND	0.5				
1,1,2,2-Tetrac	chloroethane	ND	0.5 0.5				
1,2,3-Trichlor		ND	1				
Isopropylbenz		ND	0.5				
Bromobenzen		ND	0.5				
n-Propylbenze 4-Chlorotolue		ND	0.5				
2-Chlorotolue		ND ND	0.5 0.5				
1,3,5-Trimethy		ND	0.5				
tert-Butylbenz		ND	0.5				
1,2,4-Trimeth		ND	0.5				
sec-Butylbenz		ND	0.5				
1,3-Dichlorob		ND	0.5				
1,4-Dichlorob 4-Isopropyltol		ND ND	0.5				
1,2-Dichlorob		ND ND	0.5 0.5				
n-Butylbenzer	ne	ND	0.5				
	3-chloropropane (DBCP)	ND	2.5				
1,2,4-Trichlor		ND	1				
Naphthalene	Andin -	ND	1				
Hexachlorobu 1,2,3-Trichloro		ND	1				
	loroethane-d4	ND 8.77	1	10 88 70	120		
	-d8	0.77		10 88 70) 130		



Date: 12-Aug-09	(QC Sun	ımary	Report			Work Ord 09073102	
Surr: 4-Bromofluorobenzene	9.66		10	97	70	130		
Laboratory Control Spike File ID: 09073138.D Sample ID: LCS MS15W0804N	Units : µg/L	Type LCS	Bat	st Code: .ch ID: MS15W08 D_15_090804C	04N	Analysis Date: Prep Date:	08/04/2009 22:57 08/04/2009	
Analyte	Result					UCL(ME) RPDRef		Qual
Dichlorodifluoromethane	12.4	1	10	124	70	130		
Chloromethane	10.4	2	10	104	70	130		
Vinyl chloride	9.32	1	10	93	70	130		
Chloroethane Bromomethane	9.05	1	10	91	70	130		
Trichlorofluoromethane	8.06 10.6	2 1	10 10	81 106	70 70	130 130		
1,1-Dichloroethene	10.5	1	10	105	70	130		
Dichloromethane	9.71	2	10	97	70	130		
trans-1,2-Dichloroethene	10.9	1	10	109	70	130		
Methyl tert-butyl ether (MTBE) 1.1-Dichloroethane	10.1 10.4	0.5	10 10	101 104	70 70	130 130		
cis-1,2-Dichloroethene	10.4	1 1	10	104	70	130		
Bromochloromethane	10.5	1	10	105	70	130		
Chloroform	10.4	1	10	104	70	130		
2,2-Dichloropropane	9.34	1	10	93	70	130		
1,2-Dichloroethane 1,1,1-Trichloroethane	9.47	1	10	95	70 70	130 130		
1,1-Dichloropropene	10.5 10 <i>.</i> 8	1 1	10 10	105 108	70	130		
Carbon tetrachloride	10.2	1	10	102	70	130		
Benzene	10.4	0.5	10	104	70	130		
Dibromomethane	9.88	1	10	99	70	130		
1,2-Dichloropropane Trichloroethene	10.9	1	10	109	70	130		
Bromodichloromethane	11.1 9.22	1	10 10	111 92	70 70	130 130		
cis-1,3-Dichloropropene	9.32	1	10	93	70	130		
trans-1,3-Dichloropropene	8.48	1	10	85	70	130		
1,1,2-Trichloroethane	10.2	1	10	102	70	130		
Toluene 1,3-Dichloropropane	10.3	0.5	10	103	70	130		
Dibromochloromethane	10.5 9.06	1 1	10 10	105 91	70 70	130 130		
1,2-Dibromoethane (EDB)	19.7	2	20	98	70	130		
Tetrachloroethene	10.8	1	10	108	70	130		
1,1,1,2-Tetrachloroethane	10.3	1	10	103	70	130		
Chlorobenzene Ethylbenzene	10.2	1	10	102	70 70	130 130		
m,p-Xylene	10.7 11.2	0.5 0.5	10 10	107 112	70	130		
Bromoform	8.07	. 1	10	81	70	130		
Styrene	7.34	1	10	73	70	130		
o-Xylene	10.9	0.5	10	109	70	130		
1,1,2,2-Tetrachloroethane 1,2,3-Trichloropropane	9.75 20.2	1	10	98 101	70 70	130 130		
Isopropylbenzene	11.1	2 1	20 10	101 111	70	130		
Bromobenzene	10.1	1	10	101	70	130		
n-Propylbenzene	11	1	10	110	70	130		
4-Chlorotoluene	10.7	1	10	107	70	130		
2-Chlorotoluene 1,3,5-Trimethylbenzene	10.6 10.6	1	10 10	106 106	70 70	130 130		
tert-Butylbenzene	10.6	1	10	106	70	130		
1,2,4-Trimethylbenzene	10.7	1	10	107	70	130		
sec-Butylbenzene	10.8	1	10	108	70	130		
1,3-Dichlorobenzene	10.5	1	10	105	70	130		
1,4-Dichlorobenzene 4-Isopropyltoluene	10 10.8	1	10 10	100 108	70 70	130 130		
1,2-Dichlorobenzene	10.0	1	10	100	70	130		
n-Butylbenzene	11.7	1	10	117	70	130		
1,2-Dibromo-3-chloropropane (DBCP)	46.5	3	50	93	70	130		
1,2,4-Trichlorobenzene Naphthalene	9.37	2	10	94	70	130		
Hexachlorobutadiene	8.8 18.7	2 2	10 20	88 93	70 70	130 130		
1,2,3-Trichlorobenzene	9.15	2	10	93	70	130		
Surr: 1,2-Dichloroethane-d4	8.75		10	88	70	130		
Surr: Toluene-d8	10.3		10	103	70	130		
Surr: 4-Bromofluorobenzene	9.85		10	99	70	130		



Date: 12-Aug-09	(QC Su	mmar	y Repor	t			Work Ord 0907310	
Sample Matrix Spike		Type M		est Code:					
File ID: 09073143.D			Ba	atch ID: MS1	5W080	04N	Analysis D	ate: 08/05/2009 00:50	
Sample ID: 09073103-03AMS	Units : µg/L	F	Run ID: M	SD_15_0908	304C		Prep Date	: 08/05/2009	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPD	RefVal %RPD(Limit)	Qua
Dichlorodifluoromethane	48.9	2.5	50	0	98	13	167		
Chloromethane	45.3	10	50	Ő	91	28	145		
Vinyl chloride	48.5	2.5	50	0	97	43	134		
Chloroethane	40.8	2.5	50	0	82	39	154		
Bromomethane	38.7	10	50	0	77	19	176		
Trichlorofluoromethane 1,1-Dichloroethene	49.9	2.5	50	0	99.8	34	160		
Dichloromethane	46.8 45.5	2.5 10	50 50	0	94 91	60 68	130 130		
trans-1,2-Dichloroethene	49.9	2.5	50	0	99.8	63	130		
Methyl tert-butyl ether (MTBE)	49.5	1.3	50	Ō	99	56	141		
1,1-Dichloroethane	47.9	2.5	50	0	96	61	130		
cis-1,2-Dichloroethene	50.7	2.5	50	0	101	70	130		
Bromochloromethane	50.8	2.5	50	0	102	70	130		
Chloroform 2.2-Dichloropropane	47	2.5	50	0	94	67	130		
1,2-Dichloroethane	41.3 44.7	2.5 2.5	50 50	0	83 89	30 60	152 135		
1,1,1-Trichloroethane	47.7	2.5	50	0	95	59	137		
1,1-Dichloropropene	49.4	2.5	50	õ	99	63	130		
Carbon tetrachloride	47.7	2.5	50	0	95	50	147		
Benzene	48.1	1.3	50	0	96	67	130		
Dibromomethane	48.1	2.5	50	0	96	69	133		
1,2-Dichloropropane Trichloroethene	49.9	2.5	50	0	99.8	69 60	130		
Bromodichloromethane	49.4 43.4	2.5 2.5	50 50	0	99 87	69 66	130 134		
cis-1,3-Dichloropropene	41.6	2.5	50 50	0	83	63	130		
trans-1,3-Dichloropropene	41.3	2.5	50	- Ŭ	83	66	131		
1,1,2-Trichloroethane	48.7	2.5	50	0	97	68	130		
Toluene	47.4	1.3	50	0	95	66	130		
1,3-Dichloropropane	50.5	2.5	50	0	101	70	130		
Dibromochloromethane	44.2	2.5	50	0	88	70	130		
1,2-Dibromoethane (EDB) Tetrachloroethene	96.9 48.3	10 2.5	100 50	0	97 97	70 61	130 134		
1,1,1,2-Tetrachloroethane	48.5	2.5	50 50	0	97 97	70	134		
Chlorobenzene	47.8	2.5	50	0	96	70	130		
Ethylbenzene	48.7	1.3	50	Ō	97	68	130		
m,p-Xylene	50.8	1.3	50	0	102	64	130		
Bromoform	40	2.5	50	0	80	64	138		
Styrene	34.7	2.5	50	0	69	69	130		
o-Xylene 1,1,2,2-Tetrachloroethane	51.3	1.3	50	0	103	70	130		
1,2,3-Trichloropropane	52.5 100	2.5 10	50 100	0	105 100	65 70	131 130		
Isopropylbenzene	50.3	2.5	50	0	100	64	138		
Bromobenzene	46.8	2.5	50	õ	94	70	130		
n-Propylbenzene	49.4	2.5	50	Ō	99	66	132		
4-Chlorotoluene	49.9	2.5	50	0	99.8	70	130		
2-Chlorotoluene	49	2.5	50	0	98	70	130		
1,3,5-Trimethylbenzene	48.3	2.5	50	0	97	66	136		
tert-Butylbenzene 1,2,4-Trimethylbenzene	48 49.1	2.5 2.5	50 50	0	96 98	65 65	137 137		
sec-Butylbenzene	49.5	2.5	50 50	0	98 99	66	134		
1,3-Dichlorobenzene	49.9	2.5	50	Ő	99.8	70	130		
1,4-Dichlorobenzene	47.1	2.5	50	Ō	94	70	130		
4-Isopropyltoluene	.49.3	2.5	50	0	99	66	137		
1,2-Dichlorobenzene	48.3	2.5	50	0	97	70	130		
n-Butylbenzene	53	2.5	50	0	106	60	142		
1,2-Dibromo-3-chloropropane (DBCP) 1,2,4-Trichlorobenzene	237	15	250	0	95 86	67 61	130		
Naphthalene	43.2 40.9	10 10	50 50	0	86 82	61 40	137 167		
Hexachlorobutadiene	86.9	10	100	0	82 87	40 61	130		
1,2,3-Trichlorobenzene	41.8	10	50	0	84	51	144		
Surr: 1,2-Dichloroethane-d4	43.8		50	Ũ	88	70	130		
Surr: Toluene-d8	51.4		50		103	70	130		
Surr: 4-Bromofluorobenzene	49.1		50		98	70	130		



Date: 12-Aug-09	(QC Su	mmar	y Repor	t				Work Ord 0907310	
Sample Matrix Spike Duplicate		Type MS	D Te	est Code:						
File ID: 09073144.D			Ba	atch ID: MS	15W080	04 N	Analys	sis Date: 08	3/05/2009 01:12	
Sample ID: 09073103-03AMSD	Units : µg/L	F	Run ID: M	SD_15_090	804C		Prep D	Date: 08	/05/2009	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qua
Dichlorodifluoromethane	50.1	2.5	50	0	100	13	167	48.85	2.6(20)	
Chloromethane	48.2	10	50	0	96	28	145	45.25	6.3(20)	
Vinyl chloride	53.4	2.5	50	0	107	43	134	48.51	9.6(20)	
Chloroethane	43.3	2.5	50	0	87	39	154	40.82	5.8(20)	
Bromomethane	40.8	10	50	0	82	19	176	38.71	5.3(20)	
Trichlorofluoromethane 1,1-Dichloroethene	52.9	2.5	50	0	106 97	34	160 130	49.91	5.7(20)	
Dichloromethane	48.3 44.5	2.5 10	50 50	0	97 89	60 68	130	46.83 45.48	3.0(20) 2.1(20)	
trans-1,2-Dichloroethene	51.1	2.5	50	0	102	63	130	49.91	2.3(20)	
Methyl tert-butyl ether (MTBE)	48.8	1.3	50	Ō	98	56	141	49.49	1.5(20)	
1,1-Dichloroethane	47.7	2.5	50	0	95	61	130	47.88	0.5(20)	
cis-1,2-Dichloroethene	48.6	2.5	50	0	97	70	130	50.7	4.2(20)	
Bromochloromethane	51.5	2.5	50	0	103	70	130	50.8	1.3(20)	
Chloroform 2,2-Dichloropropane	48.5	2.5	50	0	97	67	130	47	3.2(20)	
1,2-Dichloroethane	42.5 44.7	2.5 2.5	50 50	0	85 89	30 60	152 135	41.25 44.7	2.9(20) 0.1(20)	
1,1,1-Trichloroethane	44.7 49.7	2.5 2.5	50 50	0	89 99	59	135	44.7 47.67	4.1(20)	
1,1-Dichloropropene	49.9	2.5	50	Ő	99.8	63	130	49.35	1.2(20)	
Carbon tetrachloride	48.6	2.5	50	Ō	97	50	147	47.7	1.9(20)	
Benzene	48.3	1.3	50	0	97	67	130	48.08	0.5(20)	
Dibromomethane	47.7	2.5	50	0	95	69	133	48.09	0.9(20)	
1,2-Dichloropropane	50.1	2.5	50	0	100	69	130	49.91	0.4(20)	
Trichloroethene Bromodichloromethane	48.8 42.9	2.5 2.5	50 50	0	98 86	69 66	130 134	49.38 43.36	1.2(20) 1.2(20)	
cis-1,3-Dichloropropene	42.9	2.5 2.5	50 50	0	80 81	63	134	43.30	2.8(20)	
trans-1,3-Dichloropropene	40.8	2.5	50	Ő	82	66	131	41.29	1.3(20)	
1,1,2-Trichloroethane	48.3	2.5	50	Ō	97	68	130	48.7	0.8(20)	
Toluene	47.1	1.3	50	0	94	66	130	47.41	0.7(20)	
1,3-Dichloropropane	49.5	2.5	50	0	99	70	130	50.49	2.1(20)	
Dibromochloromethane	44.7	2.5	50	0	89	70	130	44.22	1.0(20)	
1,2-Dibromoethane (EDB) Tetrachloroethene	94.6	10	100	0	95	70	130	96.85	2.3(20)	
1,1,1,2-Tetrachloroethane	48.8 48.2	2.5 2.5	50 50	0	98 96	61 70	134 130	48.32 48.5	1.1(20) 0.7(20)	
Chlorobenzene	47.3	2.5	50	0	90 95	70	130	40.5	1.0(20)	
Ethylbenzene	48.9	1.3	50	Ő	98	68	130	48.71	0.3(20)	
m,p-Xylene	50.7	1.3	50	0	101	64	130	50.84	0.3(20)	
Bromoform	40.3	2.5	50	0	81	64	138	39.98	0.7(20)	
Styrene	34.1	2.5	50	0	68	69	130	34.73	1.9(20)	M2
o-Xylene	51.2	1.3	50	0	102	70	130	51.3	0.2(20)	
1,1,2,2-Tetrachloroethane 1,2,3-Trichloropropane	50.8	2.5	50	0	102	65	131	52.52	3.3(20)	
Isopropylbenzene	98.6 50.8	10 2.5	100 50	0	99 102	70 64	130 138	100.1 50.29	1.5(20) 1.0(20)	
Bromobenzene	46.1	2.5	50	0	92	70	130	46.75	1.3(20)	
n-Propylbenzene	51.4	2.5	50	Ő	103	66	132	49.39	4.1(20)	
4-Chlorotoluene	50.2	2.5	50	Ō	100	70	130	49.91	0.6(20)	
2-Chlorotoluene	49.6	2.5	50	0	99	70	130	48.96	1.3(20)	
1,3,5-Trimethylbenzene	49	2.5	50	0	98	66	136	48.27	1.5(20)	
tert-Butylbenzene 1,2,4-Trimethylbenzene	48.8	2.5	50	0	98	65	137	48.01	1.5(20)	
sec-Butylbenzene	48.9 50.7	2.5 2.5	50 50	0	98 101	65 66	137 134	49.11 49.46	0.4(20) 2.4(20)	
1,3-Dichlorobenzene	49.4	2.5	50 50	0	99	70	134	49.40	0.9(20)	
1,4-Dichlorobenzene	46.4	2.5	50	0	93	70	130	47.07	1.5(20)	
4-Isopropyltoluene	50	2.5	50	õ	100	66	137	49.31	1.4(20)	
1,2-Dichlorobenzene	47.8	2.5	50	0	96	70	130	48.25	0.9(20)	
n-Butylbenzene	54.7	2.5	50	0	109	60	142	53.04	3.1(20)	
1,2-Dibromo-3-chloropropane (DBCP)	238	15	250	0	95	67	130	236.5	0.8(20)	
1,2,4-Trichlorobenzene Naphthalene	44.3	10	50	0	89	61	137	43.24	2.5(20)	
Hexachlorobutadiene	41.9 91.1	10 10	50 100	0 0	84 91	40 61	167 130	40.88 86.9	2.4(20) 4.7(20)	
1,2,3-Trichlorobenzene	43.4	10	50	0	87	51	130	41.83	4.7(20) 3.7(20)	
Surr: 1,2-Dichloroethane-d4	43.9	10	50 50	0	88	70	130	11.00	J. (L V)	
Surr: Toluene-d8	51.8		50		104	70	130			
Surr: 4-Bromofluorobenzene	49.7		50		99	70	130			



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

QC Summary Report

Work Order: 09073102

12-Aug-09 Comments:

Date:

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.

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CHAIN-OF-CUSTODY RECORD

Page: 1 of 1

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				Alp	ha Ar	nalyti	Alpha Analytical, Inc.	а -		5		dor ·	RMTC	WorkOrder · RMIS00073107	0)
			255 G	ilendale Av	enue, Suit	e 21 Spar	255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778	9431-5778							
•				TEL: (775) 355-104	4 FAX:	TEL: (775) 355-1044 FAX: (775) 355-0406	<u>6</u>		Rep	ort Due	By: 5:	00 PM	On : 1	Report Due By : 5:00 PM On : 14-Aug-2009
Client:		Report	Report Attention	Pho	Phone Number	Đ	EMail Address	ress							
Battelle Memorial Institute	te	David Conner	Conner	(818	(818) 393-2808 x	x 8(connerd@battelle.org	ttelle.org							
Suite C-205		Betsy Cutie	utie	(61	(614) 424-4899 x	x 6(cutiee@batelle.org	lle.org		E	EDD Required : Yes	red : Yes			
San Diego, CA 92110		Shane Walton	Walton	(61,	(614) 424-4117 x	17 x	waltons@battelle.org	ttelle.org			Sampled by : Client	by : Clie	nt		
PO: 218013											Cooler Temp		Samples Received	Received	Date Printed
Client's COC #: 25753	: dol	Job : G005862/JPL Groundwater Monitoring	32/JPL Gro	undwater	Monitorin	Ū					2 °C	č	31-Jul-2009	-2009	31-Jul-2009
QC Level : DS4 = D	DOD QC Required : Final Rpt, MBLK, InitCal/ConCal data, LCS, MS/MSD With Surrogates	l Rpt, MBLI	K, InitCal/C	SonCal dat	ta, LCS, N	MS/MSD	With Surroga	ites							
	•)	1					~~	Requested Tests	d Tests					
Alpha Cilent Sample ID Sample ID		Collecti Matrix Date	9	No. of Bottles Alpha Sub	TAT	00_0(A)_W	300_0(A)_W 300_0(B)_W 300_0(C)_W		314_W	WETALS_D W	METALS_D VOC_TIC_ W W	voc_w		Samp	Sample Remarks
BMI09073102-01A MW-11-4		AQ 07/30/09 10:35	5 ⁰⁹ 4	0	10				Perchlorate		VOC by 524 VOC by 524 Criteria Criteria	VOC by 524 Criteria			
BMI09073102-02A MW-11-3	1-3 AQ	2 07/30/09 11:05	5 09 5	0	10				Perchlorate	ç	VOC by 524 VOC by 524 Criteria Criteria	VOC by 524 Criteria			
BMI09073102-03A MW-11-2	1-2 AQ	2 07/30/09 11:26	6 09 5	0	10				Perchlorate	Ŷ	VOC by 524 VOC by 524 Criteria Criteria	VOC by 524 Criteria		Le	Level IV QC

BMI09073102-04A MW-11-1

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07/30/09 11:49

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NO2, NO3, NO2, NO3, NO2, NO3, Perchlorate SO4, PO4, Cl SO4, PO4, Cl SO4, PO4, Cl

Q

VOC by 524 VOC by 524 Criteria Criteria

Comments: Logged in by: No security seals. Frozen ice. Temp Blank #7280 received @ 2°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) : abuth Signatur ldcox Klizabeth Hdcox Print Name Company 7:3:09 1222 Date/Time

Alpha Analytical, Inc.

Matrix Type: AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) 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 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. Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Address <u>Ses kin 6 A</u> City, State, Zip <u>Coccordsus</u> Phone Number	A VE A VE 345 - 514 (4322) Fax	255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778 Phone (775) 355-1044 Fax (775) 355-0406	OTHER nalyses Requi	red / Page # (
1×1	0	100# 2005 862	(2) (2) (2) (2) (2) (2) (2) (2) (2) (2)	Required OC Level?
City State, Zip SAN DIEGO, CA 9	92110 Phone# 726-7311	Fax #	-3	ES
Time Date Matrix [*] Sampled by Sampled Sampled Below Lab	D Number (Use Only)	In TAT Filmed See below		Giobal ID #
চ্ট	MI09073/02 -01 MW-11 - 4	7	X	
	CQ		XXX	
1176	-03 MW-11-2		XXX	LEVEL TY OC
1/49 1 1	· 04 MW - 11 - 1		XXXX	
			Alpha Analytica	Sample Receipt
			Security Scals?	VES 60
			Frozen Ice?	(YES NO
			Temperature	2 °C
ADDITIONAL INSTRUCTIONS:	TIONS:			
Signature	Print Name	ō	Company	Date Time
Relinquished by	the light in	ENDURA (NSIGH	N GEC	7/30/25 1300
Received by Charlott	n Udcer Elizabeth F	dcox	appa	7-31-09 12-7
Received by				
Relinquished by				

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.

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



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

Date: 12-Aug-09

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

Suite C-205

CASE NARRATIVE

Project: Work Order:	G005862/JPL Gr BMI09073103	oundwater Monitoring	Cooler Temp: 2 °C
Alpha's	Sample ID	Client's Sample ID	Matrix
09073	5103-01A	MW-24-4	Aqueous
09073	103-02A	MW-24-3	Aqueous
09073	103-03A	MW-24-2	Aqueous
09073	103-04A	MW-24-1	Aqueous
09073	103-05A	EB-8-7/30/09	Aqueous
09073	103-06A	TB-8-7/30/09	Aqueous
		Manually Integrate	d Analytes
Alpha's Sat	mple ID	Test Reference	Analyte
0907310	03-03A	EPA Method 314.0	Perchlorate
0907310	03-04A	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/Chainof-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.

Walter Arridmon Kandy Sandmer Roger Scholl

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 : 07/31/09

Job#: G005862/JPL Groundwater Monitoring

Anions by IC EPA Method 300.0 / 9056						
	Parameter	Concentration	Reporting Limit	Date / Time Sampled	Date / Time Analyzed	
Client ID : MW-24-1	Nitrite (NO2) - N	ND	0.25 mg/L	07/30/09 09:24	07/31/09 17:13	
Lab ID : BMI09073103-04A	Nitrate (NO3) - N Phosphate, ortho - P	1.0 ND	0.25 mg/L 0.25 mg/L	07/30/09 09:24 07/30/09 09:24	07/31/09 17:13 07/31/09 17:13	

ND = Not Detected

Roger Scholl

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8/13/09 **Report Date**

G005862/JPL Groundwater Monitoring



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 : 07/31/09

Job#: G005862/JPL Groundwater Monitoring

Anions by IC EPA Method 300.0 / 9056					
		Parameter	Concentration	Reporting Limit	Date Date Sampled Analyzed
Client ID :	MW-24-1				
Lab ID :	BMI09073103-04A	Chloride	82	0.50 mg/L	07/30/09 07/31/09
		Sulfate (SO4)	48	0.50 mg/L	07/30/09 07/31/09

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Perchlorate by Ion Chromatography EPA Method 314.0						
	Parameter	Concentration	Reporting Limit	Date Date Sampled Analyzed		
Client ID : MW-24-3 Lab ID : BMI09073103-02A	Perchlorate	ND	1.00 µg/L	07/30/09 08/07/09		
Client ID : MW-24-2 Lab ID : BM109073103-03A	Perchlorate	10.2	1.00 µg/L	07/30/09 08/07/09		
Client ID : MW-24-1 Lab ID : BM109073103-04A	Perchlorate	3.98	1.00 µg/L	07/30/09 08/07/09		
Client ID : EB-8-7/30/09 Lab ID : BM109073103-05A	Perchlorate	ND	1.00 μg/L	07/30/09 08/07/09		

ND = Not Detected

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

8/13/09 **Report Date**



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 Date Received : 07/31/09

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Metals by ICPMS EPA Method 200.8					
		Parameter	Concentration	Reporting Limit	Date Date Sampled Analyzed
Client ID : Lab ID :	MW-24-4 BMI09073103-01A	Chromium (Cr)	ND	0.0050 mg/L	07/30/09 08/13/09
Client ID : Lab ID :	MW-24-3 BMI09073103-02A	Chromium (Cr)	ND	0.0050 mg/L	07/30/09 08/13/09
Client ID : Lab ID :	MW-24-2 BMI09073103-03A	Chromium (Cr)	ND	0.0050 mg/L	07/30/09 08/12/09
Client ID : Lab ID :	MW-24-1 BMI09073103-04A	Chromium (Cr)	0.0086	0.0050 mg/L	07/30/09 08/13/09
Client ID : Lab ID :	E B-8- 7/ 30/0 9 BMI09073103-05A	Chromium (Cr)	ND	0.0050 mg/L	07/30/09 08/13/09

ND = Not Detected

Roger Scholl Kandy Saulmer

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8/14/09 **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

				Estimated			
		Parameter	Estimated	Reporting	Date	Date	Date
			Concentration	Limit	Received	Sampled	Analyzed
Client ID : Lab ID :	MW-24-3 BMI09073103-02A	Sulfur dioxide	20	2.0 μg/L	07/31/09	07/30/09	08/05/09
Client ID : Lab ID :	MW-24-2 BMI09073103-03A	Sulfur dioxide	5.6	2.0 μg/L	07/31/09	07/30/09	08/05/09
Client ID : Lab ID :	MW-24-1 BMI09073103-04A	Sulfur dioxide	2.4	2.0 μg/L	07/31/09	07/30/09	08/05/09
Client ID : Lab ID :	E B-8-7/30/09 BMI09073103-05A	*** None Found ***	ND	2.0 μg/L	07/31/09	07/30/09	08/05/09
Client ID : Lab ID :	TB-8-7/30/09 BMI09073103-06A	*** None Found ***	ND	2.0 μg/L	07/31/09	07/30/09	08/05/09

Note: Analysis conducted using EPA Method 524.2 criteria. ND = Not Detected

Roger Scholl Kandy Saulman

8/13/09

Report Date

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