James General

Los Alamos
NATIONAL LABORATORY
EST. 1943

Environmental Programs
LANL Water Stewardship Program
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Date: October 18, 2006
Refer to: EP2006-0918
LA-UR: 06-6636

Mr. Galen Buller
Public Utilities Department Director
City of Santa Fe
801 West San Mateo
P.O. Box 909
Santa Fe, New Mexico 87504

SUBJECT: DRINKING WATER QUALITY, BUCKMAN WATER SUPPLY WELLS

Dear Mr. Buller:

As you are aware, Los Alamos National Laboratory (Laboratory) has participated in the cooperative sampling of the Buckman Water Supply Wells since August 2001. Under the current sampling plan, as proposed to your agency in April 2002, Laboratory personnel sample Buckman Wells Nos. 1, 2, and 8 semi-annually in May and October (letter, Mr. Steven Rae to Ms. Marlene Sundheimer, April 30, 2002). This year, at the request of your staff, sampling was delayed until July 12, 2006, when your staff escorted personnel from the Laboratory's Water Quality and Hydrology Group during the sampling of Buckman Wells Nos. 1, 2, and 8. Samples were submitted to the following analytical laboratories.

1. General Engineering Laboratories (GEL), Inc., for the following analyses:
   - Organics (High Explosives, SVOA, VOA, PCBs, Pesticides),
   - Perchlorate by Ion Chromatography and LC/MS/MS,
   - General Inorganics,
   - Metals, and
   - Radiologicals.

2. Severn Trent Laboratories for the following analysis:
   - Hexavalent chromium.

3. University of Miami's Tritium Laboratory for the following analysis:
   - Low-level tritium.

Tables 1.0, 2.0, and 3.0 summarize the analytical results. Attachment 1.0 contains copies of the analytical reports. A discussion of the results follows.

Radiologicals. Results are summarized in Table 1.0.

- **Gross Alpha.** Gross alpha particle activity results from Buckman Wells Nos. 1, 2, and 8 were 10.9 pCi/L, 33.8 pCi/L, and 12.9 pCi/L, respectively. The gross alpha particle activity at Buckman Well No. 2 in 2005 was 39 pCi/L. Uranium is the primary contributor of gross alpha particle activity at Buckman Well No. 2 (See isotopic uranium results, Table 1.0). The EPA's Maximum Contaminant Level (MCL) for gross alpha particle activity of 15 pCi/L excludes contributions from uranium (40 CFR 141.15). The net gross alpha particle activity at Buckman Well No. 2 is well below the MCL.

- **Gross Beta.** Gross beta particle activity results from Buckman Wells Nos. 1, 2, and 8 were 4.9 pCi/L, 20.1 pCi/L, and 6.7 pCi/L, respectively. All sample results are below the EPA's Screening Level of 50 pCi/L (40 CFR 141.26).

- **Gross Gamma.** Gross gamma activities at all locations were less than the analytical laboratory's Minimum Detectable Activity (MDA).

- **Isotopic Uranium.** Samples from Buckman Wells Nos. 1, 2, and 8 were analyzed for isotopic uranium using Alpha Spectroscopy (alpha spec). Alpha spec is an analytical method to indirectly measure the alpha activity in a sample. Using alpha spec, uranium isotopes $^{233/234}U$, $^{235/236}U$, and ^{238}U were analyzed by GEL. The mass of total uranium in each sample was calculated using the following formula, which incorporates the specific activities for the isotopes. We assume that no ^{233}U or ^{236}U are present in the sample:

$$\text{Total Uranium } (\mu g/L) = (^{233/234}U/6250) + (^{235/236}U/2.16) + (^{238}U/0.336)$$

The calculated concentrations of total uranium using GEL's alpha spec results are listed in the following table along with, for comparison purposes, the total uranium results obtained from ICP/MS analysis (SW846 method) presented in Table 3.0.

Total Uranium Results, July 12, 2006 (µg/L).

Location	Alpha Spec Total Uranium	ICP/MS Total Uranium
Buckman No. 1	12.1	13.4
Buckman No. 2	80.8	79.1
Buckman No. 8	18.1	17.0

The total uranium results from Buckman Wells Nos. 1 and 8 are below the EPA's MCL for total uranium of 30 µg/L. The total uranium result from Buckman Well No. 2 of 80.8 µg/L is approximately 2.5 times greater than the EPA MCL. Total uranium results at Buckman Well No. 2 have varied widely over the past six years as presented in the table below.

Total Uranium Results, Calculated from Alpha Spectroscopy, 2001-2006 (µg/L).

Location	8/16/01	10/31/01	10/10/02	10/22/03	10/26/04	6/8/05	7/12/06
Buckman No. 2	221.5	20.4	246.6	115.6	18.4	50.2	80.8

The wide variability in total uranium concentrations at Buckman Well No. 2 is presumably due to how long the well had been pumping at the time of sampling.

- **Am-241, Cs-137, Pu-238, and Sr-90.** No Am-241, Cs-137, Pu-238, or Sr-90 was detected in any of the samples collected from Buckman Wells Nos. 1, 2, and 8 with the exception of a qualified detection of Pu-238 at Buckman Well No. 1. A detection is defined as an analytical result that is equal to or greater than three times the one-sigma analytical uncertainty and greater than the Minimum Detectable Activity (MDA).

  The reported Pu-238 result from Buckman Well No. 1 was 0.044 pCi/L, an activity greater than the MDA of 0.035 pCi/L, but less than the three-sigma analytical uncertainty of 0.057 pCi/L. The reported result was qualified by the analytical laboratory with a "J" flag to indicate that the analyte is classified as detected, but the reported value is expected to be more uncertain than usual. This detection is not supported by prior data since Pu-238 has not been detected previously at Buckman Well No. 1.

- **Tritium.** No tritium was detected in any of the samples collected from Buckman Wells Nos. 1, 2, and 8 at activities greater than the University of Miami Tritium Laboratory's MDA of 0.29 pCi/L.

General Inorganics. Results are summarized in Table 2.0.

All of the general inorganic results were below applicable regulatory standards with the exception of total dissolved solids (TDS) at Buckman Well No. 2. The TDS concentration at Buckman Well No. 2 was reported at 544 mg/L, greater than the National Secondary Drinking Water Standard of 500 mg/L. The National Secondary Drinking Water Standards are non-enforceable guidelines regarding contaminants that may cause cosmetic effects (such as taste, odor, or color).

Perchlorate. Results are summarized in Table 2.0.

- **EPA Method 314-Ion Chromatography.** Samples from Buckman Wells Nos. 1 and 8 were analyzed for perchlorate by EPA Method 314.0, Ion Chromatography. All results were non-detect at GEL's Minimum Detection Limit (MDL) of 4.00 µg/L.

- **LC/MS/MS.** Samples from Buckman Wells Nos. 1, 2, and 8 were also analyzed for perchlorate by Liquid Chromatography/Mass Spectroscopy/ Mass Spectroscopy (LC/MS/MS). GEL's MDL for perchlorate by LC/MS/MS is 0.05 µg/L. Perchlorate was detected at all locations. The analytical results are presented in the table below. Also included for your information are the results from 2004 and 2005.

Perchlorate by LC/MS/MS, 2004-2006 (µg/L).

Location	5/25/04	10/26/04	6/8/05	7/12/06
Buckman No. 1	0.433	0.352	0.356	0.331
Buckman No. 2	NA	0.356	0.354	0.310
Buckman No. 8	0.298	0.271	0.300	0.275

All perchlorate results obtained during the July 12, 2006, sampling event were well below the federal Drinking Water Equivalent Level (DWEL) of 24.5 µg/L. The 2006 perchlorate concentrations presented above are consistent with LC/MS/MS results reported in 2004 and 2005. Currently, neither the federal government nor the State of New Mexico has established a drinking water standard for perchlorate.

In 2005, the EPA established an official reference dose (RfD) for perchlorate in drinking water of 0.0007 mg/kg/day. A reference dose is a scientific estimate of a daily exposure level that is not expected to cause adverse health effects in humans. The new reference dose translates into a DWEL of 24.5 µg/L for a 70-kg adult at a drinking water consumption level of 2 liters per day.

Metals. Results are summarized in Table 3.0.

All of the metals results were below EPA Maximum Contaminant Levels (MCLs) with the exception of arsenic (As) at Buckman Well No. 1 and uranium (U) at Buckman Well No. 2. The reported arsenic concentration at Buckman Well No. 1 of 11.1 µg/L exceeds the EPA MCL of 10 µg/L. In June 2005, the reported arsenic result from Buckman Well No. 1 was 9.8 µg/L. The elevated uranium result at Buckman Well No. 2 was discussed previously (see Radiologicals).

Samples from Buckman Well Nos. 1, 2, and 8 were submitted to two, independent analytical laboratories for total chromium and hexavalent chromium (Cr VI) analysis. The results are presented in the following table.

Total and Hexavalent Chromium Results, July 12, 2006 (µg/L).

	Cr (VI)[1]		Total Cr[2]
Location	Unfiltered	Filtered	Unfiltered
Buckman Well No. 1	<20U	<20U	9.8J-
Buckman Well No. 2	<20U	<20U	7.2J-
Buckman Well No. 8	<20U	<20U	8.9J-

[1]Analysis by Severn Trent Laboratories, Inc.
[2]Analysis by General Engineering Laboratories, Inc.
U means the compound was analyzed for but not detected
J- means the analyte is classified as detected but the reported concentration value is expected to be more uncertain than usual with a potential negative bias.

The unfiltered and filtered hexavalent chromium (Cr (VI)) concentrations were below the Minimum Detection Limit (MDL) of 20 µg/L. The unfiltered total chromium concentrations ranged from 7.2 µg/L to 9.8 µg/L. The unfiltered total chromium results from the June 2005 sampling at Buckman Well Nos. 1, 2, and 8 were 7.9 µg/L, 3.2 µg/L, and 5.1 µg/L, respectively.

The total chromium results referenced above are well below the EPA's MCL for chromium of 100 µg/L and the New Mexico ground water standard for chromium of 50 µg/L (20.6.2.3103 NMAC). Neither the federal government nor the State of New Mexico limits the concentration of hexavalent chromium (Cr (VI)) in drinking water. Instead, both regulate total chromium in drinking water.

Organics

On July 12, 2006, samples from Buckman Wells Nos. 1, 2, and 8 were submitted to GEL for HE, SVOA, VOA, PCB, and pesticide analysis. The analytical results are discussed below.

- **High Explosives (HE).** No high explosive compounds were detected in any of the samples collected from Buckman Wells Nos. 1, 2, and 8 at concentrations greater than GEL's MDL.

- **Semi-Volatile Organic Compounds (SVOA).** No semi-volatile organic compounds were detected in any of the samples collected from Buckman Wells Nos. 1, 2, and 8 at concentrations greater than GEL's MDL.

- **Volatile Organic Compounds (VOA).** No volatile organic compounds were detected in any of the samples collected from Buckman Wells Nos. 1, 2, and 8 at concentrations greater than GEL's MDL with the exception of the following:

  1. Buckman Well No. 1: Acetone = 2.19J+ µg/L.

  Secondary validation qualified the above result as detected, but the reported concentration value is expected to be more uncertain than usual with a potential positive bias (J+ flag). In addition, the detection of acetone in a Field Trip Blank (FTB) associated with this sampling event indicates a potential for field or laboratory contamination.

- **Polychlorinated biphenyls (PCBs).** No PCBs were detected in any of the samples collected from Buckman Wells Nos. 1, 2, and 8 at concentrations greater than GEL's MDL.

- **Pesticides.** No pesticides were detected in any of the samples collected from Buckman Wells Nos. 1, 2, and 8 at concentrations greater than GEL's MDL

In summary, all sample results were below EPA Primary MCLs, National Secondary Drinking Water Standards, and EPA screening levels with the exception of (1) TDS at Buckman Well No. 2, (2) uranium at Buckman Well No. 2, and (3) arsenic at Buckman Well No. 1. The presence of arsenic and uranium in Buckman groundwater occurs from the erosion of natural deposits. The July 2006 results for both arsenic and uranium are consistent with previous results obtained from these wells.

Please contact Bob Beers of the Laboratory's Water Stewardship Program-Water Quality & RCRA Group at (505) 667-7969 (bbeers@lanl.gov) if you would like additional information regarding this report.

Sincerely,

Andrew Phelps
Associate Director
Environmental Programs

RECEIVED
OCT 2006
NMED Hazardous Waste Bureau

AP/BB/tml

Enclosure: Attachment 1.0, Analytical Reports

Cy: (w/enc)
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Table 1.0. City of Santa Fe, Buckman Water Supply Wells, Monitoring Results, Radiologicals, July 12, 2006.

	Buckman Well No. 1				Buckman Well No. 2				Buckman Well No. 8				
Analyte	Result (pCi/L)	Uncert[1]	MDA[2]	Qual[3]	Result (pCi/L)	Uncert[1]	MDA[2]	Qual[3]	Result (pCi/L)	Uncert[1]	MDA[2]	Qual[3]	SDWA MCL (pCi/L)
Am-241	0.0071	0.005	0.023	U[4]	0.0125	0.007	0.032	U[4]	-0.0032	0.003	0.024	U[4]	
Cs-137	-0.073	1.16	4.09	U	-0.642	1.10	3.97	U	1.67	1.16	4.52	U	
GROSSA	10.9	1.84	2.10	J-[5]	33.8	4.56	4.64	J-	12.9	1.39	1.68	J-	15
GROSSB	4.9	0.495	1.55		20.1	1.57	4.59		6.7	0.760	2.44	J	50[7]
GROSSG	113	96	356	U	93	105	312	U	302	240	806	U	
Pu-238	0.044	0.019	0.035	J[6]	-0.105	0.017	0.025	U	-0.002	0.003	0.019	U	
Sr-90	-0.011	0.074	0.364	U	0.036	0.076	0.359	U	0.078	0.070	0.309	U	8
U-234	6.38	0.391	0.166		35.2	1.94	0.229		9.35	0.539	0.163		
U-235,236	0.432	0.070	0.14		1.59	0.174	0.193		0.338	0.061	0.137	J	
U-238	4.01	0.269	0.176		26.9	1.51	0.244		6.04	0.372	0.173		
Tritium	-0.03	0.29	0.29	U	0.06	0.29	0.29	U	-0.10	0.29	0.29	U	20,000

Notes:

[1]Uncert means the analytical uncertainty (+/-). Uncertainties are expressed as one standard deviation (1 sigma).

[2]MDA means the Minimum Detectable Activity as established by the analytical laboratory.

[3]Qual means the qualifier codes assigned by the analytical laboratory and an independent, secondary validator.

[4]U means that the compound was analyzed for but not detected.

[5]J- means the analyte is classified as detected but the reported concentration value is expected to be more uncertain than usual with a potential negative bias.

[6] J means the analyte is classified as detected but the reported concentration value is expected to be more uncertain than usual.

[7]Screening Level

All analyses by General Engineering Laboratories, Inc. with the exception of tritium by the University of Miami Tritium Laboratory.

Table 2.0. City of Santa Fe, Buckman Water Supply Wells, Monitoring Results, Inorganics & Perchlorate, July 12, 2006.

	Buckman Well No. 1		Buckman Wel No. 2		Buckman Well No. 8			
Analyte	Result	Qual[1]	Result	Qual[1]	Result	Qual[1]	SDWA MCL	Units
General Inorganics								
Alkalinity-CO3	2.38		0.784	J[3]	0.897	J		mg/L
Alkalinity-CO3+HCO3	186	J	428	J	246	J		mg/L
Bromide	< 0.066	U[2]	< 0.066	U	< 0.066	U		mg/L
Cyanide (Total)	< 0.0015	UJ	< 0.0015	UJ	< 0.0015	UJ	0.2	mg/L
Calcium	6.1		32.9		16.5			mg/L
Chloride	2.89		4.29		2.36		250[7]	mg/L
Fluoride	0.625		0.527		0.432		4	mg/L
Hardness	16.2		105		52.9			mg/L
Potassium	1.83		3.96		2.8			mg/L
Magnesium	0.318		5.55		2.6			mg/L
Ammonia as Nitrogen	< 0.035	J, U	< 0.058	U	< 0.018	J, U		mg/L
Nitrate+Nitrite as N	1.03		1.22		0.547		10	mg/L
Sodium	94.7		178		103			mg/L
Total Phosphate as Phosphorus	< 0.01	U	0.029	J	< 0.01	U		mg/L
Sulfate	12.1		19.6		11.5		250[7]	mg/L
Specific Conductance	434		892		529			uS/cm
Suspended Sediment Concentration (TSS)	< 1.27	U	< 2.85	U	< 1.27	U		mg/L
Silicon Dioxide	41.8	N[5], J-[4]	40.8	N, J-	38.7	N, J-		mg/L
Total Dissolved Solids (TDS)	279		544		328		500[7]	mg/L
TKN	< 0.039	J, U	< 0.013	J, U	< 0.01	UJ		mg/L
pH	8.28	H[6], J	7.24	H, J	7.63	H, J	6.5-8.5[7]	su
Perchlorate								
Perchlorate-LC/MS/MS	0.331		0.310		0.275			ug/L
Perchlorate-EPA Method 314	< 4	U	< 4	U	< 4	U		ug/L

Notes:

[1]Qual means the qualifier codes assigned by the analytical laboratory and an independent, secondary validator.

[2]U means the compound was analyzed for but not detected.

[3]J means the analyte is classified as detected but the reported concentration value is expected to be more uncertain than usual.

[4]J- means the analyte is classified as detected but the reported concentration value is expected to be more uncertain than usual with a potential negative bias.

[5]N means presumptive evidence of the presence of the material.

[6]H means that the analytical holding time was exceeded.

[7]National Secondary Drinking Water Standard

Table 3.0. City of Santa Fe, Buckman Water Supply Wells, Monitoring Results, Metals, July 12, 2006.

	Buckman Well No. 1		Buckman Well No. 2		Buckman Well No. 8			
Analyte	Result	Qual[1]	Result	Qual[1]	Result	Qual[1]	SDWA MCL	Units
Metals								
Al	< 68	U[2]	< 68	U[2]	< 68	U[2]	50-200[5]	ug/L
Sb	< 0.5	U	< 0.5	U	< 0.5	U	6	ug/L
As	11.1	J[3]	9.3	J[3]	< 6	U	10	ug/L
Ba	29.2		103		52.8		2000	ug/L
Be	< 1	U	< 1	U	< 1	U	4	ug/L
B	93.5		192		86.9		5	ug/L
Cd	< 0.1	U	< 0.1	U	< 0.1	U	100	ug/L
Cr, nonfiltered	9.8	J-[4]	7.2	J-	8.9	J-	100	ug/L
Cr (VI), nonfiltered	< 20.0	U	< 20.0	U	< 20.0	U	100	ug/L
Cr (VI), filtered	< 20.0	U	< 20.0	U	< 20.0	U	100	ug/L
Co	< 1	U	< 1	U	< 1	U		ug/L
Cu	4.3	J	3.6	J	< 3	U	1300[6]	ug/L
Fe	< 18.1	J, U	< 18	U	< 18	U	300[5]	ug/L
Pb	< 0.5	U	< 0.5	U	< 0.5	U	15[6]	ug/L
Mn	< 2	U	< 2	U	< 2	U	50[5]	ug/L
Hg	< 0.06	U	< 0.06	U	< 0.06	U	2	ug/L
Mo	2.7	J	3.2	J	< 2	U		ug/L
Ni	< 0.5	UJ	< 1.1	UJ	< 0.61	UJ		ug/L
Se	< 2.5	U	< 2.5	U	< 2.5	U	50	ug/L
Ag	< 0.2	U	< 0.2	U	< 0.2	U	100	ug/L
Sr	110		895		427			ug/L
Tl	< 0.49	J,U	< 0.4	U	< 0.4	U	2	ug/L
Sn	< 2.5	U	< 2.5	U	< 2.5	U		ug/L
U	13.4		79.1		17.0		30	ug/L
V	32.3		31.5		27			ug/L
Zn	< 3.5	J,U	< 4.6	J,U	< 2.4	J,U	5000[5]	ug/L

Notes:

[1]Qual means the qualifier codes assigned by the analytical laboratory and an independent, secondary validator.

[2]U means the compound was analyzed for but not detected.

[3]J means the analyte is classified as detected but the reported concentration value is expected to be more uncertain than usual.

[4]J- means the analyte is classified as detected but the reported concentration value is expected to be more uncertain than usual with a potential negative bias.

[5]National Secondary Drinking Water Standard

[6]SDWA Action Level

ATTACHMENT 1.0

ANALYTICAL REPORTS

GENERAL ENGINEERING LABORATORIES
CHARLESTON, SC

- **General Inorganics**
- **Perchlorate by LC/MS/MS**
- **Metals**
- **Radiologicals**
- **Organics-VOA, SVOA, Pest, PCBs, HE**

SEVERN TRENT LABORATORIES
LOS ANGELES, CA

- **Hexavalent Chromium**

UNIVERSITY OF MIAMI TRITIUM LABORATORY, MIAMI, FL

- **Tritium**

SAMPLE LOCATIONS:

Buckman Wells Nos. 1, 2, and 8

SAMPLE DATE:

July 12, 2006

Buckman #1

GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Los Alamos National Laboratories
Address : PO Box 1663
TA-3, Bldg. 1237, Drop Pt. 03U
Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **ENV-WQH Groundwater**

Report Date: August 22, 2006

Client Sample ID: GU060700G1MB01
Sample ID: 167110001
Matrix: Ground Water
Collect Date: 12-JUL-06 09:45
Receive Date: 14-JUL-06
Collector: Client

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Conductivity Analysis Federal												
EPA120.1 Specific Conductivity												
Conductivity		434		1.00	1.00	umhos/cm	1	LXW1	08/07/06	1413	555935	1
Electrode Analysis Federal												
EPA 150.1 pH Federal												
pH at Temp 11.5C	H	8.28		0.010	0.100	SU	1	LXW1	07/17/06	1838	548279	2
Flow Injection Analysis Federal												
EPA 335.3 Cyanide, Total												
Cyanide, Total	U	ND		1.50	5.00	ug/L	1	KLP1	07/18/06	1704	548886	3
Hardness by Calculation												
SM18-2340B Total Hardness by Calculation												
Hardness as CaCO3		16.2		0.020	0.100	mg/L	1	JJ2	08/08/06	1023	556236	4
Ion Chromatography Federal												
EPA 300.0 Anions Liquid 28 day												
Bromide	U	ND		0.066	0.200	mg/L	1	RXM1	07/24/06	1903	551034	5
Chloride		2.89		0.066	0.200	mg/L	1					
Fluoride		0.625		0.033	0.100	mg/L	1					
Sulfate		12.1		0.100	0.400	mg/L	1					
EPA 314.0 Perchlorate by IC												
Perchlorate	U	ND		4.00	12.0	ug/L	1	MAR1	07/18/06	2141	548824	6
LC-MS/MS Perchlorate Federal												
EPA 6850 Modified Perchlorate by LC-MS/MS												
Perchlorate		0.331		0.050	0.200	ug/L	1	MAP	07/19/06	1309	548326	7
Perchlorate Isotope Ratio		0.00				ug/L	1					
Perchlorate-101		0.352		0.050	0.200	ug/L	1					
Mercury Analysis-CVAA												
EPA 245 Mercury cold vapor												
Mercury	U	ND		0.060	0.200	ug/L	1	ETL	07/27/06	1133	548945	8
Metals Analysis-ICP												
3005/6010 Aluminum Liquid Federal												
Aluminum	U	ND		68.0	200	ug/L	1	HSC	08/02/06	1523	548273	9
Arsenic	J	11.1		6.00	15.0	ug/L	1					
Barium		29.2		1.00	5.00	ug/L	1					
Beryllium	U	ND		1.00	5.00	ug/L	1					
Boron		93.5		10.0	50.0	ug/L	1					
Calcium		6100		36.0	100	ug/L	1					
Cobalt	U	ND		1.00	5.00	ug/L	1					

Buckman #1

GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Los Alamos National Laboratories
Address : PO Box 1663
TA-3, Bldg. 1237, Drop Pt. 03U
Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **ENV-WQH Groundwater**

Report Date: August 22, 2006

Client Sample ID: GU060700G1MB01
Sample ID: 167110001

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP												
3005/6010 Aluminum Liquid Federal												
Copper	J	4.31		3.00	10.0	ug/L	1					
Iron	J	18.1		18.0	100	ug/L	1					
Magnesium		318		85.0	300	ug/L	1					
Manganese	U	ND		2.00	10.0	ug/L	1					
Molybdenum	J	2.73		2.00	10.0	ug/L	1					
Potassium		1830		50.0	150	ug/L	1					
Silica		41.8		0.032	0.213	mg/L	1					
Sodium		94700		45.0	150	ug/L	1					
Strontium		110		1.00	5.00	ug/L	1					
Tin	U	ND		2.50	10.0	ug/L	1					
Vanadium		32.3		1.00	5.00	ug/L	1					
Zinc	J	3.47		2.00	10.0	ug/L	1					
Metals Analysis-ICP-MS												
3005/6020 Cadmium Federal												
Cadmium	U	ND		0.100	1.00	ug/L	1	PRB	08/06/06	2011	548313	10
Lead	U	ND		0.500	2.00	ug/L	1					
Selenium	U	ND		2.50	5.00	ug/L	1					
Silver	U	ND		0.200	1.00	ug/L	1					
Thallium	J	0.486		0.400	1.00	ug/L	1					
Uranium		13.4		0.050	0.200	ug/L	1					
Chromium		9.79		1.00	3.00	ug/L	1	PRB	08/09/06	1411	548313	11
Nickel	U	ND		0.500	2.00	ug/L	1					
Antimony	U	ND		0.500	2.00	ug/L	1	PRB	08/07/06	1116	548313	12
Nutrient Analysis Federal												
EPA 350.1 Nitrogen, Ammonia L												
Nitrogen, Ammonia	J	0.035		0.010	0.050	mg/L	1	KLP1	07/19/06	1638	548495	13
EPA 353.1 Nitrogen, (NO3/NO2)												
Nitrogen, Nitrate/Nitrite		1.03		0.014	0.050	mg/L	1	GXM 2	07/24/06	1507	550415	14
EPA 365.4 Phosphorus, Total in												
Phosphorus, Total as P	U	ND		0.010	0.050	mg/L	1	KLP1	07/18/06	1612	548573	15
Nitrogen, Total Kjeldahl (TKN)												
Nitrogen, Total Kjeldahl	J	0.039		0.010	0.100	mg/L	1	KLP1	07/19/06	0940	548566	16
Rad Alpha Spec Analysis												
Alphaspec Am241 Liquid												
Americium-241	U	ND	+/-0.00483	0.0234	0.050	pCi/L		JXG1	07/27/06	2108	548788	17
Alphaspec Pu, Liquid												
Plutonium-238		0.0436	+/-0.0192	0.0349	0.050	pCi/L		JXG1	07/31/06	1524	548789	18
Plutonium-239/240	U	ND	+/-0.0158	0.0406	0.050	pCi/L						

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TA-3, Bldg. 1237, Drop Pt. 03U
Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: ENV-WQH Groundwater

Report Date: August 22, 2006

Client Sample ID: GU060700G1MB01
Sample ID: 167110001

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis												
Alphaspec U, Liquid												
Uranium-234		6.38	+/-0.226	0.166	0.100	pCi/L		JXG1	08/04/06	1453	553275	19
Uranium-235/236		0.432	+/-0.0666	0.140	0.100	pCi/L						
Uranium-238		4.01	+/-0.179	0.176	0.100	pCi/L						
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Liquid												
Cesium-137	U	ND	+/-2.27	4.09	8.00	pCi/L		JPH1	08/11/06	1410	548585	20
Cobalt-60	U	ND	+/-2.33	3.97	8.00	pCi/L						
Gross Gamma	U	ND	+/-96.2	356	120	pCi/L						
Neptunium-237	U	ND	+/-16.6	28.1	10.0	pCi/L						
Potassium-40	U	ND	+/-47.1	41.2	10.0	pCi/L						
Sodium-22	U	ND	+/-2.14	4.00	10.0	pCi/L						
Rad Gas Flow Proportional Counting												
GFPC, Gross A/B, liquid												
Alpha		10.9	+/-1.75	2.10	3.00	pCi/L		JXS4	08/10/06	1511	549715	21
Beta		4.90	+/-0.487	1.55	3.00	pCi/L						
GFPC, Sr90, liquid												
Strontium-90	U	ND	+/-0.0735	0.364	0.500	pCi/L		BXF1	08/04/06	1050	550834	22
Rad Liquid Scintillation Analysis												
LSC, Tritium Dist, Liquid												
Tritium	U	ND	+/-57.8	192	200	pCi/L		DFA1	08/07/06	1733	549861	23
Solids Analysis Federal												
EPA 160.1 Solids, Dissolved-F												
Total Dissolved Solids		279		2.38	10.0	mg/L		GXA2	07/18/06	1438	549027	24
EPA 160.2 SSC												
Total Suspended Solids	U	ND		1.27	5.56	mg/L		GXA2	07/18/06	1357	549024	25
Titration Analysis Federal												
EPA 310.1 Total Alkalinity Federal												
Alkalinity, Total as CaCO3		186		0.725	1.00	mg/L		RG2	07/20/06	1021	549772	26
Carbonate alkalinity (CaCO3)		2.38		0.725	1.00	mg/L						
Volatile Organics Federal												
GEL 8260B Method List Liquid F												
1,1,1,2-Tetrachloroethane	U	ND		0.250	1.00	ug/L	1	YS1	07/22/06	1212	549966	27
1,1,1-Trichloroethane	U	ND		0.300	1.00	ug/L	1					
1,1,2,2-Tetrachloroethane	U	ND		0.250	1.00	ug/L	1					
1,1,2-Trichloroethane	U	ND		0.250	1.00	ug/L	1					
1,1-Dichloroethane	U	ND		0.300	1.00	ug/L	1					
1,1-Dichloroethylene	U	ND		0.300	1.00	ug/L	1					
1,1-Dichloropropene	U	ND		0.250	1.00	ug/L	1					
1,2,3-Trichlorobenzene	U	ND		0.300	1.00	ug/L	1					

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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **ENV-WQH Groundwater**

Report Date: August 22, 2006

Client Sample ID: GU060700G1MB01
Sample ID: 167110001

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics Federal												
GEL 8260B Method List Liquid F												
1,2,3-Trichloropropane	U	ND		0.300	1.00	ug/L	1					
1,2,4-Trichlorobenzene	U	ND		0.300	1.00	ug/L	1					
1,2,4-Trimethylbenzene	U	ND		0.250	1.00	ug/L	1					
1,2-Dibromo-3-chloropropane	U	ND		0.500	1.00	ug/L	1					
1,2-Dibromoethane	U	ND		0.250	1.00	ug/L	1					
1,2-Dichlorobenzene	U	ND		0.250	1.00	ug/L	1					
1,2-Dichloroethane	U	ND		0.250	1.00	ug/L	1					
1,2-Dichloropropane	U	ND		0.250	1.00	ug/L	1					
1,3,5-Trimethylbenzene	U	ND		0.250	1.00	ug/L	1					
1,3-Dichlorobenzene	U	ND		0.250	1.00	ug/L	1					
1,3-Dichloropropane	U	ND		0.250	1.00	ug/L	1					
1,4-Dichlorobenzene	U	ND		0.250	1.00	ug/L	1					
1,4-Dioxane	U	ND		20.0	50.0	ug/L	1					
2,2-Dichloropropane	U	ND		0.300	1.00	ug/L	1					
2-Butanone	U	ND		1.25	5.00	ug/L	1					
2-Chloro-1,3-butadiene	U	ND		0.300	1.00	ug/L	1					
2-Chlorotoluene	U	ND		0.250	1.00	ug/L	1					
2-Hexanone	U	ND		1.25	5.00	ug/L	1					
4-Chlorotoluene	U	ND		0.250	1.00	ug/L	1					
4-Isopropyltoluene	U	ND		0.250	1.00	ug/L	1					
4-Methyl-2-pentanone	U	ND		1.25	5.00	ug/L	1					
Acetone	J	2.19		1.25	5.00	ug/L	1					
Acetonitrile	U	ND		6.25	25.0	ug/L	1					
Acrolein	U	ND		3.00	5.00	ug/L	1					
Acrylonitrile	U	ND		1.00	5.00	ug/L	1					
Allyl chloride	U	ND		3.70	5.00	ug/L	1					
Benzene	U	ND		0.300	1.00	ug/L	1					
Bromobenzene	U	ND		0.250	1.00	ug/L	1					
Bromochloromethane	U	ND		0.300	1.00	ug/L	1					
Bromodichloromethane	U	ND		0.250	1.00	ug/L	1					
Bromoform	U	ND		0.250	1.00	ug/L	1					
Bromomethane	U	ND		0.500	1.00	ug/L	1					
Carbon disulfide	U	ND		1.25	5.00	ug/L	1					
Carbon tetrachloride	U	ND		0.250	1.00	ug/L	1					
Chlorobenzene	U	ND		0.250	1.00	ug/L	1					
Chloroethane	U	ND		0.500	1.00	ug/L	1					
Chloroform	U	ND		0.250	1.00	ug/L	1					
Chloromethane	U	ND		0.500	1.00	ug/L	1					
Dibromochloromethane	U	ND		0.250	1.00	ug/L	1					
Dibromomethane	U	ND		0.300	1.00	ug/L	1					
Dichlorodifluoromethane	U	ND		0.500	1.00	ug/L	1					
Ethyl methacrylate	U	ND		1.00	5.00	ug/L	1					

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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: ENV-WQH Groundwater

Report Date: August 22, 2006

Client Sample ID: GU060700G1MB01
Sample ID: 167110001

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal											
GEL 8260B Method List Liquid F											
Ethylbenzene	U	ND		0.250	1.00	ug/L	1				
Hexachlorobutadiene	U	ND		0.250	1.00	ug/L	1				
Iodomethane	U	ND		1.25	5.00	ug/L	1				
Isobutyl alcohol	U	ND		12.5	50.0	ug/L	1				
Isopropylbenzene	U	ND		0.250	1.00	ug/L	1				
Methacrylonitrile	U	ND		1.00	5.00	ug/L	1				
Methyl methacrylate	U	ND		1.00	5.00	ug/L	1				
Methylene chloride	U	ND		2.00	5.00	ug/L	1				
Naphthalene	U	ND		0.250	1.00	ug/L	1				
Propionitrile	U	ND		1.50	5.00	ug/L	1				
Styrene	U	ND		0.250	1.00	ug/L	1				
Tetrachloroethylene	U	ND		0.250	1.00	ug/L	1				
Toluene	U	ND		0.250	1.00	ug/L	1				
Trichloroethylene	U	ND		0.250	1.00	ug/L	1				
Trichlorofluoromethane	U	ND		0.310	1.00	ug/L	1				
Trichlorotrifluoroethane	U	ND		1.00	5.00	ug/L	1				
Vinyl acetate	U	ND		1.50	5.00	ug/L	1				
Vinyl chloride	U	ND		0.500	1.00	ug/L	1				
cis-1,2-Dichloroethylene	U	ND		0.300	1.00	ug/L	1				
cis-1,3-Dichloropropylene	U	ND		0.250	1.00	ug/L	1				
m,p-Xylenes	U	ND		0.250	2.00	ug/L	1				
n-Butylbenzene	U	ND		0.250	1.00	ug/L	1				
n-Propylbenzene	U	ND		0.250	1.00	ug/L	1				
o-Xylene	U	ND		0.250	1.00	ug/L	1				
sec-Butylbenzene	U	ND		0.250	1.00	ug/L	1				
tert-Butylbenzene	U	ND		0.250	1.00	ug/L	1				
trans-1,2-Dichloroethylene	U	ND		0.300	1.00	ug/L	1				
trans-1,3-Dichloropropylene	U	ND		0.250	1.00	ug/L	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 245.1/245.2 Prep	EPA 245 Mercury	RDD1	07/26/06	1130	548944
EPA 335.3	EPA 335.3 Total Cyanide	EXF1	07/18/06	1610	548885
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	AXH3	07/18/06	1130	548489
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	AXH3	07/17/06	1136	548556
EPA 365.4 Prep	EPA 365.4 Phosphorus, Total in liquid-Fe	AXH3	07/17/06	1139	548567
SW846 3005A	ICP-MS 3005 PREP	LXE1	08/01/06	1200	548312
SW846 3005A	ICP-TRACE SW846 3005A	FGA	08/01/06	1230	548272
SW846 6850 Modified	EPA 6850 Perchlorate Extraction in Liquid	CXM1	07/17/06	1106	548325

Buckman #7

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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **ENV-WQH Groundwater**

Report Date: August 22, 2006

Client Sample ID: GU060700G1MB01
Sample ID: 167110004
Matrix: Ground Water
Collect Date: 12-JUL-06 09:45
Receive Date: 14-JUL-06
Collector: Client

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-volatile Mass spec Organics Federal												
8270C/3510C App.9 BNA Liquid F												
1,2,4,5-Tetrachlorobenzene	U	ND		2.06	10.3	ug/L	1	JLD1	07/18/06	1607	548736	1
1,2,4-Trichlorobenzene	U	ND		2.06	10.3	ug/L	1					
1,2-Dichlorobenzene	U	ND		2.06	10.3	ug/L	1					
Azobenzene	U	ND		2.06	10.3	ug/L	1					
1,3-Dichlorobenzene	U	ND		2.06	10.3	ug/L	1					
1,4-Dichlorobenzene	U	ND		2.06	10.3	ug/L	1					
1,4-Dioxane	U	ND		1.03	10.3	ug/L	1					
1-Methylnaphthalene	U	ND		0.309	1.03	ug/L	1					
2,3,4,6-Tetrachlorophenol	U	ND		2.06	10.3	ug/L	1					
2,4,5-Trichlorophenol	U	ND		1.03	10.3	ug/L	1					
2,4,6-Trichlorophenol	U	ND		2.06	10.3	ug/L	1					
2,4-Dichlorophenol	U	ND		2.06	10.3	ug/L	1					
2,4-Dimethylphenol	U	ND		2.06	10.3	ug/L	1					
2,4-Dinitrophenol	U	ND		10.3	20.6	ug/L	1					
2,4-Dinitrotoluene	U	ND		2.06	10.3	ug/L	1					
2,6-Dinitrotoluene	U	ND		2.06	10.3	ug/L	1					
2-Chloronaphthalene	U	ND		0.361	1.03	ug/L	1					
2-Chlorophenol	U	ND		2.06	10.3	ug/L	1					
2-Methyl-4,6-dinitrophenol	U	ND		3.09	10.3	ug/L	1					
2-Methylnaphthalene	U	ND		0.309	1.03	ug/L	1					
2-Nitrophenol	U	ND		2.06	10.3	ug/L	1					
3,3'-Dichlorobenzidine	U	ND		1.03	10.3	ug/L	1					
4-Bromophenylphenylether	U	ND		2.06	10.3	ug/L	1					
Parachlorometa cresol	U	ND		2.06	10.3	ug/L	1					
4-Chloroaniline	U	ND		2.06	10.3	ug/L	1					
4-Chlorophenylphenylether	U	ND		2.06	10.3	ug/L	1					
4-Nitrophenol	U	ND		2.06	10.3	ug/L	1					
Acenaphthene	U	ND		0.320	1.03	ug/L	1					
Acenaphthylene	U	ND		0.206	1.03	ug/L	1					
Aniline	U	ND		2.58	10.3	ug/L	1					
Anthracene	U	ND		0.206	1.03	ug/L	1					
Atrazine	U	ND		2.06	10.3	ug/L	1					
Benzidine	U	ND		2.06	51.5	ug/L	1					
Benzo(a)anthracene	U	ND		0.206	1.03	ug/L	1					
Benzo(a)pyrene	U	ND		0.206	1.03	ug/L	1					
Benzo(b)fluoranthene	U	ND		0.206	1.03	ug/L	1					
Benzo(ghi)perylene	U	ND		0.206	1.03	ug/L	1					
Benzo(k)fluoranthene	U	ND		0.206	1.03	ug/L	1					

Buckman #1

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Project: **ENV-WQH Groundwater**

Report Date: August 22, 2006

Client Sample ID: GU060700G1MB01
Sample ID: 167110004

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-volatile Mass spec Organics Federal											
8270C/3510C App.9 BNA Liquid F											
Benzoic acid	U	ND		6.19	20.6	ug/L	1				
Benzyl alcohol	U	ND		2.06	10.3	ug/L	1				
Butylbenzylphthalate	U	ND		2.06	10.3	ug/L	1				
Chrysene	U	ND		0.206	1.03	ug/L	1				
Di-n-butylphthalate	U	ND		2.06	10.3	ug/L	1				
Di-n-octylphthalate	U	ND		3.09	10.3	ug/L	1				
Dibenzo(a,h)anthracene	U	ND		0.206	1.03	ug/L	1				
Dibenzofuran	U	ND		2.06	10.3	ug/L	1				
Diethylphthalate	U	ND		2.06	10.3	ug/L	1				
Dimethylphthalate	U	ND		2.06	10.3	ug/L	1				
Dinoseb	U	ND		2.06	10.3	ug/L	1				
Diphenylamine	U	ND		3.09	10.3	ug/L	1				
Fluoranthene	U	ND		0.206	1.03	ug/L	1				
Fluorene	U	ND		0.206	1.03	ug/L	1				
Hexachlorobenzene	U	ND		2.06	10.3	ug/L	1				
Hexachlorobutadiene	U	ND		2.06	10.3	ug/L	1				
Hexachlorocyclopentadiene	U	ND		2.06	10.3	ug/L	1				
Hexachloroethane	U	ND		2.06	10.3	ug/L	1				
Indeno(1,2,3-cd)pyrene	U	ND		0.206	1.03	ug/L	1				
Isophorone	U	ND		2.06	10.3	ug/L	1				
N-Methyl-N-nitrosomethylamine	U	ND		2.06	10.3	ug/L	1				
N-Nitrosodi-n-butylamine	U	ND		2.06	10.3	ug/L	1				
N-Nitrosodiethylamine	U	ND		2.06	10.3	ug/L	1				
N-Nitrosodi--n-propylamine	U	ND		2.06	10.3	ug/L	1				
N-Nitrosopyrrolidine	U	ND		2.06	10.3	ug/L	1				
Naphthalene	U	ND		0.309	1.03	ug/L	1				
Nitrobenzene	U	ND		3.09	10.3	ug/L	1				
Pentachlorobenzene	U	ND		2.06	10.3	ug/L	1				
Pentachlorophenol	U	ND		2.06	10.3	ug/L	1				
Phenanthrene	U	ND		0.206	1.03	ug/L	1				
Phenol	U	ND		1.03	10.3	ug/L	1				
Pyrene	U	ND		0.309	1.03	ug/L	1				
bis(2-Chloroethoxy)methane	U	ND		3.09	10.3	ug/L	1				
bis(2-Chloroethyl) ether	U	ND		2.06	10.3	ug/L	1				
bis(2-Chloroisopropyl)ether	U	ND		2.06	10.3	ug/L	1				
bis(2-Ethylhexyl)phthalate	U	ND		2.06	10.3	ug/L	1				
m,p-Cresols	U	ND		3.09	10.3	ug/L	1				
3-Nitroaniline	U	ND		2.06	10.3	ug/L	1				
o-Cresol	U	ND		2.06	10.3	ug/L	1				
2-Nitroaniline	U	ND		2.06	10.3	ug/L	1				
4-Nitroaniline	U	ND		3.09	10.3	ug/L	1				

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Contact: Ms. Joylene Valdez
Project: **ENV-WQH Groundwater**

Report Date: August 22, 2006

Client Sample ID: GU060700G1MB01
Sample ID: 167110007
Matrix: Ground Water
Collect Date: 12-JUL-06 09:45
Receive Date: 14-JUL-06
Collector: Client

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-Pesticide Federal												
8081A Pesticides/4503												
4,4'-DDD	U	ND		0.0051	0.0408	ug/L	1	SJ	08/01/06	1305	548747	1
4,4'-DDE	U	ND		0.0051	0.0408	ug/L	1					
4,4'-DDT	U	ND		0.0102	0.0408	ug/L	1					
Aldrin	U	ND		0.0051	0.0204	ug/L	1					
Dieldrin	U	ND		0.0051	0.0408	ug/L	1					
Endosulfan I	U	ND		0.0051	0.0204	ug/L	1					
Endosulfan II	U	ND		0.0051	0.0408	ug/L	1					
Endosulfan sulfate	U	ND		0.0051	0.0408	ug/L	1					
Endrin	U	ND		0.0051	0.0408	ug/L	1					
Endrin aldehyde	U	ND		0.0051	0.0408	ug/L	1					
Endrin ketone	U	ND		0.0128	0.0408	ug/L	1					
Heptachlor	U	ND		0.00668	0.0204	ug/L	1					
Heptachlor epoxide	U	ND		0.0051	0.0204	ug/L	1					
Methoxychlor	U	ND		0.051	0.204	ug/L	1					
Toxaphene	U	ND		0.153	0.510	ug/L	1					
alpha-BHC	U	ND		0.0051	0.0204	ug/L	1					
alpha-Chlordane	U	ND		0.0051	0.0204	ug/L	1					
beta-BHC	U	ND		0.00862	0.0204	ug/L	1					
delta-BHC	U	ND		0.0051	0.0204	ug/L	1					
gamma-BHC (Lindane)	U	ND		0.0051	0.0204	ug/L	1					
gamma-Chlordane	U	ND		0.0051	0.0204	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	3510C PEST Prep H2O Federal	JXA2	07/18/06	1232	548746

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8081A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	8081A Pesticides/4503	0.612	1.02	60	(35%-120%)
Decachlorobiphenyl	8081A Pesticides/4503	0.708	1.02	69	(36%-120%)

Buckman #1

GENERAL ENGINEERING LABORATORIES, LLC

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Certificate of Analysis

Company : Los Alamos National Laboratories
Address : PO Box 1663
TA-3, Bldg. 1237, Drop Pt. 03U
Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **ENV-WQH Groundwater**

Report Date: August 22, 2006

Client Sample ID: GU060700G1MB01
Sample ID: 167110010
Matrix: Ground Water
Collect Date: 12-JUL-06 09:45
Receive Date: 14-JUL-06
Collector: Client

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatiles-PCB Federal											
GW: PCB/WG,WP: 8082 PCB w/MS/4504											
Aroclor-1016	U	ND		0.0343	0.103	ug/L	1	KXY1 07/27/06	1904	548688	1
Aroclor-1221	U	ND		0.0343	0.103	ug/L	1				
Aroclor-1232	U	ND		0.0343	0.103	ug/L	1				
Aroclor-1242	BJP	0.100		0.0343	0.103	ug/L	1				
Aroclor-1248	U	ND		0.0343	0.103	ug/L	1				
Aroclor-1254	U	ND		0.0343	0.103	ug/L	1				
Aroclor-1260	U	ND		0.0343	0.103	ug/L	1				
Aroclor-1262	U	ND		0.0343	0.103	ug/L	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	3510C PCB Prep H2O Federal	PXB2	07/18/06	1501	548687

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8082	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	GW: PCB/WG,WP: 8082 PCB w/MS/4504	0.150	0.206	73	(35%-120%)
Decachlorobiphenyl	GW: PCB/WG,WP: 8082 PCB w/MS/4504	0.0963	0.206	47	(36%-120%)

Notes:
The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- H Analytical holding time was exceeded
- J Value is estimated
- N Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC).

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BUCKMAN #1

1

High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: GU060700G1MB01

Lab Code: GEL

GEL Job No (SDG) 167110

Matrix: GROUND WATER

GEL Sample ID: 167110001

Sample Amount 770

Moisture:

Amount Units mL

Date Received: 14-JUL-06

Extraction Type Sol Exchange

Extraction Batch ID: 548571

Concentrated Extract Volume (mL) 5

Date Extracted: 18-JUL-06

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0829096a

Date Analyzed: 31-AUG-06 18:13

Units: ug/L

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	0.325	HU
121-14-2	2,4-Dinitrotoluene	0.325	HU
121-82-4	RDX	0.325	HU
19406-51-0	4-Amino-2,6-dinitrotoluene	0.325	HU
2691-41-0	HMX	0.325	HU
35572-78-2	2-Amino-4,6-dinitrotoluene	0.325	HU
479-45-8	Tetryl	0.649	HU
606-20-2	2,6-Dinitrotoluene	0.325	HU
78-11-5	PETN	1.3	HU
88-72-2	o-Nitrotoluene	0.325	HU
98-95-3	Nitrobenzene	0.325	HU
99-08-1	m-Nitrotoluene	0.325	HU
99-35-4	1,3,5-Trinitrobenzene	0.325	HU
99-65-0	m-Dinitrobenzene	0.325	HU
99-99-0	p-Nitrotoluene	0.649	HU

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amoun}} \times \text{Dilution Factor}$$

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Buckman #1

1

High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: GU060700G1MB01

Lab Code: GEL

GEL Job No (SDG) 167110

Matrix: GROUND WATER

GEL Sample ID: 167110001

Sample Amount 770

Moisture:

Amount Units mL

Date Received: 14-JUL-06

Extraction Type Sol Exchange

Extraction Batch ID: 548571

Concentrated Extract Volume (mL) 5

Date Extracted: 18-JUL-06

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS0721087.wiff

Date Analyzed: 24-JUL-06 16:51

Units: ug/L

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	1.3	U
59229-75-3	2,6-Diamino-4-nitrotoluene	1.3	U
618-87-1	3,5-Dinitroaniline	1.3	U
6629-29-4	2,4-Diamino-6-nitrotoluene	1.3	U
78-30-8	tris(o-cresyl) phosphate	1.3	U

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amoun}} \times \text{Dilution Factor}$$

Buckman #2

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Certificate of Analysis

Company : Los Alamos National Laboratories
Address : PO Box 1663
TA-3, Bldg. 1237, Drop Pt. 03U
Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **ENV-WQH Groundwater**

Report Date: August 22, 2006

Client Sample ID: GU060700G2MB01
Sample ID: 167110002
Matrix: Ground Water
Collect Date: 12-JUL-06 10:10
Receive Date: 14-JUL-06
Collector: Client

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Conductivity Analysis Federal												
EPA120.1 Specific Conductivity												
Conductivity		892		1.00	1.00	umhos/cm	1	LXW1	08/07/06	1414	555935	1
Electrode Analysis Federal												
EPA 150.1 pH Federal												
pH at Temp 11.7C	H	7.24		0.010	0.100	SU	1	LXW1	07/17/06	1840	548279	2
Flow Injection Analysis Federal												
EPA 335.3 Cyanide, Total												
Cyanide, Total	U	ND		1.50	5.00	ug/L	1	KLP1	07/18/06	1705	548886	3
Hardness by Calculation												
SM18-2340B Total Hardness by Calculation												
Hardness as CaCO3		105		0.020	0.100	mg/L	1	JJ2	08/08/06	1023	556236	4
Ion Chromatography Federal												
EPA 300.0 Anions Liquid 28 day												
Bromide	U	ND		0.066	0.200	mg/L	1	RXM1	07/24/06	1923	551034	5
Chloride		4.29		0.066	0.200	mg/L	1					
Fluoride		0.527		0.033	0.100	mg/L	1					
Sulfate		19.6		0.100	0.400	mg/L	1					
EPA 314.0 Perchlorate by IC												
Perchlorate	U	ND		4.00	12.0	ug/L	1	MAR1	07/18/06	2156	548824	6
LC-MS/MS Perchlorate Federal												
EPA 6850 Modified Perchlorate by LC-MS/MS												
Perchlorate		0.310		0.050	0.200	ug/L	1	MAP	07/19/06	1318	548326	7
Perchlorate Isotope Ratio		0.00				ug/L	1					
Perchlorate-101		0.312		0.050	0.200	ug/L	1					
Mercury Analysis-CVAA												
EPA 245 Mercury cold vapor												
Mercury	U	ND		0.060	0.200	ug/L	1	ETL	07/27/06	1135	548945	8
Metals Analysis-ICP												
3005/6010 Aluminum Liquid Federal												
Aluminum	U	ND		68.0	200	ug/L	1	HSC	08/02/06	1528	548273	9
Arsenic	J	9.33		6.00	15.0	ug/L	1					
Barium		103		1.00	5.00	ug/L	1					
Beryllium	U	ND		1.00	5.00	ug/L	1					
Boron		192		10.0	50.0	ug/L	1					
Calcium		32900		36.0	100	ug/L	1					
Cobalt	U	ND		1.00	5.00	ug/L	1					

Buckman #2

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Certificate of Analysis

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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **ENV-WQH Groundwater**

Report Date: August 22, 2006

Client Sample ID: GU060700G2MB01 Project: ESHL00701
Sample ID: 167110002 Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP												
3005/6010 Aluminum Liquid Federal												
Copper	J	3.61		3.00	10.0	ug/L	1					
Iron	U	ND		18.0	100	ug/L	1					
Magnesium		5550		85.0	300	ug/L	1					
Manganese	U	ND		2.00	10.0	ug/L	1					
Molybdenum	J	3.21		2.00	10.0	ug/L	1					
Potassium		3960		50.0	150	ug/L	1					
Silica		40.8		0.032	0.213	mg/L	1					
Strontium		895		1.00	5.00	ug/L	1					
Tin	U	ND		2.50	10.0	ug/L	1					
Vanadium		31.5		1.00	5.00	ug/L	1					
Zinc	J	4.62		2.00	10.0	ug/L	1					
Sodium		178000		225	750	ug/L	5	HSC	08/04/06	1258	548273	10
Metals Analysis-ICP-MS												
3005/6020 Cadmium Federal												
Cadmium	U	ND		0.100	1.00	ug/L	1	PRB	08/06/06	2015	548313	11
Lead	U	ND		0.500	2.00	ug/L	1					
Selenium	U	ND		2.50	5.00	ug/L	1					
Silver	U	ND		0.200	1.00	ug/L	1					
Thallium	U	ND		0.400	1.00	ug/L	1					
Uranium		79.1		0.050	0.200	ug/L	1					
Chromium		7.15		1.00	3.00	ug/L	1	PRB	08/09/06	1414	548313	12
Nickel	J	1.07		0.500	2.00	ug/L	1					
Antimony	U	ND		0.500	2.00	ug/L	1	PRB	08/07/06	1118	548313	13
Nutrient Analysis Federal												
EPA 350.1 Nitrogen, Ammonia L												
Nitrogen, Ammonia		0.058		0.010	0.050	mg/L	1	KLP1	07/19/06	1639	548495	14
EPA 353.1 Nitrogen, (NO3/NO2)												
Nitrogen, Nitrate/Nitrite		1.22		0.014	0.050	mg/L	1	GXM 2	07/24/06	1653	550416	15
EPA 365.4 Phosphorus, Total in												
Phosphorus, Total as P	J	0.029		0.010	0.050	mg/L	1	KLP1	07/18/06	1513	548573	16
Nitrogen, Total Kjeldahl (TKN)												
Nitrogen, Total Kjeldahl	J	0.013		0.010	0.100	mg/L	1	KLP1	07/19/06	1023	548566	17
Rad Alpha Spec Analysis												
Alphaspec Am241 Liquid												
Americium-241	U	ND	+/-0.0072	0.0321	0.050	pCi/L		JXG1	07/27/06	2108	548788	18
Alphaspec Pu, Liquid												
Plutonium-238	U	ND	+/-0.0166	0.0253	0.050	pCi/L		JXG1	07/31/06	1522	548789	19
Plutonium-239/240	U	ND	+/-0.00588	0.0294	0.050	pCi/L						

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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **ENV-WQH Groundwater**

Report Date: August 22, 2006

Client Sample ID: GU060700G2MB01
Sample ID: 167110002

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis												
Alphaspec U, Liquid												
Uranium-234		35.2	+/-0.623	0.229	0.100	pCi/L		JXG1	08/04/06	1453	553275	20
Uranium-235/236		1.59	+/-0.153	0.193	0.100	pCi/L						
Uranium-238		26.9	+/-0.544	0.244	0.100	pCi/L						
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Liquid												
Cesium-137	U	ND	+/-2.16	3.97	8.00	pCi/L		JPH1	08/11/06	1410	548585	21
Cobalt-60	U	ND	+/-2.54	4.37	8.00	pCi/L						
Gross Gamma	U	ND	+/-105	312	120	pCi/L						
Neptunium-237	U	ND	+/-19.6	33.0	10.0	pCi/L						
Potassium-40	U	ND	+/-26.6	60.6	10.0	pCi/L						
Sodium-22	U	ND	+/-2.94	4.18	10.0	pCi/L						
Rad Gas Flow Proportional Counting												
GFPC, Gross A/B, liquid												
Alpha		33.8	+/-4.23	4.64	3.00	pCi/L		JXS4	08/10/06	1511	549715	22
Beta		20.1	+/-1.53	4.59	3.00	pCi/L						
GFPC, Sr90, liquid												
Strontium-90	U	ND	+/-0.0764	0.359	0.500	pCi/L		BXF1	08/04/06	1050	550834	23
Rad Liquid Scintillation Analysis												
LSC, Tritium Dist, Liquid												
Tritium	U	ND	+/-57.9	193	200	pCi/L		DFA1	08/07/06	2017	549861	24
Solids Analysis Federal												
EPA 160.1 Solids, Dissolved-F												
Total Dissolved Solids		544		2.38	10.0	mg/L		GXA2	07/18/06	1438	549027	25
EPA 160.2 SSC												
Total Suspended Solids	U	ND		2.85	12.5	mg/L		GXA2	07/18/06	1357	549024	26
Titration Analysis Federal												
EPA 310.1 Total Alkalinity Federal												
Alkalinity, Total as CaCO3		428		0.725	1.00	mg/L		RG2	07/20/06	1031	549772	27
Carbonate alkalinity (CaCO3)	J	0.784		0.725	1.00	mg/L						
Volatile Organics Federal												
GEL 8260B Method List Liquid F												
1,1,1,2-Tetrachloroethane	U	ND		0.250	1.00	ug/L	1	YS1	07/21/06	2047	549966	28
1,1,1-Trichloroethane	U	ND		0.300	1.00	ug/L	1					
1,1,2,2-Tetrachloroethane	U	ND		0.250	1.00	ug/L	1					
1,1,2-Trichloroethane	U	ND		0.250	1.00	ug/L	1					
1,1-Dichloroethane	U	ND		0.300	1.00	ug/L	1					
1,1-Dichloroethylene	U	ND		0.300	1.00	ug/L	1					
1,1-Dichloropropene	U	ND		0.250	1.00	ug/L	1					
1,2,3-Trichlorobenzene	U	ND		0.300	1.00	ug/L	1					

Buckman #2

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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: ENV-WQH Groundwater

Report Date: August 22, 2006

Client Sample ID: GU060700G2MB01
Sample ID: 167110002

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal											
GEL 8260B Method List Liquid F											
1,2,3-Trichloropropane	U	ND		0.300	1.00	ug/L	1				
1,2,4-Trichlorobenzene	U	ND		0.300	1.00	ug/L	1				
1,2,4-Trimethylbenzene	U	ND		0.250	1.00	ug/L	1				
1,2-Dibromo-3-chloropropane	U	ND		0.500	1.00	ug/L	1				
1,2-Dibromoethane	U	ND		0.250	1.00	ug/L	1				
1,2-Dichlorobenzene	U	ND		0.250	1.00	ug/L	1				
1,2-Dichloroethane	U	ND		0.250	1.00	ug/L	1				
1,2-Dichloropropane	U	ND		0.250	1.00	ug/L	1				
1,3,5-Trimethylbenzene	U	ND		0.250	1.00	ug/L	1				
1,3-Dichlorobenzene	U	ND		0.250	1.00	ug/L	1				
1,3-Dichloropropane	U	ND		0.250	1.00	ug/L	1				
1,4-Dichlorobenzene	U	ND		0.250	1.00	ug/L	1				
1,4-Dioxane	U	ND		20.0	50.0	ug/L	1				
2,2-Dichloropropane	U	ND		0.300	1.00	ug/L	1				
2-Butanone	U	ND		1.25	5.00	ug/L	1				
2-Chloro-1,3-butadiene	U	ND		0.300	1.00	ug/L	1				
2-Chlorotoluene	U	ND		0.250	1.00	ug/L	1				
2-Hexanone	U	ND		1.25	5.00	ug/L	1				
4-Chlorotoluene	U	ND		0.250	1.00	ug/L	1				
4-Isopropyltoluene	U	ND		0.250	1.00	ug/L	1				
4-Methyl-2-pentanone	U	ND		1.25	5.00	ug/L	1				
Acetone	U	ND		1.25	5.00	ug/L	1				
Acetonitrile	U	ND		6.25	25.0	ug/L	1				
Acrolein	U	ND		3.00	5.00	ug/L	1				
Acrylonitrile	U	ND		1.00	5.00	ug/L	1				
Allyl chloride	U	ND		3.70	5.00	ug/L	1				
Benzene	U	ND		0.300	1.00	ug/L	1				
Bromobenzene	U	ND		0.250	1.00	ug/L	1				
Bromochloromethane	U	ND		0.300	1.00	ug/L	1				
Bromodichloromethane	U	ND		0.250	1.00	ug/L	1				
Bromoform	U	ND		0.250	1.00	ug/L	1				
Bromomethane	U	ND		0.500	1.00	ug/L	1				
Carbon disulfide	U	ND		1.25	5.00	ug/L	1				
Carbon tetrachloride	U	ND		0.250	1.00	ug/L	1				
Chlorobenzene	U	ND		0.250	1.00	ug/L	1				
Chloroethane	U	ND		0.500	1.00	ug/L	1				
Chloroform	U	ND		0.250	1.00	ug/L	1				
Chloromethane	U	ND		0.500	1.00	ug/L	1				
Dibromochloromethane	U	ND		0.250	1.00	ug/L	1				
Dibromomethane	U	ND		0.300	1.00	ug/L	1				
Dichlorodifluoromethane	U	ND		0.500	1.00	ug/L	1				
Ethyl methacrylate	U	ND		1.00	5.00	ug/L	1				

Buckman #2

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Contact: Ms. Joylene Valdez
Project: ENV-WQH Groundwater

Report Date: August 22, 2006

Client Sample ID: GU060700G2MB01
Sample ID: 167110002

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics Federal												
GEL 8260B Method List Liquid F												
Ethylbenzene	U	ND		0.250	1.00	ug/L	1					
Hexachlorobutadiene	U	ND		0.250	1.00	ug/L	1					
Iodomethane	U	ND		1.25	5.00	ug/L	1					
Isobutyl alcohol	U	ND		12.5	50.0	ug/L	1					
Isopropylbenzene	U	ND		0.250	1.00	ug/L	1					
Methacrylonitrile	U	ND		1.00	5.00	ug/L	1					
Methyl methacrylate	U	ND		1.00	5.00	ug/L	1					
Methylene chloride	U	ND		2.00	5.00	ug/L	1					
Naphthalene	U	ND		0.250	1.00	ug/L	1					
Propionitrile	U	ND		1.50	5.00	ug/L	1					
Styrene	U	ND		0.250	1.00	ug/L	1					
Tetrachloroethylene	U	ND		0.250	1.00	ug/L	1					
Toluene	U	ND		0.250	1.00	ug/L	1					
Trichloroethylene	U	ND		0.250	1.00	ug/L	1					
Trichlorofluoromethane	U	ND		0.310	1.00	ug/L	1					
Trichlorotrifluoroethane	U	ND		1.00	5.00	ug/L	1					
Vinyl acetate	U	ND		1.50	5.00	ug/L	1					
Vinyl chloride	U	ND		0.500	1.00	ug/L	1					
cis-1,2-Dichloroethylene	U	ND		0.300	1.00	ug/L	1					
cis-1,3-Dichloropropylene	U	ND		0.250	1.00	ug/L	1					
m,p-Xylenes	U	ND		0.250	2.00	ug/L	1					
n-Butylbenzene	U	ND		0.250	1.00	ug/L	1					
n-Propylbenzene	U	ND		0.250	1.00	ug/L	1					
o-Xylene	U	ND		0.250	1.00	ug/L	1					
sec-Butylbenzene	U	ND		0.250	1.00	ug/L	1					
tert-Butylbenzene	U	ND		0.250	1.00	ug/L	1					
trans-1,2-Dichloroethylene	U	ND		0.300	1.00	ug/L	1					
trans-1,3-Dichloropropylene	U	ND		0.250	1.00	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 245.1/245.2 Prep	EPA 245 Mercury	RDD1	07/26/06	1130	548944
EPA 335.3	EPA 335.3 Total Cyanide	EXF1	07/18/06	1610	548885
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	AXH3	07/18/06	1130	548489
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	AXH3	07/17/06	1136	548556
EPA 365.4 Prep	EPA 365.4 Phosphorus, Total in liquid-Fe	AXH3	07/17/06	1139	548567
SW846 3005A	ICP-MS 3005 PREP	LXE1	08/01/06	1200	548312
SW846 3005A	ICP-TRACE SW846 3005A	FGA	08/01/06	1230	548272
SW846 6850 Modified	EPA 6850 Perchlorate Extraction in Liquid	CXM1	07/17/06	1106	548325

Buckman #2

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Certificate of Analysis

Company : Los Alamos National Laboratories
Address : PO Box 1663
TA-3, Bldg. 1237, Drop Pt. 03U
Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **ENV-WQH Groundwater**

Report Date: August 22, 2006

Client Sample ID: GU060700G2MB01
Sample ID: 167110005
Matrix: Ground Water
Collect Date: 12-JUL-06 10:10
Receive Date: 14-JUL-06
Collector: Client

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-volatile Mass spec Organics Federal											
8270C/3510C App.9 BNA Liquid F											
1,2,4,5-Tetrachlorobenzene	U	ND		2.15	10.8	ug/L	1	JLD1 07/18/06	1630	548736	1
1,2,4-Trichlorobenzene	U	ND		2.15	10.8	ug/L	1				
1,2-Dichlorobenzene	U	ND		2.15	10.8	ug/L	1				
Azobenzene	U	ND		2.15	10.8	ug/L	1				
1,3-Dichlorobenzene	U	ND		2.15	10.8	ug/L	1				
1,4-Dichlorobenzene	U	ND		2.15	10.8	ug/L	1				
1,4-Dioxane	U	ND		1.08	10.8	ug/L	1				
1-Methylnaphthalene	U	ND		0.323	1.08	ug/L	1				
2,3,4,6-Tetrachlorophenol	U	ND		2.15	10.8	ug/L	1				
2,4,5-Trichlorophenol	U	ND		1.08	10.8	ug/L	1				
2,4,6-Trichlorophenol	U	ND		2.15	10.8	ug/L	1				
2,4-Dichlorophenol	U	ND		2.15	10.8	ug/L	1				
2,4-Dimethylphenol	U	ND		2.15	10.8	ug/L	1				
2,4-Dinitrophenol	U	ND		10.8	21.5	ug/L	1				
2,4-Dinitrotoluene	U	ND		2.15	10.8	ug/L	1				
2,6-Dinitrotoluene	U	ND		2.15	10.8	ug/L	1				
2-Chloronaphthalene	U	ND		0.376	1.08	ug/L	1				
2-Chlorophenol	U	ND		2.15	10.8	ug/L	1				
2-Methyl-4,6-dinitrophenol	U	ND		3.23	10.8	ug/L	1				
2-Methylnaphthalene	U	ND		0.323	1.08	ug/L	1				
2-Nitrophenol	U	ND		2.15	10.8	ug/L	1				
3,3'-Dichlorobenzidine	U	ND		1.08	10.8	ug/L	1				
4-Bromophenylphenylether	U	ND		2.15	10.8	ug/L	1				
Parachlorometa cresol	U	ND		2.15	10.8	ug/L	1				
4-Chloroaniline	U	ND		2.15	10.8	ug/L	1				
4-Chlorophenylphenylether	U	ND		2.15	10.8	ug/L	1				
4-Nitrophenol	U	ND		2.15	10.8	ug/L	1				
Acenaphthene	U	ND		0.333	1.08	ug/L	1				
Acenaphthylene	U	ND		0.215	1.08	ug/L	1				
Aniline	U	ND		2.69	10.8	ug/L	1				
Anthracene	U	ND		0.215	1.08	ug/L	1				
Atrazine	U	ND		2.15	10.8	ug/L	1				
Benzidine	U	ND		2.15	53.8	ug/L	1				
Benzo(a)anthracene	U	ND		0.215	1.08	ug/L	1				
Benzo(a)pyrene	U	ND		0.215	1.08	ug/L	1				
Benzo(b)fluoranthene	U	ND		0.215	1.08	ug/L	1				
Benzo(ghi)perylene	U	ND		0.215	1.08	ug/L	1				
Benzo(k)fluoranthene	U	ND		0.215	1.08	ug/L	1				

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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **ENV-WQH Groundwater**

Report Date: August 22, 2006

Client Sample ID: GU060700G2MB01
Sample ID: 167110005
Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-volatile Mass spec Organics Federal												
8270C/3510C App.9 BNA Liquid F												
Benzoic acid	U	ND		6.45	21.5	ug/L	1					
Benzyl alcohol	U	ND		2.15	10.8	ug/L	1					
Butylbenzylphthalate	U	ND		2.15	10.8	ug/L	1					
Chrysene	U	ND		0.215	1.08	ug/L	1					
Di-n-butylphthalate	U	ND		2.15	10.8	ug/L	1					
Di-n-octylphthalate	U	ND		3.23	10.8	ug/L	1					
Dibenzo(a,h)anthracene	U	ND		0.215	1.08	ug/L	1					
Dibenzofuran	U	ND		2.15	10.8	ug/L	1					
Diethylphthalate	U	ND		2.15	10.8	ug/L	1					
Dimethylphthalate	U	ND		2.15	10.8	ug/L	1					
Dinoseb	U	ND		2.15	10.8	ug/L	1					
Diphenylamine	U	ND		3.23	10.8	ug/L	1					
Fluoranthene	U	ND		0.215	1.08	ug/L	1					
Fluorene	U	ND		0.215	1.08	ug/L	1					
Hexachlorobenzene	U	ND		2.15	10.8	ug/L	1					
Hexachlorobutadiene	U	ND		2.15	10.8	ug/L	1					
Hexachlorocyclopentadiene	U	ND		2.15	10.8	ug/L	1					
Hexachloroethane	U	ND		2.15	10.8	ug/L	1					
Indeno(1,2,3-cd)pyrene	U	ND		0.215	1.08	ug/L	1					
Isophorone	U	ND		2.15	10.8	ug/L	1					
N-Methyl-N-nitrosomethylamine	U	ND		2.15	10.8	ug/L	1					
N-Nitrosodi-n-butylamine	U	ND		2.15	10.8	ug/L	1					
N-Nitrosodiethylamine	U	ND		2.15	10.8	ug/L	1					
N-Nitrosodi--n-propylamine	U	ND		2.15	10.8	ug/L	1					
N-Nitrosopyrrolidine	U	ND		2.15	10.8	ug/L	1					
Naphthalene	U	ND		0.323	1.08	ug/L	1					
Nitrobenzene	U	ND		3.23	10.8	ug/L	1					
Pentachlorobenzene	U	ND		2.15	10.8	ug/L	1					
Pentachlorophenol	U	ND		2.15	10.8	ug/L	1					
Phenanthrene	U	ND		0.215	1.08	ug/L	1					
Phenol	U	ND		1.08	10.8	ug/L	1					
Pyrene	U	ND		0.323	1.08	ug/L	1					
bis(2-Chloroethoxy)methane	U	ND		3.23	10.8	ug/L	1					
bis(2-Chloroethyl) ether	U	ND		2.15	10.8	ug/L	1					
bis(2-Chloroisopropyl)ether	U	ND		2.15	10.8	ug/L	1					
bis(2-Ethylhexyl)phthalate	U	ND		2.15	10.8	ug/L	1					
m,p-Cresols	U	ND		3.23	10.8	ug/L	1					
3-Nitroaniline	U	ND		2.15	10.8	ug/L	1					
o-Cresol	U	ND		2.15	10.8	ug/L	1					
2-Nitroaniline	U	ND		2.15	10.8	ug/L	1					
4-Nitroaniline	U	ND		3.23	10.8	ug/L	1					

Buckman #2

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Certificate of Analysis

Company : Los Alamos National Laboratories
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TA-3, Bldg. 1237, Drop Pt. 03U
Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **ENV-WQH Groundwater**

Report Date: August 22, 2006

Client Sample ID: GU060700G2MB01
Sample ID: 167110008
Matrix: Ground Water
Collect Date: 12-JUL-06 10:10
Receive Date: 14-JUL-06
Collector: Client

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-Pesticide Federal												
8081A Pesticides/4503												
4,4'-DDD	U	ND		0.00521	0.0417	ug/L	1	SJ	08/01/06	1317	548747	1
4,4'-DDE	U	ND		0.00521	0.0417	ug/L	1					
4,4'-DDT	U	ND		0.0104	0.0417	ug/L	1					
Aldrin	U	ND		0.00521	0.0208	ug/L	1					
Dieldrin	U	ND		0.00521	0.0417	ug/L	1					
Endosulfan I	U	ND		0.00521	0.0208	ug/L	1					
Endosulfan II	U	ND		0.00521	0.0417	ug/L	1					
Endosulfan sulfate	U	ND		0.00521	0.0417	ug/L	1					
Endrin	U	ND		0.00521	0.0417	ug/L	1					
Endrin aldehyde	U	ND		0.00521	0.0417	ug/L	1					
Endrin ketone	U	ND		0.0131	0.0417	ug/L	1					
Heptachlor	U	ND		0.00682	0.0208	ug/L	1					
Heptachlor epoxide	U	ND		0.00521	0.0208	ug/L	1					
Methoxychlor	U	ND		0.0521	0.208	ug/L	1					
Toxaphene	U	ND		0.156	0.521	ug/L	1					
alpha-BHC	U	ND		0.00521	0.0208	ug/L	1					
alpha-Chlordane	U	ND		0.00521	0.0208	ug/L	1					
beta-BHC	U	ND		0.0088	0.0208	ug/L	1					
delta-BHC	U	ND		0.00521	0.0208	ug/L	1					
gamma-BHC (Lindane)	U	ND		0.00521	0.0208	ug/L	1					
gamma-Chlordane	U	ND		0.00521	0.0208	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	3510C PEST Prep H2O Federal	JXA2	07/18/06	1232	548746

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8081A	
2	SW846 8081A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	8081A Pesticides/4503	0.646	1.04	62	(35%-120%)
Decachlorobiphenyl	8081A Pesticides/4503	0.756	1.04	73	(36%-120%)

Buckman #2

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Certificate of Analysis

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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **ENV-WQH Groundwater**

Report Date: August 22, 2006

Client Sample ID: GU060700G2MB01
Sample ID: 167110011
Matrix: Ground Water
Collect Date: 12-JUL-06 10:10
Receive Date: 14-JUL-06
Collector: Client

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatiles-PCB Federal											
GW: PCB/WG,WP: 8082 PCB w/MS/4504											
Aroclor-1016	U	ND		0.0343	0.103	ug/L	1	KXY1 07/27/06	1916	548688	1
Aroclor-1221	U	ND		0.0343	0.103	ug/L	1				
Aroclor-1232	U	ND		0.0343	0.103	ug/L	1				
Aroclor-1242	BP	0.300		0.0343	0.103	ug/L	1				
Aroclor-1248	U	ND		0.0343	0.103	ug/L	1				
Aroclor-1254	U	ND		0.0343	0.103	ug/L	1				
Aroclor-1260	U	ND		0.0343	0.103	ug/L	1				
Aroclor-1262	U	ND		0.0343	0.103	ug/L	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	3510C PCB Prep H2O Federal	PXB2	07/18/06	1501	548687

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8082	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	GW: PCB/WG,WP: 8082 PCB w/MS/4504	0.154	0.206	75	(35%-120%)
Decachlorobiphenyl	GW: PCB/WG,WP: 8082 PCB w/MS/4504	0.110	0.206	53	(36%-120%)

Notes:
The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- H Analytical holding time was exceeded
- J Value is estimated
- N Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC).

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1

Buckman #2

High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: GU060700G2MB01

Lab Code: GEL

GEL Job No (SDG) 167110

Matrix: GROUND WATER

GEL Sample ID: 167110002

Sample Amount 770

Moisture:

Amount Units mL

Date Received: 14-JUL-06

Extraction Type Sol Exchange

Extraction Batch ID: 548571

Concentrated Extract Volume (mL) 5

Date Extracted: 18-JUL-06

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0829097a

Date Analyzed: 31-AUG-06 18:48

Units: ug/L

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	0.325	HU
121-14-2	2,4-Dinitrotoluene	0.325	HU
121-82-4	RDX	0.325	HU
19406-51-0	4-Amino-2,6-dinitrotoluene	0.325	HU
2691-41-0	HMX	0.325	HU
35572-78-2	2-Amino-4,6-dinitrotoluene	0.325	HU
479-45-8	Tetryl	0.649	HU
606-20-2	2,6-Dinitrotoluene	0.325	HU
78-11-5	PETN	1.3	HU
88-72-2	o-Nitrotoluene	0.325	HU
98-95-3	Nitrobenzene	0.325	HU
99-08-1	m-Nitrotoluene	0.325	HU
99-35-4	1,3,5-Trinitrobenzene	0.325	HU
99-65-0	m-Dinitrobenzene	0.325	HU
99-99-0	p-Nitrotoluene	0.649	HU

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amoun}} \times \text{Dilution Factor}$$

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BuckMAN #2

1

High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: GU060700G2MB01

Lab Code: GEL

GEL Job No (SDG) 167110

Matrix: GROUND WATER

GEL Sample ID: 167110002

Sample Amount 770

Moisture:

Amount Units mL

Date Received: 14-JUL-06

Extraction Type Sol Exchange

Extraction Batch ID: 548571

Concentrated Extract Volume (mL) 5

Date Extracted: 18-JUL-06

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS0721088.wiff

Date Analyzed: 24-JUL-06 17:13

Units: ug/L

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	1.3	U
59229-75-3	2,6-Diamino-4-nitrotoluene	1.3	U
618-87-1	3,5-Dinitroaniline	1.3	U
6629-29-4	2,4-Diamino-6-nitrotoluene	1.3	U
78-30-8	tris(o-cresyl) phosphate	1.3	U

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amoun}} \times \text{Dilution Factor}$$

Buckman #8

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Certificate of Analysis

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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **ENV-WQH Groundwater**

Report Date: August 22, 2006

Client Sample ID: GU060700G8MB01
Sample ID: 167110003
Matrix: Ground Water
Collect Date: 12-JUL-06 09:10
Receive Date: 14-JUL-06
Collector: Client

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Conductivity Analysis Federal												
EPA120.1 Specific Conductivity												
Conductivity		529		1.00	1.00	umhos/cm	1	LXW1	08/07/06	1416	555935	1
Electrode Analysis Federal												
EPA 150.1 pH Federal												
pH at Temp 11.6C	H	7.63		0.010	0.100	SU	1	LXW1	07/17/06	1845	548279	2
Flow Injection Analysis Federal												
EPA 335.3 Cyanide, Total												
Cyanide, Total	U	ND		1.50	5.00	ug/L	1	KLP1	07/18/06	1708	548886	3
Hardness by Calculation												
SM18-2340B Total Hardness by Calculation												
Hardness as CaCO3		52.9		0.020	0.100	mg/L	1	JJ2	08/08/06	1023	556236	4
Ion Chromatography Federal												
EPA 300.0 Anions Liquid 28 day												
Bromide	U	ND		0.066	0.200	mg/L	1	RXM1	07/24/06	2024	551034	5
Chloride		2.36		0.066	0.200	mg/L	1					
Fluoride		0.432		0.033	0.100	mg/L	1					
Sulfate		11.5		0.100	0.400	mg/L	1					
EPA 314.0 Perchlorate by IC												
Perchlorate	U	ND		4.00	12.0	ug/L	1	MAR1	07/18/06	2241	548824	6
LC-MS/MS Perchlorate Federal												
EPA 6850 Modified Perchlorate by LC-MS/MS												
Perchlorate		0.275		0.050	0.200	ug/L	1	MAP	07/19/06	1345	548326	7
Perchlorate Isotope Ratio		0.00				ug/L	1					
Perchlorate-101		0.293		0.050	0.200	ug/L	1					
Mercury Analysis-CVAA												
EPA 245 Mercury cold vapor												
Mercury	U	ND		0.060	0.200	ug/L	1	ETL	07/27/06	1147	548945	8
Metals Analysis-ICP												
3005/6010 Aluminum Liquid Federal												
Aluminum	U	ND		68.0	200	ug/L	1	HSC	08/02/06	1552	548273	9
Arsenic	U	ND		6.00	15.0	ug/L	1					
Barium		52.8		1.00	5.00	ug/L	1					
Beryllium	U	ND		1.00	5.00	ug/L	1					
Boron		86.9		10.0	50.0	ug/L	1					
Calcium		16500		36.0	100	ug/L	1					
Cobalt	U	ND		1.00	5.00	ug/L	1					

Buckman #8

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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **ENV-WQH Groundwater**

Report Date: August 22, 2006

Client Sample ID: GU060700G8MB01
Sample ID: 167110003

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP												
3005/6010 Aluminum Liquid Federal												
Copper	U	ND		3.00	10.0	ug/L	1					
Iron	U	ND		18.0	100	ug/L	1					
Magnesium		2600		85.0	300	ug/L	1					
Manganese	U	ND		2.00	10.0	ug/L	1					
Molybdenum	U	ND		2.00	10.0	ug/L	1					
Potassium		2800		50.0	150	ug/L	1					
Silica		38.7		0.032	0.213	mg/L	1					
Strontium		427		1.00	5.00	ug/L	1					
Tin	U	ND		2.50	10.0	ug/L	1					
Vanadium		27.0		1.00	5.00	ug/L	1					
Zinc	J	2.39		2.00	10.0	ug/L	1					
Sodium		103000		225	750	ug/L	5	HSC	08/04/06	1322	548273	10
Metals Analysis-ICP-MS												
3005/6020 Cadmium Federal												
Cadmium	U	ND		0.100	1.00	ug/L	1	PRB	08/06/06	2041	548313	11
Lead	U	ND		0.500	2.00	ug/L	1					
Selenium	U	ND		2.50	5.00	ug/L	1					
Silver	U	ND		0.200	1.00	ug/L	1					
Thallium	U	ND		0.400	1.00	ug/L	1					
Uranium		17.0		0.050	0.200	ug/L	1					
Chromium		8.86		1.00	3.00	ug/L	1	PRB	08/09/06	1431	548313	12
Nickel	J	0.607		0.500	2.00	ug/L	1					
Antimony	U	ND		0.500	2.00	ug/L	1	PRB	08/07/06	1130	548313	13
Nutrient Analysis Federal												
EPA 350.1 Nitrogen, Ammonia L												
Nitrogen, Ammonia	J	0.018		0.010	0.050	mg/L	1	KLP1	07/19/06	1645	548495	14
EPA 353.1 Nitrogen, (NO3/NO2)												
Nitrogen, Nitrate/Nitrite		0.547		0.014	0.050	mg/L	1	GXM 2	07/24/06	1617	550416	15
EPA 365.4 Phosphorus, Total in												
Phosphorus, Total as P	U	ND		0.010	0.050	mg/L	1	KLP1	07/18/06	1613	548573	16
Nitrogen, Total Kjeldahl (TKN)												
Nitrogen, Total Kjeldahl	U	ND		0.010	0.100	mg/L	1	KLP1	07/19/06	1026	548566	17
Rad Alpha Spec Analysis												
Alphaspec Am241 Liquid												
Americium-241	U	ND	+/-0.00339	0.0241	0.050	pCi/L		JXG1	07/27/06	2108	548788	18
Alphaspec Pu, Liquid												
Plutonium-238	U	ND	+/-0.00346	0.0192	0.050	pCi/L		JXG1	07/31/06	1522	548789	19
Plutonium-239/240	U	ND	+/-0.00199	0.0223	0.050	pCi/L						

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Certificate of Analysis

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TA-3, Bldg. 1237, Drop Pt. 03U
Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: ENV-WQH Groundwater

Report Date: August 22, 2006

Client Sample ID: GU060700G8MB01
Sample ID: 167110003

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis												
Alphaspec U, Liquid												
Uranium-234		9.35	+/-0.271	0.163	0.100	pCi/L		JXG1	08/04/06	1453	553275	20
Uranium-235/236		0.338	+/-0.0587	0.137	0.100	pCi/L						
Uranium-238		6.04	+/-0.218	0.173	0.100	pCi/L						
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Liquid												
Cesium-137	U	ND	+/-2.28	4.52	8.00	pCi/L		JPH1	08/11/06	1446	548585	21
Cobalt-60	U	ND	+/-2.21	4.16	8.00	pCi/L						
Gross Gamma	U	ND	+/-240	806	120	pCi/L						
Neptunium-237	U	ND	+/-17.8	32.7	10.0	pCi/L						
Potassium-40	U	ND	+/-42.2	51.5	10.0	pCi/L						
Sodium-22	U	ND	+/-1.75	2.73	10.0	pCi/L						
Rad Gas Flow Proportional Counting												
GFPC, Gross A/B, liquid												
Alpha		12.9	+/-1.35	1.68	3.00	pCi/L		JXS4	08/10/06	1521	549715	22
Beta		6.73	+/-0.737	2.44	3.00	pCi/L						
GFPC, Sr90, liquid												
Strontium-90	U	ND	+/-0.0699	0.309	0.500	pCi/L		BXF1	08/04/06	1242	550834	23
Rad Liquid Scintillation Analysis												
LSC, Tritium Dist, Liquid												
Tritium	U	ND	+/-58.1	196	200	pCi/L		DFA1	08/07/06	2302	549861	24
Solids Analysis Federal												
EPA 160.1 Solids, Dissolved-F												
Total Dissolved Solids		328		2.38	10.0	mg/L		GXA2	07/18/06	1438	549027	25
EPA 160.2 SSC												
Total Suspended Solids	U	ND		1.27	5.56	mg/L		GXA2	07/18/06	1357	549024	26
Titration Analysis Federal												
EPA 310.1 Total Alkalinity Federal												
Alkalinity, Total as CaCO3		246		0.725	1.00	mg/L		RG2	07/20/06	1055	549772	27
Carbonate alkalinity (CaCO3)	J	0.897		0.725	1.00	mg/L						
Volatile Organics Federal												
GEL 8260B Method List Liquid F												
1,1,1,2-Tetrachloroethane	U	ND		0.250	1.00	ug/L	1	YS1	07/22/06	1243	549966	28
1,1,1-Trichloroethane	U	ND		0.300	1.00	ug/L	1					
1,1,2,2-Tetrachloroethane	U	ND		0.250	1.00	ug/L	1					
1,1,2-Trichloroethane	U	ND		0.250	1.00	ug/L	1					
1,1-Dichloroethane	U	ND		0.300	1.00	ug/L	1					
1,1-Dichloroethylene	U	ND		0.300	1.00	ug/L	1					
1,1-Dichloropropene	U	ND		0.250	1.00	ug/L	1					
1,2,3-Trichlorobenzene	U	ND		0.300	1.00	ug/L	1					

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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **ENV-WQH Groundwater**

Report Date: August 22, 2006

Client Sample ID: GU060700G8MB01
Sample ID: 167110003

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal											
GEL 8260B Method List Liquid F											
1,2,3-Trichloropropane	U	ND		0.300	1.00	ug/L	1				
1,2,4-Trichlorobenzene	U	ND		0.300	1.00	ug/L	1				
1,2,4-Trimethylbenzene	U	ND		0.250	1.00	ug/L	1				
1,2-Dibromo-3-chloropropane	U	ND		0.500	1.00	ug/L	1				
1,2-Dibromoethane	U	ND		0.250	1.00	ug/L	1				
1,2-Dichlorobenzene	U	ND		0.250	1.00	ug/L	1				
1,2-Dichloroethane	U	ND		0.250	1.00	ug/L	1				
1,2-Dichloropropane	U	ND		0.250	1.00	ug/L	1				
1,3,5-Trimethylbenzene	U	ND		0.250	1.00	ug/L	1				
1,3-Dichlorobenzene	U	ND		0.250	1.00	ug/L	1				
1,3-Dichloropropane	U	ND		0.250	1.00	ug/L	1				
1,4-Dichlorobenzene	U	ND		0.250	1.00	ug/L	1				
1,4-Dioxane	U	ND		20.0	50.0	ug/L	1				
2,2-Dichloropropane	U	ND		0.300	1.00	ug/L	1				
2-Butanone	U	ND		1.25	5.00	ug/L	1				
2-Chloro-1,3-butadiene	U	ND		0.300	1.00	ug/L	1				
2-Chlorotoluene	U	ND		0.250	1.00	ug/L	1				
2-Hexanone	U	ND		1.25	5.00	ug/L	1				
4-Chlorotoluene	U	ND		0.250	1.00	ug/L	1				
4-Isopropyltoluene	U	ND		0.250	1.00	ug/L	1				
4-Methyl-2-pentanone	U	ND		1.25	5.00	ug/L	1				
Acetone	U	ND		1.25	5.00	ug/L	1				
Acetonitrile	U	ND		6.25	25.0	ug/L	1				
Acrolein	U	ND		3.00	5.00	ug/L	1				
Acrylonitrile	U	ND		1.00	5.00	ug/L	1				
Allyl chloride	U	ND		3.70	5.00	ug/L	1				
Benzene	U	ND		0.300	1.00	ug/L	1				
Bromobenzene	U	ND		0.250	1.00	ug/L	1				
Bromochloromethane	U	ND		0.300	1.00	ug/L	1				
Bromodichloromethane	U	ND		0.250	1.00	ug/L	1				
Bromoform	U	ND		0.250	1.00	ug/L	1				
Bromomethane	U	ND		0.500	1.00	ug/L	1				
Carbon disulfide	U	ND		1.25	5.00	ug/L	1				
Carbon tetrachloride	U	ND		0.250	1.00	ug/L	1				
Chlorobenzene	U	ND		0.250	1.00	ug/L	1				
Chloroethane	U	ND		0.500	1.00	ug/L	1				
Chloroform	U	ND		0.250	1.00	ug/L	1				
Chloromethane	U	ND		0.500	1.00	ug/L	1				
Dibromochloromethane	U	ND		0.250	1.00	ug/L	1				
Dibromomethane	U	ND		0.300	1.00	ug/L	1				
Dichlorodifluoromethane	U	ND		0.500	1.00	ug/L	1				
Ethyl methacrylate	U	ND		1.00	5.00	ug/L	1				

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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **ENV-WQH Groundwater**

Report Date: August 22, 2006

Client Sample ID: GU060700G8MB01
Sample ID: 167110003

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal											
GEL 8260B Method List Liquid F											
Ethylbenzene	U	ND		0.250	1.00	ug/L	1				
Hexachlorobutadiene	U	ND		0.250	1.00	ug/L	1				
Iodomethane	U	ND		1.25	5.00	ug/L	1				
Isobutyl alcohol	U	ND		12.5	50.0	ug/L	1				
Isopropylbenzene	U	ND		0.250	1.00	ug/L	1				
Methacrylonitrile	U	ND		1.00	5.00	ug/L	1				
Methyl methacrylate	U	ND		1.00	5.00	ug/L	1				
Methylene chloride	U	ND		2.00	5.00	ug/L	1				
Naphthalene	U	ND		0.250	1.00	ug/L	1				
Propionitrile	U	ND		1.50	5.00	ug/L	1				
Styrene	U	ND		0.250	1.00	ug/L	1				
Tetrachloroethylene	U	ND		0.250	1.00	ug/L	1				
Toluene	U	ND		0.250	1.00	ug/L	1				
Trichloroethylene	U	ND		0.250	1.00	ug/L	1				
Trichlorofluoromethane	U	ND		0.310	1.00	ug/L	1				
Trichlorotrifluoroethane	U	ND		1.00	5.00	ug/L	1				
Vinyl acetate	U	ND		1.50	5.00	ug/L	1				
Vinyl chloride	U	ND		0.500	1.00	ug/L	1				
cis-1,2-Dichloroethylene	U	ND		0.300	1.00	ug/L	1				
cis-1,3-Dichloropropylene	U	ND		0.250	1.00	ug/L	1				
m,p-Xylenes	U	ND		0.250	2.00	ug/L	1				
n-Butylbenzene	U	ND		0.250	1.00	ug/L	1				
n-Propylbenzene	U	ND		0.250	1.00	ug/L	1				
o-Xylene	U	ND		0.250	1.00	ug/L	1				
sec-Butylbenzene	U	ND		0.250	1.00	ug/L	1				
tert-Butylbenzene	U	ND		0.250	1.00	ug/L	1				
trans-1,2-Dichloroethylene	U	ND		0.300	1.00	ug/L	1				
trans-1,3-Dichloropropylene	U	ND		0.250	1.00	ug/L	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 245.1/245.2 Prep	EPA 245 Mercury	RDD1	07/26/06	1130	548944
EPA 335.3	EPA 335.3 Total Cyanide	EXF1	07/18/06	1610	548885
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	AXH3	07/18/06	1130	548489
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	AXH3	07/17/06	1136	548556
EPA 365.4 Prep	EPA 365.4 Phosphorus, Total in liquid-Fe	AXH3	07/17/06	1139	548567
SW846 3005A	ICP-MS 3005 PREP	LXE1	08/01/06	1200	548312
SW846 3005A	ICP-TRACE SW846 3005A	FGA	08/01/06	1230	548272
SW846 6850 Modified	EPA 6850 Perchlorate Extraction in Liquid	CXM1	07/17/06	1106	548325

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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: ENV-WQH Groundwater

Report Date: August 22, 2006

Client Sample ID: GU060700G8MB01
Sample ID: 167110006
Matrix: Ground Water
Collect Date: 12-JUL-06 09:10
Receive Date: 14-JUL-06
Collector: Client

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-volatile Mass spec Organics Federal											
8270C/3510C App.9 BNA Liquid F											
1,2,4,5-Tetrachlorobenzene	U	ND		2.08	10.4	ug/L	1	JLD1 07/18/06	1737	548736	1
1,2,4-Trichlorobenzene	U	ND		2.08	10.4	ug/L	1				
1,2-Dichlorobenzene	U	ND		2.08	10.4	ug/L	1				
Azobenzene	U	ND		2.08	10.4	ug/L	1				
1,3-Dichlorobenzene	U	ND		2.08	10.4	ug/L	1				
1,4-Dichlorobenzene	U	ND		2.08	10.4	ug/L	1				
1,4-Dioxane	U	ND		1.04	10.4	ug/L	1				
1-Methylnaphthalene	U	ND		0.313	1.04	ug/L	1				
2,3,4,6-Tetrachlorophenol	U	ND		2.08	10.4	ug/L	1				
2,4,5-Trichlorophenol	U	ND		1.04	10.4	ug/L	1				
2,4,6-Trichlorophenol	U	ND		2.08	10.4	ug/L	1				
2,4-Dichlorophenol	U	ND		2.08	10.4	ug/L	1				
2,4-Dimethylphenol	U	ND		2.08	10.4	ug/L	1				
2,4-Dinitrophenol	U	ND		10.4	20.8	ug/L	1				
2,4-Dinitrotoluene	U	ND		2.08	10.4	ug/L	1				
2,6-Dinitrotoluene	U	ND		2.08	10.4	ug/L	1				
2-Chloronaphthalene	U	ND		0.365	1.04	ug/L	1				
2-Chlorophenol	U	ND		2.08	10.4	ug/L	1				
2-Methyl-4,6-dinitrophenol	U	ND		3.13	10.4	ug/L	1				
2-Methylnaphthalene	U	ND		0.313	1.04	ug/L	1				
2-Nitrophenol	U	ND		2.08	10.4	ug/L	1				
3,3'-Dichlorobenzidine	U	ND		1.04	10.4	ug/L	1				
4-Bromophenylphenylether	U	ND		2.08	10.4	ug/L	1				
Parachlorometa cresol	U	ND		2.08	10.4	ug/L	1				
4-Chloroaniline	U	ND		2.08	10.4	ug/L	1				
4-Chlorophenylphenylether	U	ND		2.08	10.4	ug/L	1				
4-Nitrophenol	U	ND		2.08	10.4	ug/L	1				
Acenaphthene	U	ND		0.323	1.04	ug/L	1				
Acenaphthylene	U	ND		0.208	1.04	ug/L	1				
Aniline	U	ND		2.60	10.4	ug/L	1				
Anthracene	U	ND		0.208	1.04	ug/L	1				
Atrazine	U	ND		2.08	10.4	ug/L	1				
Benzidine	U	ND		2.08	52.1	ug/L	1				
Benzo(a)anthracene	U	ND		0.208	1.04	ug/L	1				
Benzo(a)pyrene	U	ND		0.208	1.04	ug/L	1				
Benzo(b)fluoranthene	U	ND		0.208	1.04	ug/L	1				
Benzo(ghi)perylene	U	ND		0.208	1.04	ug/L	1				
Benzo(k)fluoranthene	U	ND		0.208	1.04	ug/L	1				

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Contact: Ms. Joylene Valdez
Project: **ENV-WQH Groundwater**

Report Date: August 22, 2006

Client Sample ID: GU060700G8MB01 Proiect: ESHL00701
Sample ID: 167110006 Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-volatile Mass spec Organics Federal											
8270C/3510C App.9 BNA Liquid F											
Benzoic acid	U	ND		6.25	20.8	ug/L	1				
Benzyl alcohol	U	ND		2.08	10.4	ug/L	1				
Butylbenzylphthalate	U	ND		2.08	10.4	ug/L	1				
Chrysene	U	ND		0.208	1.04	ug/L	1				
Di-n-butylphthalate	U	ND		2.08	10.4	ug/L	1				
Di-n-octylphthalate	U	ND		3.13	10.4	ug/L	1				
Dibenzo(a,h)anthracene	U	ND		0.208	1.04	ug/L	1				
Dibenzofuran	U	ND		2.08	10.4	ug/L	1				
Diethylphthalate	U	ND		2.08	10.4	ug/L	1				
Dimethylphthalate	U	ND		2.08	10.4	ug/L	1				
Dinoseb	U	ND		2.08	10.4	ug/L	1				
Diphenylamine	U	ND		3.13	10.4	ug/L	1				
Fluoranthene	U	ND		0.208	1.04	ug/L	1				
Fluorene	U	ND		0.208	1.04	ug/L	1				
Hexachlorobenzene	U	ND		2.08	10.4	ug/L	1				
Hexachlorobutadiene	U	ND		2.08	10.4	ug/L	1				
Hexachlorocyclopentadiene	U	ND		2.08	10.4	ug/L	1				
Hexachloroethane	U	ND		2.08	10.4	ug/L	1				
Indeno(1,2,3-cd)pyrene	U	ND		0.208	1.04	ug/L	1				
Isophorone	U	ND		2.08	10.4	ug/L	1				
N-Methyl-N-nitrosomethylamine	U	ND		2.08	10.4	ug/L	1				
N-Nitrosodi-n-butylamine	U	ND		2.08	10.4	ug/L	1				
N-Nitrosodiethylamine	U	ND		2.08	10.4	ug/L	1				
N-Nitrosodi--n-propylamine	U	ND		2.08	10.4	ug/L	1				
N-Nitrosopyrrolidine	U	ND		2.08	10.4	ug/L	1				
Naphthalene	U	ND		0.313	1.04	ug/L	1				
Nitrobenzene	U	ND		3.13	10.4	ug/L	1				
Pentachlorobenzene	U	ND		2.08	10.4	ug/L	1				
Pentachlorophenol	U	ND		2.08	10.4	ug/L	1				
Phenanthrene	U	ND		0.208	1.04	ug/L	1				
Phenol	U	ND		1.04	10.4	ug/L	1				
Pyrene	U	ND		0.313	1.04	ug/L	1				
bis(2-Chloroethoxy)methane	U	ND		3.13	10.4	ug/L	1				
bis(2-Chloroethyl) ether	U	ND		2.08	10.4	ug/L	1				
bis(2-Chloroisopropyl)ether	U	ND		2.08	10.4	ug/L	1				
bis(2-Ethylhexyl)phthalate	U	ND		2.08	10.4	ug/L	1				
m,p-Cresols	U	ND		3.13	10.4	ug/L	1				
3-Nitroaniline	U	ND		2.08	10.4	ug/L	1				
o-Cresol	U	ND		2.08	10.4	ug/L	1				
2-Nitroaniline	U	ND		2.08	10.4	ug/L	1				
4-Nitroaniline	U	ND		3.13	10.4	ug/L	1				

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Contact: Ms. Joylene Valdez
Project: **ENV-WQH Groundwater**

Report Date: August 22, 2006

Client Sample ID: GU060700G8MB01
Sample ID: 167110009
Matrix: Ground Water
Collect Date: 12-JUL-06 09:10
Receive Date: 14-JUL-06
Collector: Client

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-Pesticide Federal												
8081A Pesticides/4503												
4,4'-DDD	U	ND		0.0051	0.0408	ug/L	1	SJ	08/01/06	1352	548747	1
4,4'-DDE	U	ND		0.0051	0.0408	ug/L	1					
4,4'-DDT	U	ND		0.0102	0.0408	ug/L	1					
Aldrin	U	ND		0.0051	0.0204	ug/L	1					
Dieldrin	U	ND		0.0051	0.0408	ug/L	1					
Endosulfan I	U	ND		0.0051	0.0204	ug/L	1					
Endosulfan II	U	ND		0.0051	0.0408	ug/L	1					
Endosulfan sulfate	U	ND		0.0051	0.0408	ug/L	1					
Endrin	U	ND		0.0051	0.0408	ug/L	1					
Endrin aldehyde	U	ND		0.0051	0.0408	ug/L	1					
Endrin ketone	U	ND		0.0128	0.0408	ug/L	1					
Heptachlor	U	ND		0.00668	0.0204	ug/L	1					
Heptachlor epoxide	U	ND		0.0051	0.0204	ug/L	1					
Methoxychlor	U	ND		0.051	0.204	ug/L	1					
Toxaphene	U	ND		0.153	0.510	ug/L	1					
alpha-BHC	U	ND		0.0051	0.0204	ug/L	1					
alpha-Chlordane	U	ND		0.0051	0.0204	ug/L	1					
beta-BHC	U	ND		0.00862	0.0204	ug/L	1					
delta-BHC	U	ND		0.0051	0.0204	ug/L	1					
gamma-BHC (Lindane)	U	ND		0.0051	0.0204	ug/L	1					
gamma-Chlordane	U	ND		0.0051	0.0204	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	3510C PEST Prep H2O Federal	JXA2	07/18/06	1232	548746

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8081A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	8081A Pesticides/4503	0.651	1.02	64	(35%-120%)
Decachlorobiphenyl	8081A Pesticides/4503	0.812	1.02	80	(36%-120%)

Buckman #8

GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Los Alamos National Laboratories
Address : PO Box 1663
TA-3, Bldg. 1237, Drop Pt. 03U
Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: ENV-WQH Groundwater

Report Date: August 22, 2006

Client Sample ID: GU060700G8MB01
Sample ID: 167110012
Matrix: Ground Water
Collect Date: 12-JUL-06 09:10
Receive Date: 14-JUL-06
Collector: Client

Project: ESHL00701
Client ID: ESHL001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatiles-PCB Federal											
GW: PCB/WG,WP: 8082 PCB w/MS/4504											
Aroclor-1016	U	ND		0.0343	0.103	ug/L	1	KXY1 07/27/06	1951	548688	1
Aroclor-1221	U	ND		0.0343	0.103	ug/L	1				
Aroclor-1232	U	ND		0.0343	0.103	ug/L	1				
Aroclor-1242	B	0.210		0.0343	0.103	ug/L	1				
Aroclor-1248	U	ND		0.0343	0.103	ug/L	1				
Aroclor-1254	U	ND		0.0343	0.103	ug/L	1				
Aroclor-1260	U	ND		0.0343	0.103	ug/L	1				
Aroclor-1262	U	ND		0.0343	0.103	ug/L	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	3510C PCB Prep H2O Federal	PXB2	07/18/06	1501	548687

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8082	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	GW: PCB/WG,WP: 8082 PCB w/MS/4504	0.143	0.206	69	(35%-120%)
Decachlorobiphenyl	GW: PCB/WG,WP: 8082 PCB w/MS/4504	0.0987	0.206	48	(36%-120%)

Notes:
The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- H Analytical holding time was exceeded
- J Value is estimated
- N Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC).

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1

High Explosives Analysis Data Sheet

Buckman #8

Lab Name: General Engineering Laboratories

Client Sample ID: GU060700G8MB01

Lab Code: GEL

GEL Job No (SDG) 167110

Matrix: GROUND WATER

GEL Sample ID: 167110003

Sample Amount 770

Moisture:

Amount Units mL

Date Received: 14-JUL-06

Extraction Type Sol Exchange

Extraction Batch ID: 548571

Concentrated Extract Volume (mL) 5

Date Extracted: 18-JUL-06

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0829100a

Date Analyzed: 31-AUG-06 20:31

Units: ug/L

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	0.325	HU
121-14-2	2,4-Dinitrotoluene	0.325	HU
121-82-4	RDX	0.325	HU
19406-51-0	4-Amino-2,6-dinitrotoluene	0.325	HU
2691-41-0	HMX	0.325	HU
35572-78-2	2-Amino-4,6-dinitrotoluene	0.325	HU
479-45-8	Tetryl	0.649	HU
606-20-2	2,6-Dinitrotoluene	0.325	HU
78-11-5	PETN	1.3	HU
88-72-2	o-Nitrotoluene	0.325	HU
98-95-3	Nitrobenzene	0.325	HU
99-08-1	m-Nitrotoluene	0.325	HU
99-35-4	1,3,5-Trinitrobenzene	0.325	HU
99-65-0	m-Dinitrobenzene	0.325	HU
99-99-0	p-Nitrotoluene	0.649	HU

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amoun}} \times \text{Dilution Factor}$$

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1

High Explosives Analysis Data Sheet

Buckman #8

Lab Name: General Engineering Laboratories

Client Sample ID: GU060700G8MB01

Lab Code: GEL

GEL Job No (SDG) 167110

Matrix: GROUND WATER

GEL Sample ID: 167110003

Sample Amount 770

Moisture:

Amount Units mL

Date Received: 14-JUL-06

Extraction Type Sol Exchange

Extraction Batch ID: 548571

Concentrated Extract Volume (mL) 5

Date Extracted: 18-JUL-06

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS0721091.wiff

Date Analyzed: 24-JUL-06 18:21

Units: ug/L

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	1.3	U
59229-75-3	2,6-Diamino-4-nitrotoluene	1.3	U
618-87-1	3,5-Dinitroaniline	1.3	U
6629-29-4	2,4-Diamino-6-nitrotoluene	1.3	U
78-30-8	tris(o-cresyl) phosphate	1.3	U

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amoun}} \times \text{Dilution Factor}$$

Buckman #1

Los Alamos National Laboratory

Client Sample ID: SF060700G1MB01

General Chemistry

Lot-Sample #...: E6G130260-001 Work Order #...: H86R8 Matrix.....: W
Date Sampled...: 07/12/06 09:45 Date Received..: 07/13/06 09:00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Hexavalent Chromium	ND	20.0	ug/L	SW846 7196A	07/13/06	6194436

Dilution Factor: 1 Analysis Time..: 15:56 Analyst ID.....: 000064
Instrument ID..: W17 MS Run #.....: 6194264 MDL.....: 10.0

Buckman #2

Los Alamos National Laboratory

Client Sample ID: SF060700G2MB01

General Chemistry

Lot-Sample #...: E6G130253-001 Work Order #...: H86Q0 Matrix.....: WG
Date Sampled...: 07/12/06 10:10 Date Received..: 07/13/06 09:00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Hexavalent Chromium	ND	20.0	ug/L	SW846 7196A	07/13/06	6194436

Dilution Factor: 1 Analysis Time..: 15:54 Analyst ID.....: 000064
Instrument ID..: W17 MS Run #.....: 6194264 MDL.....: 10.0

Buckman #8

Los Alamos National Laboratory

Client Sample ID: SF060700G8MB01

General Chemistry

Lot-Sample #...: E6G130251-001 Work Order #...: H86PL Matrix.....: WG
Date Sampled...: 07/12/06 09:10 Date Received..: 07/13/06 09:00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Hexavalent Chromium	ND	20.0	ug/L	SW846 7196A	07/13/06	6194436

Dilution Factor: 1 Analysis Time..: 15:52 Analyst ID.....: 000064
Instrument ID..: W17 MS Run #.....: 6194264 MDL.....: 10.0

UNIVERSITY OF MIAMI TRITIUM LABORATORY

Delivery Order Number: Report 06-080
Report Date: 04-AUGUST-2006

Case Narrative for JOB 2229
Samples arrived safely on 14 July 2006. Sample analysis began on 14 July. Analytical work and data package have been reviewed and are in compliance with the requirements of the SOW.

LANL Sample ID	Lab Sample ID	Date analyzed	Delivery Order Nr	Report Date	Parameter Name	Parameter Value	Uncertainty One Sigma	MDA	Unit of Measure	Data Qualifier	Enrichment Factor	Method of Analysis
(1) UU060500GMA101	7178	27-JUL-2006	06-080	04-AUG-2006	TRITIUM	24.8	0.8	0.09	TU	GOOD	32.3	Generic:LLEE
UU060700G8MB01	3188	27-JUL-2006	06-080	04-AUG-2006	TRITIUM	-0.03	0.09	0.09	TU	GOOD	32.3	Generic:LLEE
UU060700G8MB01	2187	27-JUL-2006	06-080	04-AUG-2006	TRITIUM	0.00	0.09	0.09	TU	REPLICATE	32.3	Generic:LLEE
(2) UU060700G1MB01	1180	27-JUL-2006	06-080	04-AUG-2006	TRITIUM	-0.01	0.09	0.09	TU	GOOD	32.3	Generic:LLEE
(3) UU060700G2MB01	1181	26-JUL-2006	06-080	04-AUG-2006	TRITIUM	0.02	0.09	0.09	TU	GOOD	32.3	Generic:LLEE
UU06050G12R101	2188	28-JUL-2006	06-080	04-AUG-2006	TRITIUM	32.8	1.1	0.09	TU	GOOD	32.3	Generic:LLEE
UU060500GM0601	4186	28-JUL-2006	06-080	04-AUG-2006	TRITIUM	23.8	0.8	0.09	TU	GOOD	32.3	Generic:LLEE
UU060500GM0601	3189	28-JUL-2006	06-080	04-AUG-2006	TRITIUM	23.4	0.8	0.09	TU	REPLICATE	32.3	Generic:LLEE
UU060500G11R01	6186	28-JUL-2006	06-080	04-AUG-2006	TRITIUM	3.50	0.12	0.09	TU	GOOD	32.3	Generic:LLEE
UU060500G11R01-FB	4188	31-JUL-2006	06-080	04-AUG-2006	TRITIUM	0.06	0.09	0.09	TU	GOOD	32.3	Generic:LLEE
UU060500G11R90	5187	28-JUL-2006	06-080	04-AUG-2006	TRITIUM	3.45	0.11	0.09	TU	GOOD	32.3	Generic:LLEE
UU060500GRCM01	9180	28-JUL-2006	06-080	04-AUG-2006	TRITIUM	25.1	0.8	0.09	TU	GOOD	32.3	Generic:LLEE

NOTE: 1 TU = 3.193 pCi/L

(1) BUCKMAN #8
(2) BUCKMAN #1
(3) BUCKMAN #2

QC Deliverables

Preparation Blank:

Parameter Name	Parameter Result	Uncertainty, one sigma	Instrument ID
BEND 42	0.13 TU	0.09 TU	5185

Replicate Data:

Parameter Name	Parameter Result	Replicate Result	RER
UU060700G8MB01	-0.03 TU	0.00 TU	0.17
UU060500GM0601	23.8 TU	23.4 TU	0.25

Laboratory Control Samples:

Parameter Name	True Concentration	Measured Concentration	Percent Recovery	Instrument ID
BETA 13.1	29,234	29,323	100.30	7177