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Date: January 28, 2010
Refer To: ENV-RCRA-10-025
LA-UR: 10-00253

Mr. William Olson, Chief
Ground Water Quality Bureau
New Mexico Environment Department
Harold Runnels Building, Room N2250
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502

Dear Mr. Olson:

SUBJECT: ANNUAL REPORT 2009, GROUND WATER DISCHARGE PERMIT (DP-857), TA-46 SANITARY WASTEWATER SYSTEMS PLANT

This report and enclosures are Los Alamos National Laboratory's 2009 Annual Ground Water Discharge Permit (DP-857) Report for the TA-46 Sanitary Wastewater Systems (SWWS) Plant. In addition to satisfying the annual reporting requirements, this report also contains the required quarterly monitoring data for the 4th quarter (October, November, and December) of 2009.

Please call me at (505) 667-7969 if you have questions regarding this report.

~~Sincerely~~,

Robert Beers
Water Quality & RCRA Group

BB/lm

Enclosures: a/s

Cy: Glenn Saums, NMED/SWQB, Santa Fe, New Mexico, w/enc.
James Bearzi, NMED/HWB, Santa Fe, New Mexico, w/enc.
Steve Yanicak, LASO-GOV, w/enc., M894
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Cy (continued):
Gene Turner, LASO-EO, w/enc., A316
Michael Mallory, PADOPS, w/o enc., A102
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GROUND WATER DISCHARGE PERMIT (DP-857) ANNUAL REPORT 2009

for the

TA-46 SANITARY WASTEWATER SYSTEMS (SWWS) PLANT

Los Alamos
National Laboratory

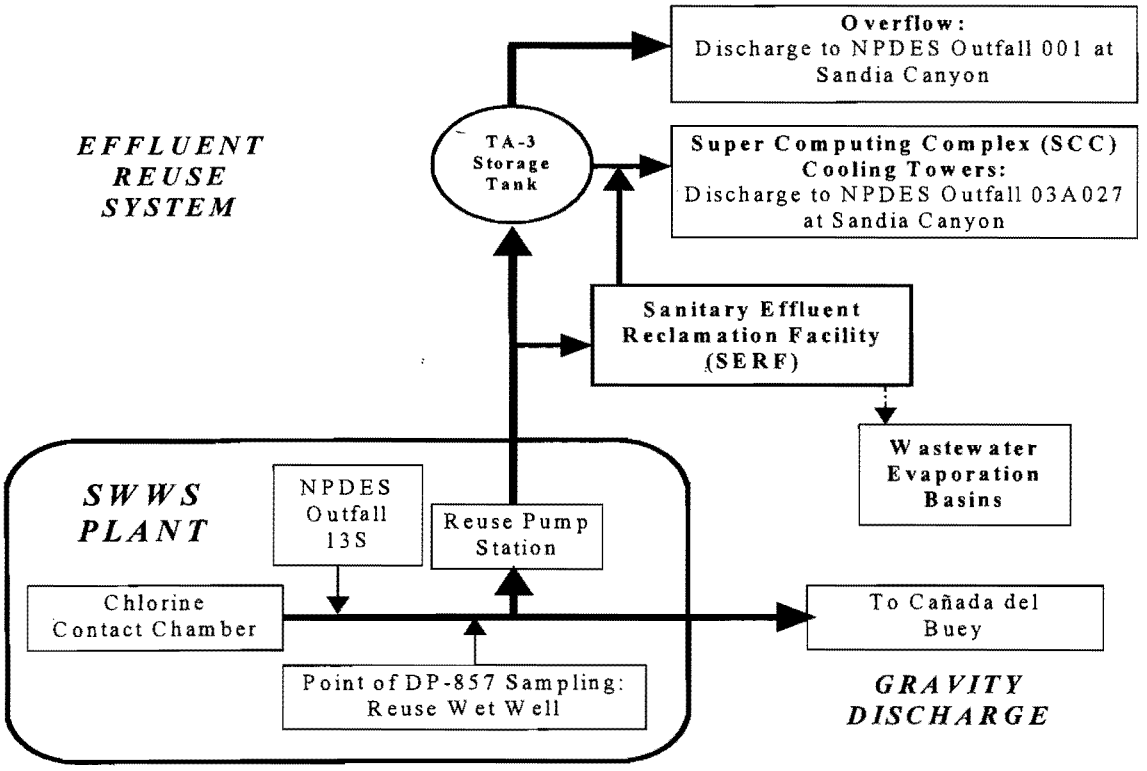
LA-UR-10-00253

January 28, 2010

INTRODUCTION

Sanitary wastewater generated at Los Alamos National Laboratory (Laboratory) is treated at the TA-46 Sanitary Wastewater Systems (SWWS) Plant. The SWWS Plant is an extended-aeration, activated sludge sanitary wastewater treatment plant with a design capacity of 0.6 million gallons per day. As shown in **Figure 1.0**, treated effluent from the SWWS Plant may be discharged through NPDES Outfall 13S by gravity to Cañada del Buey or pumped via a force main to a reuse system at Technical Area (TA)-3. Since the SWWS Plant became operational in 1992, all treated effluent has been pumped via the force main for discharge to Sandia Canyon; no effluent has ever been discharged to Cañada del Buey. In 2009, all of the treated effluent generated by the SWWS Plant (approximately 81.2 million gallons) was pumped to TA-3 and discharged to Sandia Canyon through NPDES Outfall 001. No treated effluent was used by the Super Computing Complex (SCC) cooling towers during 2009 because the Sanitary Effluent Reclamation Facility (SERF) was out-of-service for most of 2009.

Figure 1. Effluent Reuse System Schematic



DISCHARGE PERMIT (DP-857) RENEWAL

In accordance with New Mexico Water Quality Control Commission (NM WQCC) Regulation 3106.F NMAC, on August 27, 2002, the Laboratory submitted an application to the NMED for renewal of Ground Water Discharge Permit DP-857. The Laboratory's renewal application was submitted at least 120 days before the expiration date of January 7, 2003, as required by regulation. As of December 31, 2009, permit renewal was still pending.

SERF and SERF EVAPORATION BASINS

The SERF operated for a total of 6 hrs in 2009. Prior to restarting SERF, seven process tanks containing approximately 25,000 gal of water were discharged to the SERF evaporation basins. During operations in 2009, approximately 48,000 gal of product water and 2,000 gal of reject water were produced and discharged to the SERF evaporation basins. No additional anthropogenic water was discharged to the SERF basins in 2009

EFFLUENT IRRIGATION AT THE SWWS PLANT

During the months of April through October 2009, effluent from the SWWS Plant was re-used to irrigate approximately 1/3 acre of turf grass on the plant's grounds. The irrigated grass is within the confines of the SWWS Plant's perimeter security fence and access is restricted to Laboratory employees/contractors on official business and visitors being escorted by SWWS Plant personnel.

4TH QTR 2009 MONITORING: REUSE WATER, NPDES OUTFALLS 001 & 03A027, CDBO-6

Table 1.0 presents the analytical results from monitoring conducted at the SWWS Plant's reuse wet well, NPDES Outfalls 001 and 03A027, and monitoring well CDBO-6 during the 4th quarter of 2009. All sample results in Table 1.0 are less than New Mexico Water Quality Control Commission (NM WQCC) Regulation 3103 standards for ground water. Copies of the analytical reports are in **Enclosure 2.0**.

Table 2.0 presents the water level in Cañada del Buey alluvial observation well CDBO-6 for the 4th quarter of 2009.

Table 3.0 presents the volume of water discharged from the following locations during the 4th quarter of 2009:

- SWWS Plant effluent (reuse water) pumped to TA-3 via the force main,
- Effluent discharge through NPDES Outfall 001,
- Reuse water used by the SCC cooling towers, and
- Effluent discharged through NPDES Outfall 03A027.

Table 4.0 presents the results from monthly monitoring of the SERF evaporation basins' leak inspection standpipes. **Enclosure 1.0** presents photographs taken during October, November, and December, 2009, of the four leak inspection standpipes. No water was present in any of the basin's four leak inspection standpipes with the exception of minimal amounts of condensate water.

2009 Annual Water Quality Monitoring: SWWS Plant Reuse Wet Well

Tables 5.0 through **8.0** present the analytical results from annual monitoring of the SWWS Plant's reuse water (sampling point: SWWS Plant reuse wet well). Copies of the analytical reports are provided in **Enclosure 3.0**.

Table 5.0 presents the analytical results from annual monitoring of the SWWS Plant's reuse water for general inorganics and metals. All sample results were less than NM WQCC Regulation 3103 standards for ground water.

Table 6.0 presents the analytical results from annual monitoring of the SWWS Plant's reuse water for PCBs. All sample results were non detect.

Table 7.0 presents all detected volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) from the annual monitoring of the SWWS Plant's effluent. Five VOCs were detected at concentrations greater than the analytical laboratory's Method Detection Limit (MDL). No SVOCs were detected at concentrations greater than the analytical laboratory's MDL. The five VOC detections are discussed below.

- **Bromodichloromethane** was detected at a concentration of 33.9 μg/L. There is no NM WQCC Regulation 3103 standard for bromodichloromethane.
- **Bromoform** was detected at a concentration of 2.2 μg/L. There is no NM WQCC Regulation 3103 standard for bromoform.
- **Butanone[2-]**, also known as methyl ethyl ketone or MEK, was detected at a concentration of 3.3J μg/L. The "J" flag indicates that the reported value is estimated. There is no NM WQCC Regulation 3103 standard for butanone[2-].
- **Chlorodibromomethane** was detected at a concentration of 17.1 μg/L. There is no NM WQCC Regulation 3103 standard for chlorodibromomethane.
- **Chloroform** was detected at a concentration of 32.1 μg/L. The NM WQCC Regulation 3103 standard for chloroform in ground water is 100 μg/L.

Bromodichloromethane, bromoform, chlorodibromomethane, and chloroform are common disinfection by-products resulting from the chlorination of effluent with chlorine compounds.

Table 8.0 presents the analytical results from annual monitoring of the SWWS Plant's reuse water for radiological constituents. All sample results were non detect.

2009 Annual Water Quality Monitoring: Monitoring Well CDBO-6

Tables 9.0 through **12.0** present the analytical results from annual monitoring of the alluvial ground water monitoring well CDBO-6 in Sandia Canyon. Copies of the analytical reports are provided in **Enclosure 4.0**.

Table 9.0 presents the analytical results from annual monitoring of CDBO-6 for general inorganics and metals. All sample results were less than NM WQCC Regulation 3103 standards for ground water.

Table 10.0 presents the analytical results from annual monitoring of CDBO-6 for pesticides and PCBs. All sample results were less than NM WQCC Regulation 3103 standards for ground water.

Table 11.0 presents the analytical results from annual monitoring of CDBO-6 for volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs). A sample and field duplicate (FD) sample were collected. No VOCs or SVOCs were detected at concentrations greater than the analytical laboratory's MDL with the exception of chloromethane in the FD sample; no chloromethane was detected in the primary sample.

Table 12.0 presents the analytical results from annual monitoring of CDBO-6 for radiological constituents. All sample results were less than NM WQCC Regulation 3103 standards for ground water.

Table 1.0 Quarterly Water Quality Data, SWWS Plant Reuse Wet Well, NPDES Outfalls 001 and 03A027, and CDBO-6. 4th Quarter, 2009.

Sampling Location	Field Prep[2]	Sample Date	Sample ID No.	TDS (mg/L)	Chloride (mg/L)	NO3+NO2-N (mg/L)	TKN (mg/L)	NH3-N (mg/L)
SWWS Plant								
SWWS Plant Reuse Wet Well[1]	UF	11/18/09	SWWS46-10-6916	554	186	2.7	0.73	0.07
Sandia Canyon								
NPDES Outfall 001	UF	11/18/09	SWWS46-10-6914	514	148	1.24	0.69	0.16
NPDES Outfall 03A027	UF	11/18/09	SWWS46-10-6915	488	15.7	1.41	1.2	0.03
Canada del Buey								
CDBO-6	F	12/16/09	CAPA-10-6094	186	21.4	<0.25		0.05J
CDBO-6	UF	12/16/09	CAPA-10-6093				<0.1	
NM WQCC Regulation 3103 Ground Water Standards (mg/L)				*1000*	*250*	*10*[3]	*NA*	*NA*

Notes:

[1]Water in the reuse wet well is representative of water in the reuse pond.

[2]UF means a non-filtered sample, F means a filtered sample.

[3]The NMWQCC Regulation 3103 Ground Water Standard is for NO_3-N.

J means the reported result was greater than the Method Detection Limit but less than the Reporting Limit.

J+ means that the reported value is expected to be more uncertain than usual with a potential positive bias.

J- means that the reported value is expected to be more uncertain than usual with a potential negative bias.

NA means that there is no NM WQCC Regulation 3103 ground water standard for this analyte.

Table 2.0. Water Level in Cañada del Buey Observation Well (CDBO)-6, 4th Quarter 2009

Location	Date	Water Level† (ft)
CDBO-6	12/16/09	42.84

Notes:
† Measured in feet from the top of the well casing to the surface of the water.
NA means that no water level measurement was available.

Table 3.0. Discharge Volumes from the SWWS Plant and NPDES Outfall 001, and SWWS Plant Reuse Water to SCC Cooling Towers, 4th Quarter 2009 (in millions of gallons).

Month	SWWS Plant Effluent to TA-3[1]	Discharges to NPDES Outfall 001[2]	Reuse Water to SCC Cooling Towers[3] (estimated)	Discharges to NPDES Outfall 03A027[4]
Oct-2009	6.647	6.536	0	1.333
Nov-2009	6.073	6.135	0	1.195
Dec-2009	6.325	7.169	0	1.051

Notes:
[1]In the 4th quarter of 2009, all SWWS Plant effluent was pumped via a force main to TA-3 for reuse or discharge.
[2]Power plant wastewater and all SWWS Plant reuse water not used by the SCC Cooling Towers are discharged at NPDES Outfall 001.
[3]The SCC cooling towers can use potable or SWWS Plant reuse water. Table 3.0 contains the estimated volume of SWWS Plant reuse water that the SCC cooling towers used during the 4th quarter of 2009.
[4]The SCC cooling towers discharge to NPDES Outfall 03A027 at Sandia Canyon.

Table 4.0. Inspection Results, SERF Evaporation Basins, Leak Collection Standpipes.

Inspection Date	Inspection Results
10/23/09	All standpipes are dry or contain minimal amounts of water
11/19/09	All standpipes are dry or contain minimal amounts of water
12/18/09	All standpipes are dry or contain minimal amounts of water

Table 5.0. Annual Water Quality Data, General Inorganics and Metals, SWWS Plant Reuse Wet Well.

Location Name	Start Date	Analyte	Anyl Meth Code	Fld Prep Code		Std Result	Units	Std Mdl	Lab Qual Code	Concat Flag Code	Lab Code
SWS Facility Reuse Well	08/20/09	CN(TOTAL)	EPA:335.4	F		0.003	mg/L	0.0017	J	J	GELC
SWS Facility Reuse Well	08/20/09	Cl(-1)	EPA:300.0	UF		131	mg/L	0.66		J+	GELC
SWS Facility Reuse Well	08/20/09	ClO4	SW-846:6850	UF		0.418	ug/L	0.05			GELC
SWS Facility Reuse Well	08/20/09	F(-1)	EPA:300.0	UF		0.51	mg/L	0.033			GELC
SWS Facility Reuse Well	08/20/09	NH3-N	EPA:350.1	UF	<	0.04	mg/L	0.016	J	U	GELC
SWS Facility Reuse Well	08/20/09	NO3+NO2-N	EPA:353.2	UF		1.0	mg/L	0.05			GELC
SWS Facility Reuse Well	08/20/09	SO4(-2)	EPA:300.0	UF		17.2	mg/L	0.1		J+	GELC
SWS Facility Reuse Well	08/20/09	TDS	EPA:160.1	UF		482	mg/L	2.4			GELC
SWS Facility Reuse Well	08/20/09	TKN	EPA:351.2	UF		0.9	mg/L	0.03		J-	GELC
SWS Facility Reuse Well	08/20/09	pH	EPA:150.1	UF		7.68	SU	0.01	H	J-	GELC
SWS Facility Reuse Well	08/20/09	Ag	SW-846:6020	F	<	1	ug/L	0.2	U	U	GELC
SWS Facility Reuse Well	08/20/09	Al	SW-846:6010B	F	<	200	ug/L	68	U	U	GELC
SWS Facility Reuse Well	08/20/09	As	SW-846:6020	F		2.47	ug/L	1.5	J	J	GELC
SWS Facility Reuse Well	08/20/09	B	SW-846:6010B	F		76.7	ug/L	15			GELC
SWS Facility Reuse Well	08/20/09	Ba	SW-846:6010B	F		7.7	ug/L	1			GELC
SWS Facility Reuse Well	08/20/09	Be	SW-846:6010B	F	<	5	ug/L	1	U	U	GELC
SWS Facility Reuse Well	08/20/09	Cd	SW-846:6020	F	<	1	ug/L	0.11	U	U	GELC
SWS Facility Reuse Well	08/20/09	Co	SW-846:6010B	F	<	5	ug/L	1	U	U	GELC
SWS Facility Reuse Well	08/20/09	Cr	SW-846:6020	F		2.86	ug/L	2.5	J	J	GELC
SWS Facility Reuse Well	08/20/09	Cu	SW-846:6010B	F		3.5	ug/L	3	J	J	GELC
SWS Facility Reuse Well	08/20/09	Fe	SW-846:6010B	F		65	ug/L	30	J	J	GELC
SWS Facility Reuse Well	08/20/09	Hg	EPA:245.2	F	<	0.2	ug/L	0.066	U	U	GELC
SWS Facility Reuse Well	08/20/09	Hg	EPA:245.2	UF	<	0.2	ug/L	0.066	U	U	GELC
SWS Facility Reuse Well	08/20/09	Mn	SW-846:6010B	F		21.9	ug/L	2			GELC
SWS Facility Reuse Well	08/20/09	Mo	SW-846:6020	F		14.7	ug/L	0.1			GELC
SWS Facility Reuse Well	08/20/09	Ni	SW-846:6020	F		1.46	ug/L	0.5	J	J	GELC
SWS Facility Reuse Well	08/20/09	Pb	SW-846:6020	F	<	2	ug/L	0.5	U	U	GELC
SWS Facility Reuse Well	08/20/09	Sb	SW-846:6020	F	<	0.606	ug/L	0.5	J	U	GELC
SWS Facility Reuse Well	08/20/09	Se	SW-846:6020	F	<	5	ug/L	1	U	U	GELC
SWS Facility Reuse Well	08/20/09	U	SW-846:6020	F		0.067	ug/L	0.05	J	J	GELC
SWS Facility Reuse Well	08/20/09	Zn	SW-846:6010B	F		71.9	ug/L	3.3			GELC

Table 6.0. Annual Water Quality Data, PCBs, SWWS Plant Reuse Wet Well.

Location Name	Start Date	Analyte	Analyte	Anyl Meth Code	Fld Prep Code		Std Result	Units	Std Mdl	Lab Qual Code	Concat Flag Code	Lab Code
SWS Facility Reuse Well	8/20/09	12674-11-2	Aroclor-1016	SW-846:8082	UF	<	0.10	ug/L	0.034	U	U	GELC
SWS Facility Reuse Well	8/20/09	11104-28-2	Aroclor-1221	SW-846:8082	UF	<	0.10	ug/L	0.034	U	U	GELC
SWS Facility Reuse Well	8/20/09	11141-16-5	Aroclor-1232	SW-846:8082	UF	<	0.10	ug/L	0.034	U	U	GELC
SWS Facility Reuse Well	8/20/09	53469-21-9	Aroclor-1242	SW-846:8082	UF	<	0.10	ug/L	0.034	U	U	GELC
SWS Facility Reuse Well	8/20/09	12672-29-6	Aroclor-1248	SW-846:8082	UF	<	0.10	ug/L	0.034	U	U	GELC
SWS Facility Reuse Well	8/20/09	11097-69-1	Aroclor-1254	SW-846:8082	UF	<	0.10	ug/L	0.034	U	U	GELC
SWS Facility Reuse Well	8/20/09	11096-82-5	Aroclor-1260	SW-846:8082	UF	<	0.10	ug/L	0.034	U	U	GELC
SWS Facility Reuse Well	8/20/09	37324-23-5	Aroclor-1262	SW-846:8082	UF	<	0.10	ug/L	0.034	U	U	GELC

Table 7.0. Annual Water Quality Data, Volatile & Semi-volatile Organic Compounds, Detections Only, SWWS Plant Reuse Wet Well.

Location Name	Start Date	Analyte	Analyte Desc	Anyl Meth Code	Fld Prep Code		Std Result	Units	Lab Qual Code	Concat Flag Code	Fld Qc Type Code	Lab Code
SWS Facility Reuse Well	8/20/09	75-27-4	Bromodichloromethane	SW-846:8260B	UF		33.9	ug/L				GELC
SWS Facility Reuse Well	8/20/09	75-25-2	Bromoform	SW-846:8260B	UF		2.2	ug/L				GELC
SWS Facility Reuse Well	8/20/09	78-93-3	Butanone[2-]	SW-846:8260B	UF		3.3	ug/L	J	J		GELC
SWS Facility Reuse Well	8/20/09	124-48-1	Chlorodibromomethane	SW-846:8260B	UF		17.1	ug/L				GELC
SWS Facility Reuse Well	8/20/09	67-66-3	Chloroform	SW-846:8260B	UF		32.1	ug/L				GELC

Table 8.0. Annual Water Quality Data, Radiologicals, SWWS Plant Reuse Wet Well.

Location Name	Start Date	Analyte	Analyte Desc	Anyl Meth Code	Fld Prep Code		Std Result	Units	Std Uneert	Std Mda	Lab Qual Code	Concat Flag Code	Lab Code
SWS Facility Reuse Well	8/20/09	GROSSA	Gross Alpha	EPA:900	UF	<	0.99	pCi/L	0.87	3	U	UJ	GELC
SWS Facility Reuse Well	8/20/09	Ra-226	Radium-226	EPA:903.1	UF	<	0.37	pCi/L	0.19	0.55	U	U	GELC
SWS Facility Reuse Well	8/20/09	Ra-228	Radium-228	EPA:904	UF	<	0.62	pCi/L	0.41	1.4	U	U	GELC

Table 9.0. Annual Water Quality Data, General Inorganics and Metals, CDBO-6.

Location Name	Start Date	Analyte	Anyl Meth Code	Fld Prep Code		Std Result	Units	Std Mdl	Lab Qual Code	Concat Flag Code	Lab Code
CDBO-6	08/14/09	NH3-N	EPA:350.1	F	<	0.02	mg/L	0.02	J	U	GELC
CDBO-6	08/14/09	Cl(-1)	EPA:300.0	F		22.9	mg/L	0.13		J+	GELC
CDBO-6	08/14/09	CN(TOTAL)	EPA:335.4	UF	<	0.01	mg/L	0	U	U	GELC
CDBO-6	08/14/09	F(-1)	EPA:300.0	F		0.34	mg/L	0.03			GELC
CDBO-6	08/14/09	NO3+NO2-N	EPA:353.2	F	<	0.3	mg/L	0.05	U	U	GELC
CDBO-6	08/14/09	ClO4	SW-846:6850	F		0.302	ug/L	0.05			GELC
CDBO-6	08/14/09	SO4(-2)	EPA:300.0	F		9.96	mg/L	0.1			GELC
CDBO-6	08/14/09	TDS	EPA:160.1	F		189	mg/L	2.4		J	GELC
CDBO-6	08/14/09	TKN	EPA:351.2	UF	<	0.2	mg/L	0.03		U	GELC
CDBO-6	08/14/09	pH	GENERIC FIELD PH	UF		6.28	SU				FLD
CDBO-6	08/14/09	pH	EPA:150.1	F		6.85	SU	0.01	H	J-	GELC
CDBO-6	08/14/09	Al	SW-846:6010B	F		230	ug/L	68			GELC
CDBO-6	08/14/09	Sb	SW-846:6020	F	<	3	ug/L	0.5	U	U	GELC
CDBO-6	08/14/09	As	SW-846:6020	F	<	5	ug/L	1.5	U	U	GELC
CDBO-6	08/14/09	Ba	SW-846:6010B	F		88.4	ug/L	1			GELC
CDBO-6	08/14/09	Be	SW-846:6010B	F	<	5	ug/L	1	U	U	GELC
CDBO-6	08/14/09	B	SW-846:6010B	F		31.5	ug/L	15	J	J	GELC
CDBO-6	08/14/09	Cd	SW-846:6020	F	<	1	ug/L	0.11	U	U	GELC
CDBO-6	08/14/09	Cr	SW-846:6020	F	<	10	ug/L	2.5	U	U	GELC
CDBO-6	08/14/09	Co	SW-846:6010B	F	<	5	ug/L	1	U	U	GELC
CDBO-6	08/14/09	Cu	SW-846:6010B	F	<	10	ug/L	3	U	U	GELC
CDBO-6	08/14/09	Fe	SW-846:6010B	F		97.1	ug/L	30	J	J	GELC
CDBO-6	08/14/09	Pb	SW-846:6020	F	<	2	ug/L	0.5	U	U	GELC
CDBO-6	08/14/09	Mn	SW-846:6010B	F	<	10	ug/L	2	U	U	GELC
CDBO-6	08/14/09	Hg	EPA:245.2	UF	<	0.2	ug/L	0.07	U	U	GELC
CDBO-6	08/14/09	Hg	EPA:245.2	F	<	0.2	ug/L	0.07	U	U	GELC
CDBO-6	08/14/09	Mo	SW-846:6020	F	<	0.9	ug/L	0.1		U	GELC
CDBO-6	08/14/09	Ni	SW-846:6020	F		1.02	ug/L	0.5	J	J	GELC
CDBO-6	08/14/09	Se	SW-846:6020	F	<	5	ug/L	1	U	U	GELC
CDBO-6	08/14/09	Ag	SW-846:6020	F	<	1	ug/L	0.2	U	U	GELC
CDBO-6	08/14/09	U	SW-846:6020	F		0.1	ug/L	0.05	J	J	GELC
CDBO-6	08/14/09	V	SW-846:6010B	F		3.44	ug/L	1	J	J	GELC
CDBO-6	08/14/09	Zn	SW-846:6010B	F		21.7	ug/L	3.3			GELC

Table 10.0. Annual Water Quality Data, Pesticides & PCBs, CDBO-6.

Location Name	Start Date	Analyte	Analyte Desc	Anyl Meth Code	Fld Prep Code		Std Result	Units	Lab Qual Code	Concat Flag Code	Lab Code
CDBO-6	8/14/09	309-00-2	Aldrin	SW-846:8081A	UF	<	0.022	ug/L	U	U	GELC
CDBO-6	8/14/09	319-84-6	BHC[alpha-]	SW-846:8081A	UF	<	0.022	ug/L	U	U	GELC
CDBO-6	8/14/09	319-85-7	BHC[beta-]	SW-846:8081A	UF	<	0.022	ug/L	U	U	GELC
CDBO-6	8/14/09	319-86-8	BHC[delta-]	SW-846:8081A	UF	<	0.022	ug/L	U	U	GELC
CDBO-6	8/14/09	58-89-9	BHC[gamma-]	SW-846:8081A	UF	<	0.022	ug/L	U	U	GELC
CDBO-6	8/14/09	5103-71-9	Chlordane[alpha-]	SW-846:8081A	UF	<	0.022	ug/L	U	UJ	GELC
CDBO-6	8/14/09	5103-74-2	Chlordane[gamma-]	SW-846:8081A	UF	<	0.022	ug/L	U	U	GELC
CDBO-6	8/14/09	72-54-8	DDD[4,4'-]	SW-846:8081A	UF	<	0.044	ug/L	U	U	GELC
CDBO-6	8/14/09	72-55-9	DDE[4,4'-]	SW-846:8081A	UF	<	0.044	ug/L	U	U	GELC
CDBO-6	8/14/09	50-29-3	DDT[4,4'-]	SW-846:8081A	UF	<	0.044	ug/L	U	U	GELC
CDBO-6	8/14/09	60-57-1	Dieldrin	SW-846:8081A	UF	<	0.044	ug/L	U	U	GELC
CDBO-6	8/14/09	959-98-8	Endosulfan I	SW-846:8081A	UF	<	0.022	ug/L	U	U	GELC
CDBO-6	8/14/09	33213-65-9	Endosulfan II	SW-846:8081A	UF	<	0.044	ug/L	U	U	GELC
CDBO-6	8/14/09	1031-07-8	Endosulfan Sulfate	SW-846:8081A	UF	<	0.044	ug/L	U	U	GELC
CDBO-6	8/14/09	72-20-8	Endrin	SW-846:8081A	UF	<	0.044	ug/L	U	U	GELC
CDBO-6	8/14/09	7421-93-4	Endrin Aldehyde	SW-846:8081A	UF	<	0.044	ug/L	U	UJ	GELC
CDBO-6	8/14/09	53494-70-5	Endrin Ketone	SW-846:8081A	UF	<	0.044	ug/L	U	UJ	GELC
CDBO-6	8/14/09	76-44-8	Heptachlor	SW-846:8081A	UF	<	0.022	ug/L	U	UJ	GELC
CDBO-6	8/14/09	1024-57-3	Heptachlor Epoxide	SW-846:8081A	UF	<	0.022	ug/L	U	U	GELC
CDBO-6	8/14/09	72-43-5	Methoxychlor[4,4'-]	SW-846:8081A	UF	<	0.222	ug/L	U	UJ	GELC
CDBO-6	8/14/09	8001-35-2	Toxaphene (Technical Grade)	SW-846:8081A	UF	<	0.556	ug/L	U	U	GELC
CDBO-6	8/14/09	12674-11-2	Aroclor-1016	SW-846:8082	UF	<	0.11	ug/L	U	U	GELC
CDBO-6	8/14/09	11104-28-2	Aroclor-1221	SW-846:8082	UF	<	0.11	ug/L	U	U	GELC
CDBO-6	8/14/09	11141-16-5	Aroclor-1232	SW-846:8082	UF	<	0.11	ug/L	U	U	GELC
CDBO-6	8/14/09	53469-21-9	Aroclor-1242	SW-846:8082	UF	<	0.11	ug/L	U	U	GELC
CDBO-6	8/14/09	12672-29-6	Aroclor-1248	SW-846:8082	UF	<	0.11	ug/L	U	U	GELC
CDBO-6	8/14/09	11097-69-1	Aroclor-1254	SW-846:8082	UF	<	0.11	ug/L	U	U	GELC
CDBO-6	8/14/09	11096-82-5	Aroclor-1260	SW-846:8082	UF	<	0.11	ug/L	U	U	GELC
CDBO-6	8/14/09	37324-23-5	Aroclor-1262	SW-846:8082	UF	<	0.11	ug/L	U	U	GELC

Table 11.0. Annual Water Quality Data, Volatile & Semi-volatile Organic Compounds, Detections Only, CDBO-6.

Location Name	Start Date	Analyte	Analyte Desc	Anyl Meth Code	Fld Prep Code		Std Result	Units	Lab Qual Code	Concat Flag Code	Fld Qc Type Code	Lab Code
CDBO-6	8/14/09	74-87-3	Chloromethane	SW-846:8260B	UF		0.4	ug/L	J	J	FD	GELC
CDBO-6	8/14/09	74-87-3	Chloromethane	SW-846:8260B	UF	<	1.0	ug/L	U	U		GELC

Table 12.0. Annual Water Quality Data, Radiologicals, CDBO-6.

Location Name	Start Date	Analyte	Analyte Desc	Anyl Meth Code	Fld Prep Code		Std Result	Units	Std Uncert	Std Mda	Lab Qual Code	Concat Flag Code	Lab Code
CDBO-6	8/14/09	GROSSA	Gross Alpha	EPA:900	UF		6.46	pCi/L	1.8	3.5			GELC
CDBO-6	8/14/09	Ra-226	Radium-226	EPA:903.1	UF		0.37	pCi/L	0.12	0.32			GELC
CDBO-6	8/14/09	Ra-228	Radium-228	EPA:904	UF	<	0.57	pCi/L	0.3	0.91	U	U	GELC

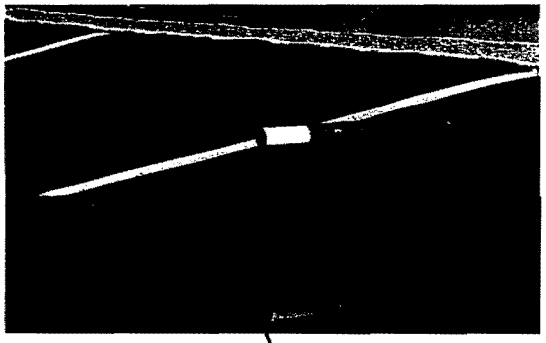
ENCLOSURE 1.0

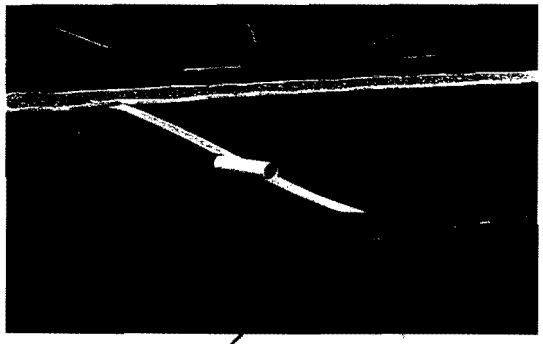
Photographs

SERF Evaporation Basins and Leak Inspection Pipes

Inspection Dates:
October 23, 2009
November 19, 2009
December 18, 2009

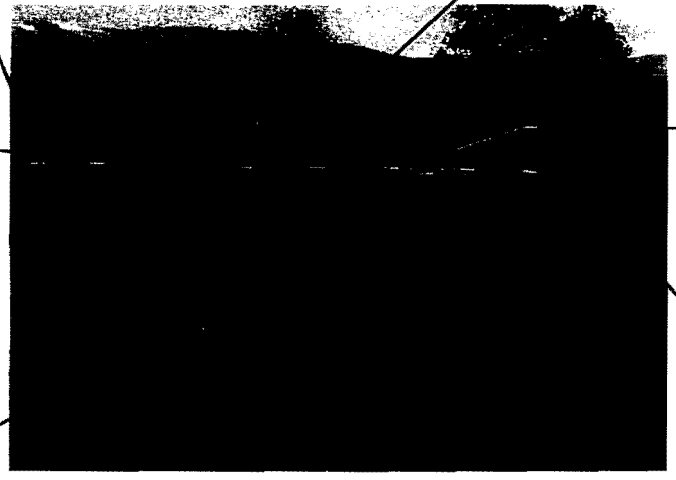
West Basin





East Basin

West basin east inspection pipe



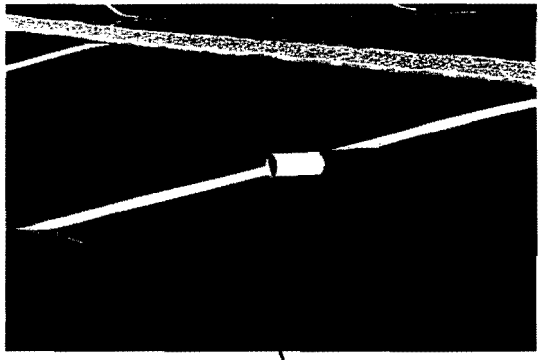
East basin east inspection pipe

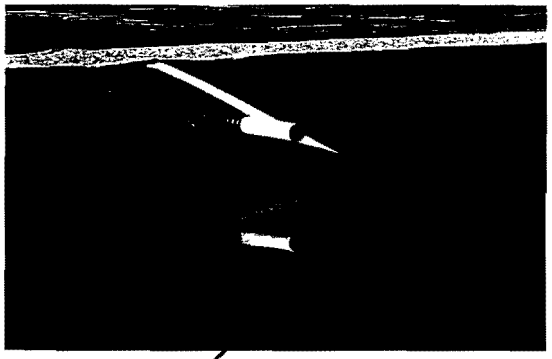
West basin west inspection pipe

East basin west inspection pipe

October 23, 2009, SERF Evap Basin Inspection Record

West Basin





East Basin

West basin east inspection pipe

East basin east inspection pipe

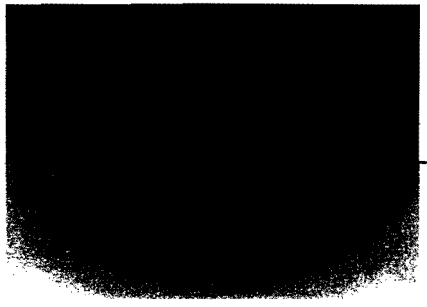
West basin west inspection pipe

East basin west inspection pipe

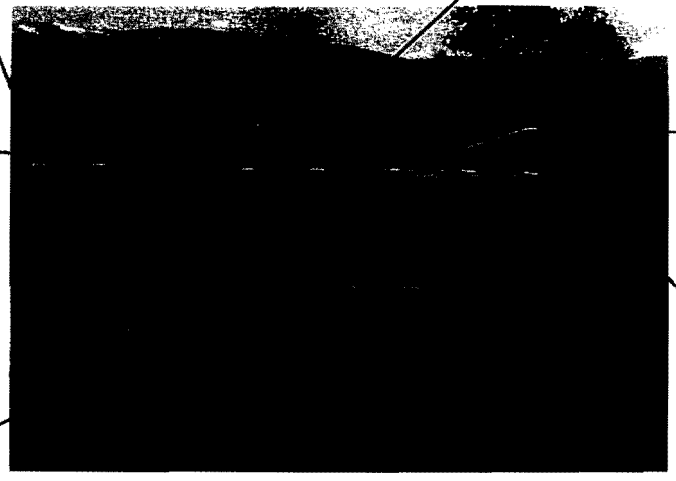
November 19, 2009, SERF Evap Basin Inspection Record

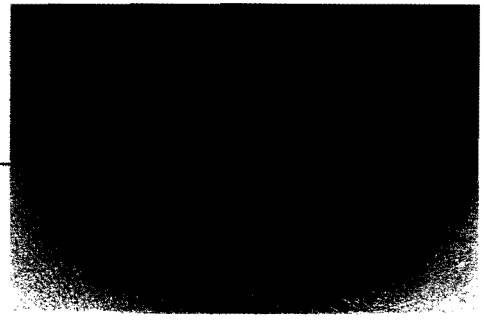
West Basin

East Basin

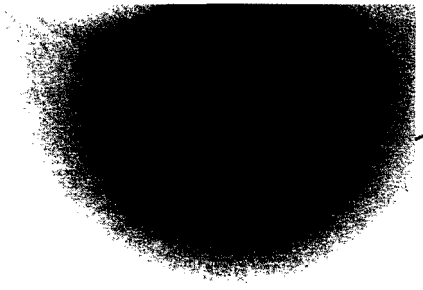


West basin east inspection pipe





East basin east inspection pipe



West basin west inspection pipe

East basin west inspection pipe

December 18, 2009, SERF Evap Basin Inspection Record

ENCLOSURE 2.0

General Engineering Laboratories Analytical Reports

SWWS Plant Reuse Wet Well, NPDES Outfalls 001 and 03A027 CDBO-6

4th Quarter Monitoring 2009:
NO3+NO2-N, NH3-N, TKN, Cl, TDS

Los Alamos
National Laboratory

SWWS PLANT REUSE WELL

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Los Alamos National Laboratory
Address : PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **LANL-WQH WQCC Regs**

Report Date: November 25, 2009

Client SDG: 10-585

Client Sample ID:	SWWS46-10-6916	Project:	ESHL01003
Sample ID:	241411003	Client ID:	LANL010
Matrix:	Waste Water		
Collect Date:	18-NOV-09 12:00		
Receive Date:	19-NOV-09		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography Federal											
EPA 300.0 Chloride in Liquid "As Received"											
Chloride		186	1.65	5.00	mg/L	25	GXM3	11/24/09	1306	925117	1
Nutrient Analysis											
EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"											
Nitrogen, Nitrate/Nitrite		2.71	0.050	0.250	mg/L	5	AXH3	11/23/09	1207	924449	2
Nutrient Analysis Federal											
Nitrogen as Ammonia "As Received"											
Nitrogen, Ammonia		0.070	0.016	0.050	mg/L	1	AXH3	11/20/09	1531	924446	3
Nitrogen, Total Kjeldahl (TKN) "As Received"											
Nitrogen, Total Kjeldahl		0.728	0.033	0.100	mg/L	1	AXH3	11/24/09	1612	924889	4
Solids Analysis Federal											
EPA 160.1 Solids, Dissolved-F "As Received"											
Total Dissolved Solids		554	2.38	10.0	mg/L		SDS	11/20/09	1024	924865	5

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	SXJ1	11/20/09	0945	924445
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	SXJ1	11/20/09	1400	924887

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 353.2	
3	EPA 350.1	
4	EPA 351.2	
5	EPA 160.1	

NPDES OUTFALL 03A027

GEL LABORATORIES LLC

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Certificate of Analysis

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Address : PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **LANL-WQH WQCC Regs**

Report Date: November 25, 2009

Client SDG: 10-585

Client Sample ID:	SWWS46-10-6915	Project:	ESHL01003
Sample ID:	241411002	Client ID:	LANL010
Matrix:	Waste Water		
Collect Date:	18-NOV-09 12:00		
Receive Date:	19-NOV-09		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography Federal											
EPA 300.0 Chloride in Liquid "As Received"											
Chloride		15.7	0.066	0.200	mg/L	1	GXM3	11/21/09	0712	925117	1
Nutrient Analysis											
EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"											
Nitrogen, Nitrate/Nitrite		1.41	0.050	0.250	mg/L	5	AXH3	11/23/09	1205	924449	2
Nutrient Analysis Federal											
Nitrogen as Ammonia "As Received"											
Nitrogen, Ammonia	J	0.032	0.016	0.050	mg/L	1	AXH3	11/20/09	1530	924446	3
Nitrogen, Total Kjeldahl (TKN) "As Received"											
Nitrogen, Total Kjeldahl		1.19	0.033	0.100	mg/L	1	AXH3	11/24/09	1611	924889	4
Solids Analysis Federal											
EPA 160.1 Solids, Dissolved-F "As Received"											
Total Dissolved Solids		488	2.38	10.0	mg/L		SDS	11/20/09	1024	924865	5

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	SXJ1	11/20/09	0945	924445
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	SXJ1	11/20/09	1400	924887

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 353.2	
3	EPA 350.1	
4	EPA 351.2	
5	EPA 160.1	

NPDES OUTFALL 001

GEL LABORATORIES LLC

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Certificate of Analysis

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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **LANL-WQH WQCC Regs**

Report Date: November 25, 2009

Client SDG: 10-585

Client Sample ID:	SWWS46-10-6914	Project:	ESHL01003
Sample ID:	241411001	Client ID:	LANL010
Matrix:	Waste Water		
Collect Date:	18-NOV-09 12:00		
Receive Date:	19-NOV-09		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography Federal											
EPA 300.0 Chloride in Liquid "As Received"											
Chloride		148	1.65	5.00	mg/L	25	GXM3	11/24/09	1131	925117	1
Nutrient Analysis											
EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"											
Nitrogen, Nitrate/Nitrite		1.24	0.050	0.250	mg/L	5	AXH3	11/23/09	1202	924449	2
Nutrient Analysis Federal											
Nitrogen as Ammonia "As Received"											
Nitrogen, Ammonia		0.162	0.016	0.050	mg/L	1	AXH3	11/20/09	1537	924446	3
Nitrogen, Total Kjeldahl (TKN) "As Received"											
Nitrogen, Total Kjeldahl		0.691	0.033	0.100	mg/L	1	AXH3	11/24/09	1608	924889	4
Solids Analysis Federal											
EPA 160.1 Solids, Dissolved-F "As Received"											
Total Dissolved Solids		514	2.38	10.0	mg/L		SDS	11/20/09	1024	924865	5

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	SXJ1	11/20/09	0945	924445
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	SXJ1	11/20/09	1400	924887

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 353.2	
3	EPA 350.1	
4	EPA 351.2	
5	EPA 160.1	

CD30-6

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Los Alamos National Laboratory
Address : PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **LANL-WQH Water Samples**

Report Date: January 5, 2010

Client SDG: 10-973

Client Sample ID:	CAPA-10-6093	Project:	ESHL01000
Sample ID:	243255001	Client ID:	LANL010
Matrix:	Ground Water		
Collect Date:	16-DEC-09 12:00		
Receive Date:	18-DEC-09		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW 9060 Total Organic Carbon "As Received"											
Total Organic Carbon Average		1.22	0.330	1.00	mg/L	1	TSM	12/21/09	2026	935196	1
Flow Injection Analysis											
EPA 335.4 Cyanide, Total "As Received"											
Cyanide, Total	U	ND	1.66	5.00	ug/L	1	AXC2	12/22/09	1648	935209	2
Nutrient Analysis											
Nitrogen, Total Kjeldahl (TKN) "As Received"											
Nitrogen, Total Kjeldahl	U	ND	0.033	0.100	mg/L	1	AXH3	12/28/09	1541	935533	3

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 335.4	EPA 335.4 Total Cyanide	AXS5	12/22/09	1414	935207

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060	
2	EPA 335.4	
3	EPA 351.2	

CD30-6

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Certificate of Analysis

Company : Los Alamos National Laboratory
Address : PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **LANL-WQH Water Samples**

Report Date: January 5, 2010

Client SDG: 10-973

Client Sample ID: CAPA-10-6094
Sample ID: 243255002
Matrix: Ground Water
Collect Date: 16-DEC-09 12:00
Receive Date: 18-DEC-09
Collector: Client

Project: ESHL01000
Client ID: LANL010

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Conductivity Analysis											
EPA120.1 Specific Conductivity "As Received"											
Conductivity		220	1.00	1.00	umhos/cm	1	TXT1	12/22/09	1553	935817	1
Electrode Analysis											
EPA 150.1 pH Federal "As Received"											
pH at Temp 15.2C	H	7.02	0.010	0.100	SU	1	LXA1	12/22/09	1059	935860	2
Ion Chromatography											
EPA 300.0 Anions Liquid 28 day "As Received"											
Bromide	U	ND	0.066	0.200	mg/L	1	VH1	12/22/09	0609	935518	3
Fluoride		0.361	0.033	0.100	mg/L	1					
Sulfate		9.68	0.100	0.400	mg/L	1					
Chloride		21.4	0.330	1.00	mg/L	5	VH1	12/28/09	1804	935518	4
Nutrient Analysis											
EPA 350.1 Nitrogen, Ammonia L "As Received"											
Nitrogen, Ammonia	J	0.047	0.016	0.050	mg/L	1	AXH3	12/22/09	1522	934272	5
EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"											
Nitrogen, Nitrate/Nitrite	U	ND	0.050	0.250	mg/L	5	AXH3	12/21/09	1142	934820	6
EPA 365.4 Phosphorus, Total in "As Received"											
Phosphorus, Total as P		0.138	0.015	0.050	mg/L	1	AXH3	12/22/09	1044	934824	7
Solids Analysis											
EPA 160.1 Solids, Dissolved-F "As Received"											
Total Dissolved Solids		186	2.38	10.0	mg/L		SDS	12/21/09	1122	934796	8
Titration Analysis											
EPA 310.1 Total Alkalinity Federal "As Received"											
Alkalinity, Total as CaCO3		56.9	0.725	1.00	mg/L		LXA1	12/22/09	1517	936028	9
Carbonate alkalinity (CaCO3)	U	ND	0.725	1.00	mg/L						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	SXJ1	12/21/09	1515	934271
EPA 365.4 Prep	EPA 365.4 Phosphorus, Total in liquid PR	SXJ1	12/21/09	1015	934823

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 120.1	

ENCLOSURE 3.0

General Engineering Laboratories Analytical Reports

SWWS Plant Reuse Wet Well

Annual Monitoring 2009:
Metals
Radiologicals
General Chemistry
VOC
SVOC
PCBs

Los Alamos
National Laboratory

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2977	**Date Collected:**	08/20/2009 12:00	**Matrix:**	WATER
Lab Sample ID:	235864005	**Date Received:**	08/22/2009 09:00		
		Client:	LANL010	**Project:**	ESHL01000
Client ID:	SWWS46-09-12226	**Method:**	SW846 8260B DOE-AL	**SOP Ref:**	GL-OA-E-038
Batch ID:	898479	**Inst:**	VOA3.I	**Dilution:**	1
Run Date:	08/29/2009 18:34	**Analyst:**	GRB2	**Purge Vol:**	5 mL
Prep Date:	08/29/2009 18:34				
Data File:	3b617.d	**Column:**	DB-624	**Level:**	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.500	1.00
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
67-64-1	Acetone	U	10.0	ug/L	3.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	6.25	25.0
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.25	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	3.00	10.0
75-15-0	Carbon disulfide	U	5.00	ug/L	1.25	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.250	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	J	3.28	ug/L	1.25	5.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform		32.1	ug/L	0.250	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.325	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.250	1.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.250	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.250	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.250	1.00
75-27-4	Bromodichloromethane		33.9	ug/L	0.250	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.25	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
108-88-3	Toluene	U	1.00	ug/L	0.250	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.250	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.25	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2977	Date Collected:	08/20/2009 12:00	Matrix:	WATER
Lab Sample ID:	235864005	Date Received:	08/22/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	SWWS46-09-12226	Method:	SW846 8260B DOE-AL	SOP Ref:	GL-OA-E-038
Batch ID:	898479	Inst:	VOA3.I	Dilution:	1
Run Date:	08/29/2009 18:34	Analyst:	GRB2	Purge Vol:	5 mL
Prep Date:	08/29/2009 18:34				
Data File:	3b617.d	Column:	DB-624	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		17.1	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.250	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.250	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.250	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.500	2.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
100-42-5	Styrene	U	1.00	ug/L	0.250	1.00
75-25-2	Bromoform		2.16	ug/L	0.250	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.250	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.250	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.250	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.250	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.250	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.250	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.250	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.250	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	U	1.00	ug/L	0.250	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.332	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.25	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.00	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.00	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.00	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	12.5	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.00	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2977	Date Collected:	08/20/2009 12:00	Matrix:	WATER
Lab Sample ID:	235864005	Date Received:	08/22/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	SWWS46-09-12226	Method:	SW846 8260B DOE-AL	SOP Ref:	GL-OA-E-038
Batch ID:	898479	Inst:	VOA3.I	Dilution:	1
Run Date:	08/29/2009 18:34	Analyst:	GRB2	Purge Vol:	5 mL
Prep Date:	08/29/2009 18:34				
Data File:	3b617.d	Column:	DB-624	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.00	5.00
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.250	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	52.1	50.0	ug/L	104	(59%-130%)
Bromofluorobenzene	52.0	50.0	ug/L	104	(71%-126%)
Toluene-d8	49.0	50.0	ug/L	98.0	(76%-129%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	Unknown	4.24	6.48	ug/L		J
	Unknown	6.04	11.8	ug/L		J
67-63-0	Isopropyl Alcohol	8.14	5.78	ug/L	74	NJ

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2977	Date Collected:	08/20/2009 12:00	Matrix:	WATER
Lab Sample ID:	235864007	Date Received:	08/22/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	SWWS46-09-12307	Method:	SW846 8260B DOE-AL	SOP Ref:	GL-OA-E-038
Batch ID:	898479	Inst:	VOA3.I	Dilution:	1
Run Date:	08/29/2009 19:06	Analyst:	GRB2	Purge Vol:	5 mL
Prep Date:	08/29/2009 19:06				
Data File:	3b618.d	Column:	DB-624	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.500	1.00
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
67-64-1	Acetone	U	10.0	ug/L	3.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	6.25	25.0
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.25	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	3.00	10.0
75-15-0	Carbon disulfide	U	5.00	ug/L	1.25	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.250	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.25	5.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.250	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.325	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.250	1.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.250	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.250	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.250	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.250	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.25	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
108-88-3	Toluene	U	1.00	ug/L	0.250	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.250	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.25	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2977	Date Collected:	08/20/2009 12:00	Matrix:	WATER
Lab Sample ID:	235864007	Date Received:	08/22/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	SWWS46-09-12307	Method:	SW846 8260B DOE-AL	SOP Ref:	GL-OA-E-038
Batch ID:	898479	Inst:	VOA3.I	Dilution:	1
Run Date:	08/29/2009 19:06	Analyst:	GRB2	Purge Vol:	5 mL
Prep Date:	08/29/2009 19:06				
Data File:	3b618.d	Column:	DB-624	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.250	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.250	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.250	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.500	2.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
100-42-5	Styrene	U	1.00	ug/L	0.250	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.250	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.250	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.250	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.250	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.250	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.250	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.250	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.250	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.250	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	U	1.00	ug/L	0.250	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.332	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.25	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.00	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.00	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.00	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	12.5	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.00	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2977	Date Collected:	08/20/2009 12:00	Matrix:	WATER
Lab Sample ID:	235864007	Date Received:	08/22/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	SWWS46-09-12307	Method:	SW846 8260B DOE-AL	SOP Ref:	GL-OA-E-038
Batch ID:	898479	Inst:	VOA3.I	Dilution:	1
Run Date:	08/29/2009 19:06	Analyst:	GRB2	Purge Vol:	5 mL
Prep Date:	08/29/2009 19:06				
Data File:	3b618.d	Column:	DB-624	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.00	5.00
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.250	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	55.1	50.0	ug/L	110	(59%-130%)
Bromofluorobenzene	50.3	50.0	ug/L	101	(71%-126%)
Toluene-d8	51.2	50.0	ug/L	102	(76%-129%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	Unknown	6.04	15.2	ug/L		J

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2977	Date Collected:	08/20/2009 12:00	Matrix:	WATER
Lab Sample ID:	235864005	Date Received:	08/22/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	SWWS46-09-12226	Method:	SW846 8270C	SOP Ref:	GL-OA-E-009
Batch ID:	897818	Inst:	MSD4.1	Dilution:	1
Run Date:	08/28/2009 13:00	Analyst:	JMB3	Inj. Vol:	.5 uL
Prep Date:	08/27/2009 21:13	Aliquot:	960 mL	Final Volume:	1 mL
Data File:	s4h2816.d	Column:	J&W DB-5MS	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
62-75-9	N-Methyl-N-nitrosomethylamine	U	10.4	ug/L	2.08	10.4
108-95-2	Phenol	U	10.4	ug/L	1.04	10.4
95-57-8	2-Chlorophenol	U	10.4	ug/L	2.08	10.4
106-46-7	1,4-Dichlorobenzene	U	10.4	ug/L	2.08	10.4
621-64-7	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*	U	10.4	ug/L	2.08	10.4
59-50-7	Parachlorometa cresol *4-Chloro-3-methylphenol*	U	10.4	ug/L	2.08	10.4
83-32-9	Acenaphthene	U	1.04	ug/L	0.323	1.04
121-14-2	2,4-Dinitrotoluene	U	10.4	ug/L	2.08	10.4
100-02-7	4-Nitrophenol	U	10.4	ug/L	2.08	10.4
87-86-5	Pentachlorophenol	U	10.4	ug/L	2.08	10.4
129-00-0	Pyrene	U	1.04	ug/L	0.313	1.04
110-86-1	Pyridine	U	10.4	ug/L	3.13	10.4
62-53-3	Aniline	U	10.4	ug/L	2.60	10.4
111-44-4	bis(2-Chloroethyl) ether	U	10.4	ug/L	2.08	10.4
541-73-1	1,3-Dichlorobenzene	U	10.4	ug/L	2.08	10.4
100-51-6	Benzyl alcohol	U	10.4	ug/L	2.08	10.4
95-50-1	1,2-Dichlorobenzene	U	10.4	ug/L	2.08	10.4
108-60-1	bis(2-Chloroisopropyl)ether	U	10.4	ug/L	2.08	10.4
95-48-7	o-Cresol	U	10.4	ug/L	2.08	10.4
65794-96-9	m,p-Cresols	U	10.4	ug/L	3.13	10.4
67-72-1	Hexachloroethane	U	10.4	ug/L	2.08	10.4
98-95-3	Nitrobenzene	U	10.4	ug/L	3.13	10.4
78-59-1	Isophorone	U	10.4	ug/L	3.13	10.4
88-75-5	2-Nitrophenol	U	10.4	ug/L	2.08	10.4
105-67-9	2,4-Dimethylphenol	U	10.4	ug/L	2.08	10.4
111-91-1	bis(2-Chloroethoxy)methane	U	10.4	ug/L	3.13	10.4
120-83-2	2,4-Dichlorophenol	U	10.4	ug/L	2.08	10.4
65-85-0	Benzoic acid	U	20.8	ug/L	6.25	20.8
91-20-3	Naphthalene	U	1.04	ug/L	0.313	1.04
106-47-8	4-Chloroaniline	U	10.4	ug/L	2.08	10.4
87-68-3	Hexachlorobutadiene	U	10.4	ug/L	2.08	10.4
91-57-6	2-Methylnaphthalene	U	1.04	ug/L	0.313	1.04
90-12-0	1-Methylnaphthalene	U	1.04	ug/L	0.313	1.04
77-47-4	Hexachlorocyclopentadiene	U	10.4	ug/L	3.13	10.4
88-06-2	2,4,6-Trichlorophenol	U	10.4	ug/L	2.08	10.4
95-95-4	2,4,5-Trichlorophenol	U	10.4	ug/L	2.08	10.4
91-58-7	2-Chloronaphthalene	U	1.04	ug/L	0.313	1.04

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2977	**Date Collected:**	08/20/2009 12:00	**Matrix:**	WATER
Lab Sample ID:	235864005	**Date Received:**	08/22/2009 09:00		
		Client:	LANL010	**Project:**	ESHL01000
Client ID:	SWWS46-09-12226	**Method:**	SW846 8270C	**SOP Ref:**	GL-OA-E-009
Batch ID:	897818	**Inst:**	MSD4.I	**Dilution:**	1
Run Date:	08/28/2009 13:00	**Analyst:**	JMB3	**Inj. Vol:**	.5 uL
Prep Date:	08/27/2009 21:13	**Aliquot:**	960 mL	**Final Volume:**	1 mL
Data File:	s4h2816.d	**Column:**	J&W DB-5MS	**Level:**	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
88-74-4	2-Nitroaniline *o-Nitroaniline*	U	10.4	ug/L	2.08	10.4
99-09-2	3-Nitroaniline *m-Nitroaniline*	U	10.4	ug/L	2.08	10.4
131-11-3	Dimethylphthalate	U	10.4	ug/L	2.08	10.4
606-20-2	2,6-Dinitrotoluene	U	10.4	ug/L	2.08	10.4
208-96-8	Acenaphthylene	U	1.04	ug/L	0.208	1.04
51-28-5	2,4-Dinitrophenol	U	20.8	ug/L	5.21	20.8
132-64-9	Dibenzofuran	U	10.4	ug/L	2.08	10.4
84-66-2	Diethylphthalate	U	10.4	ug/L	2.08	10.4
86-73-7	Fluorene	U	1.04	ug/L	0.208	1.04
7005-72-3	4-Chlorophenylphenylether	U	10.4	ug/L	2.08	10.4
534-52-1	2-Methyl-4,6-dinitrophenol	U	10.4	ug/L	3.13	10.4
100-01-6	4-Nitroaniline *p-Nitroaniline*	U	10.4	ug/L	3.13	10.4
122-39-4	Diphenylamine	U	10.4	ug/L	3.13	10.4
122-66-7	Azobenzene *1,2-Diphenylhydrazine*	U	10.4	ug/L	2.08	10.4
101-55-3	4-Bromophenylphenylether	U	10.4	ug/L	2.08	10.4
118-74-1	Hexachlorobenzene	U	10.4	ug/L	2.08	10.4
1912-24-9	Atrazine	U	10.4	ug/L	3.13	10.4
85-01-8	Phenanthrene	U	1.04	ug/L	0.208	1.04
120-12-7	Anthracene	U	1.04	ug/L	0.208	1.04
84-74-2	Di-n-butylphthalate	U	10.4	ug/L	2.08	10.4
206-44-0	Fluoranthene	U	1.04	ug/L	0.208	1.04
92-87-5	Benzidine	U	10.4	ug/L	3.13	10.4
85-68-7	Butylbenzylphthalate	U	10.4	ug/L	2.08	10.4
56-55-3	Benzo(a)anthracene	U	1.04	ug/L	0.208	1.04
91-94-1	3,3'-Dichlorobenzidine	U	10.4	ug/L	2.08	10.4
218-01-9	Chrysene	U	1.04	ug/L	0.208	1.04
117-81-7	bis(2-Ethylhexyl)phthalate	U	10.4	ug/L	2.08	10.4
117-84-0	Di-n-octylphthalate	U	10.4	ug/L	3.13	10.4
205-99-2	Benzo(b)fluoranthene	U	1.04	ug/L	0.208	1.04
207-08-9	Benzo(k)fluoranthene	U	1.04	ug/L	0.208	1.04
50-32-8	Benzo(a)pyrene	U	1.04	ug/L	0.208	1.04
193-39-5	Indeno(1,2,3-cd)pyrene	U	1.04	ug/L	0.208	1.04
53-70-3	Dibenzo(a,h)anthracene	U	1.04	ug/L	0.208	1.04
191-24-2	Benzo(ghi)perylene	U	1.04	ug/L	0.208	1.04
123-91-1	1,4-Dioxane	U	10.4	ug/L	2.08	10.4
55-18-5	N-Nitrosodiethylamine	U	10.4	ug/L	2.08	10.4

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2977	Date Collected:	08/20/2009 12:00	Matrix:	WATER
Lab Sample ID:	235864005	Date Received:	08/22/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	SWWS46-09-12226	Method:	SW846 8270C	SOP Ref:	GL-OA-E-009
Batch ID:	897818	Inst:	MSD4.I	Dilution:	1
Run Date:	08/28/2009 13:00	Analyst:	JMB3	Inj. Vol:	.5 uL
Prep Date:	08/27/2009 21:13	Aliquot:	960 mL	Final Volume:	1 mL
Data File:	s4h2816.d	Column:	J&W DB-5MS	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
930-55-2	N-Nitrosopyrrolidine	U	10.4	ug/L	2.08	10.4
924-16-3	N-Nitrosodi-n-butylamine	U	10.4	ug/L	3.13	10.4
95-94-3	1,2,4,5-Tetrachlorobenzene	U	10.4	ug/L	3.13	10.4
608-93-5	Pentachlorobenzene	U	10.4	ug/L	3.13	10.4
58-90-2	2,3,4,6-Tetrachlorophenol	U	10.4	ug/L	2.08	10.4
88-85-7	Dinoseb	U	10.4	ug/L	2.08	10.4
120-82-1	1,2,4-Trichlorobenzene	U	10.4	ug/L	2.08	10.4

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
2,4,6-Tribromophenol	73.6	104	ug/L	70.6	(39%-115%)
2-Fluorobiphenyl	37.1	52.1	ug/L	71.2	(35%-100%)
2-Fluorophenol	50.9	104	ug/L	48.8	(25%-92%)
Nitrobenzene-d5	38.7	52.1	ug/L	74.2	(40%-112%)
Phenol-d5	35.9	104	ug/L	34.5	(15%-73%)
p-Terphenyl-d14	43.1	52.1	ug/L	82.8	(46%-130%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
1569-50-2	3-Penten-2-ol	1.96	8.25	ug/L	80	NJ
75-27-4	Methane, bromodichloro-	2.1	4.68	ug/L	97	NJ
	Unknown	2.57	19.9	ug/L		J
	Unknown	2.99	17.1	ug/L		J
1000154-28-6	Cyclopentene, 1,2,3,4,5-pentamethyl-	3.16	6.18	ug/L	90	NJ

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 898051

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
SWWS46-09-12226

Date Received: 22-AUG-09

GEL Job No (SDG): 09-2977

GEL Sample ID: 235864005

Date Filtered: 28-AUG-09

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.418	ug/L		1	31-AUG-09 16:33	per0831015a
	Perchlorate Isotope Ratio			3.27			1	31-AUG-09 16:33	per0831015a
14797-73-0	Perchlorate-101	.05	.2	0.407	ug/L		1	31-AUG-09 16:33	per0831015a
	Perchlorate-O(18)			0.515	ug/L		1	31-AUG-09 16:33	per0831015a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

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PCB
Certificate of Analysis
Sample Summary

SDG Number:	09-2977	**Date Collected:**	08/20/2009 12:00	**Matrix:**	WATER
Lab Sample ID:	235864006	**Date Received:**	08/22/2009 09:00		
		Client:	LANL010	**Project:**	ESHL01000
Client ID:	SWWS46-09-12226	**Method:**	SW846 8082	**SOP Ref:**	GL-OA-E-040
Batch ID:	898759	**Inst:**	ECD1A.I	**Dilution:**	1
Run Date:	09/01/2009 16:01	**Analyst:**	YS1	**Inj. Vol:**	1 uL
Prep Date:	08/31/2009 21:07	**Aliquot:**	980 mL	**Final Volume:**	1 mL
Data File:	026f2601.d	**Column:**	1 CLP1	**Level:**	LOW
	026b2601.d		2 CLP2		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	0.102	ug/L	0.034	0.102	1
11104-28-2	Aroclor-1221	U	0.102	ug/L	0.034	0.102	1
11141-16-5	Aroclor-1232	U	0.102	ug/L	0.034	0.102	1
53469-21-9	Aroclor-1242	U	0.102	ug/L	0.034	0.102	1
12672-29-6	Aroclor-1248	U	0.102	ug/L	0.034	0.102	1
11097-69-1	Aroclor-1254	U	0.102	ug/L	0.034	0.102	1
11096-82-5	Aroclor-1260	U	0.102	ug/L	0.034	0.102	1
37324-23-5	Aroclor-1262	U	0.102	ug/L	0.034	0.102	1

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
4cmx	0.157	0.204	ug/L	76.8	(29%-103%)
Decachlorobiphenyl	0.136	0.204	ug/L	66.4	(34%-118%)

— Filtered —

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 09-2977 **METHOD TYPE:** EPA

SAMPLE ID: 235864004 **CLIENT ID:** SWWS46-09-12236

CONTRACT: ESHL01000

MATRIX: W **DATE RECEIVED** 22-AUG-09 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	DF	Instrument ID	Analytical Run
7439-97-6	Mercury	0.066	ug/L	U		AV	0.066	1	HG3	090209W1-5
7429-90-5	Aluminum	68	ug/L	U		P	68	1	OPTIMA3	090209-1
7440-36-0	Antimony	0.606	ug/L	J		MS	0.5	1	ICPMS5	090914-2
7440-38-2	Arsenic	2.47	ug/L	J		MS	1.5	1	ICPMS5	090914-2
7440-39-3	Barium	7.67	ug/L			P	1	1	OPTIMA3	090209-1
7440-41-7	Beryllium	1	ug/L	U		P	1	1	OPTIMA3	090209-1
7440-42-8	Boron	76.7	ug/L			P	15	1	OPTIMA3	090209-1
7440-43-9	Cadmium	0.11	ug/L	U		MS	0.11	1	ICPMS5	090914-2
7440-70-2	Calcium	27600	ug/L			P	50	1	OPTIMA3	090209-1
7440-47-3	Chromium	2.86	ug/L	J		MS	2.5	1	ICPMS5	090914-4
7440-48-4	Cobalt	1	ug/L	U		P	1	1	OPTIMA3	090209-1
7440-50-8	Copper	3.5	ug/L	J		P	3	1	OPTIMA3	090209-1
7439-89-6	Iron	65	ug/L	J		P	30	1	OPTIMA3	090209-1
7439-92-1	Lead	0.5	ug/L	U		MS	0.5	1	ICPMS5	090914-2
7439-95-4	Magnesium	8050	ug/L			P	85	1	OPTIMA3	090209-1
7439-96-5	Manganese	21.9	ug/L			P	2	1	OPTIMA3	090209-1
7439-98-7	Molybdenum	14.7	ug/L			MS	0.1	1	ICPMS5	090914-2
7440-02-0	Nickel	1.46	ug/L	J		MS	0.5	1	ICPMS5	090914-2
7440-09-7	Potassium	18200	ug/L			P	50	1	OPTIMA3	090209-1
7782-49-2	Selenium	1	ug/L	U		MS	1	1	ICPMS5	090914-2
7440-22-4	Silver	0.2	ug/L	U		MS	0.2	1	ICPMS5	090914-2
7440-23-5	Sodium	90000	ug/L			P	100	1	OPTIMA3	090209-1
7440-24-6	Strontium	49.3	ug/L			P	1	1	OPTIMA3	090209-1
7440-28-0	Thallium	0.352	ug/L	J		MS	0.3	1	ICPMS5	090914-2
7440-31-5	Tin	2.5	ug/L	U		P	2.5	1	OPTIMA3	090209-1
7440-61-1	Uranium	0.067	ug/L	J		MS	0.05	1	ICPMS5	090914-2

— Filtered —

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 09-2977 **METHOD TYPE:** EPA

SAMPLE ID: 235864004 **CLIENT ID:** SWWS46-09-12236

CONTRACT: ESHL01000

MATRIX: W **DATE RECEIVED** 22-AUG-09 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	DF	Instrument ID	Analytical Run
7440-62-2	Vanadium	10.8	ug/L			P	1	1	OPTIMA3	090209-1
7440-66-6	Zinc	71.9	ug/L			P	3.3	1	OPTIMA3	090209-1
	Hardness as CaCO3	102	mg/L				0.35	1	CALC001	

- Unfiltered -

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 09-2977 **METHOD TYPE:** EPA

SAMPLE ID: 235864005 **CLIENT ID:** SWWS46-09-12226

CONTRACT: ESHL01000

MATRIX: W **DATE RECEIVED** 22-AUG-09 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	DF	Instrument ID	Analytical Run
7439-97-6	Mercury	0.066	ug/L	U		AV	0.066	1	HG3	090209W1-5
7631-86-9	Silica	90.7	mg/L			P	0.053	1	OPTIMA3	090209-1

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Certificate of Analysis

Company : Los Alamos National Laboratory
Address : PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **LANL-WQH Water Samples**

Report Date: September 17, 2009

Client SDG: 09-2977

Client Sample ID:	SWWS46-09-12228	Project:	ESHL01000
Sample ID:	235864001	Client ID:	LANL010
Matrix:	Water		
Collect Date:	20-AUG-09 12:00		
Receive Date:	22-AUG-09		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
EPA 300.0 Chloride in Liquid "As Received"										
Chloride		13.2	0.066	0.200	mg/L	1	MAR1 09/02/09	0737	897094	1
Nutrient Analysis										
EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"										
Nitrogen, Nitrate/Nitrite		0.805	0.050	0.250	mg/L	5	AXH3 08/27/09	0931	896288	2
Nutrient Analysis Federal										
EPA 350.1 Nitrogen, Ammonia L "As Received"										
Nitrogen, Ammonia	J	0.037	0.016	0.050	mg/L	1	AXH3 09/01/09	1405	896605	3
Nitrogen, Total Kjeldahl (TKN) "As Received"										
Nitrogen, Total Kjeldahl		1.43	0.033	0.100	mg/L	1	AXH3 08/31/09	1131	896600	4
Solids Analysis Federal										
EPA 160.1 Solids, Dissolved-F "As Received"										
Total Dissolved Solids		452	2.38	10.0	mg/L		TSM 08/27/09	1102	897416	5

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	SXJ1	08/28/09	1300	896604
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	SXJ1	08/25/09	1005	896599

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 353.2	
3	EPA 350.1	
4	EPA 351.2	
5	EPA 160.1	

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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **LANL-WQH Water Samples**

Report Date: September 17, 2009

Client SDG: 09-2977

Client Sample ID:	SWWS46-09-12227	Project:	ESHL01000
Sample ID:	235864002	Client ID:	LANL010
Matrix:	Water		
Collect Date:	20-AUG-09 12:00		
Receive Date:	22-AUG-09		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
EPA 300.0 Chloride in Liquid "As Received"										
Chloride		109	0.660	2.00	mg/L	10	MAR1 09/02/09	1001	897094	1
Nutrient Analysis										
EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"										
Nitrogen, Nitrate/Nitrite		0.795	0.050	0.250	mg/L	5	AXH3 08/27/09	0934	896288	2
Nutrient Analysis Federal										
EPA 350.1 Nitrogen, Ammonia L "As Received"										
Nitrogen, Ammonia	J	0.039	0.016	0.050	mg/L	1	AXH3 09/01/09	1408	896605	3
Nitrogen, Total Kjeldahl (TKN) "As Received"										
Nitrogen, Total Kjeldahl		0.822	0.033	0.100	mg/L	1	AXH3 08/31/09	1138	896600	4
Solids Analysis Federal										
EPA 160.1 Solids, Dissolved-F "As Received"										
Total Dissolved Solids		422	2.38	10.0	mg/L		TSM 08/27/09	1102	897416	5

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	SXJ1	08/28/09	1300	896604
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	SXJ1	08/25/09	1005	896599

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 353.2	
3	EPA 350.1	
4	EPA 351.2	
5	EPA 160.1	

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Project: **LANL-WQH Water Samples**

Report Date: September 17, 2009

Client SDG: 09-2977

Client Sample ID:	SWWS46-09-12226	Project:	ESHL01000
Sample ID:	235864003	Client ID:	LANL010
Matrix:	Water		
Collect Date:	20-AUG-09 12:00		
Receive Date:	22-AUG-09		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Nutrient Analysis										
EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"										
Nitrogen, Nitrate/Nitrite		1.03	0.050	0.250	mg/L	5	AXH3 08/27/09	0936	896288	1
Nutrient Analysis Federal										
EPA 350.1 Nitrogen, Ammonia L "As Received"										
Nitrogen, Ammonia	J	0.037	0.016	0.050	mg/L	1	AXH3 09/01/09	1409	896605	2
Nitrogen, Total Kjeldahl (TKN) "As Received"										
Nitrogen, Total Kjeldahl		0.949	0.033	0.100	mg/L	1	AXH3 08/31/09	1138	896600	3

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	SXJ1	08/28/09	1300	896604
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	SXJ1	08/25/09	1005	896599

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 353.2	
2	EPA 350.1	
3	EPA 351.2	

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Contact: Ms. Joylene Valdez
Project: **LANL-WQH Water Samples**

Report Date: September 17, 2009

Client SDG: 09-2977

Client Sample ID:	SWWS46-09-12236	Project:	ESHL01000
Sample ID:	235864004	Client ID:	LANL010
Matrix:	Water		
Collect Date:	20-AUG-09 12:00		
Receive Date:	22-AUG-09		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Flow Injection Analysis										
EPA 335.4 Cyanide, Total "As Received"										
Cyanide, Total	J	2.64	1.66	5.00	ug/L	1	AXH3 08/28/09	1205	897609	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 335.4	EPA 335.4 Total Cyanide	AXS5	08/28/09	0819	897606

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 335.4	

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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **LANL-WQH Water Samples**

Report Date: September 17, 2009

Client SDG: 09-2977

Client Sample ID:	SWWS46-09-12226	Project:	ESHL01000
Sample ID:	235864005	Client ID:	LANL010
Matrix:	Water		
Collect Date:	20-AUG-09 12:00		
Receive Date:	22-AUG-09		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Conductivity Analysis Federal										
EPA120.1 Specific Conductivity "As Received"										
Conductivity		736	1.00	1.00	umhos/cm	1	EXF1 09/04/09	1523	900271	1
Electrode Analysis Federal										
EPA 150.1 pH Federal "As Received"										
pH at Temp 17.3C	H	7.68	0.010	0.100	SU	1	TXT1 08/27/09	1132	897613	2
Ion Chromatography Federal										
EPA 300.0 Anions Liquid 28 day "As Received"										
Bromide	J	0.140	0.066	0.200	mg/L	1	MAR1 09/02/09	0932	897094	3
Fluoride		0.513	0.033	0.100	mg/L	1				
Sulfate		17.2	0.100	0.400	mg/L	1				
Chloride		131	0.660	2.00	mg/L	10	MAR1 09/02/09	1030	897094	4
Solids Analysis Federal										
EPA 160.1 Solids, Dissolved-F "As Received"										
Total Dissolved Solids		482	2.38	10.0	mg/L		TSM 08/27/09	1102	897416	5
Titration Analysis Federal										
EPA 310.1 Total Alkalinity Federal "As Received"										
Alkalinity, Total as CaCO3		126	0.725	1.00	mg/L		EXF1 09/03/09	1507	899880	6
Carbonate alkalinity (CaCO3)	U	ND	0.725	1.00	mg/L					

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 120.1	
2	EPA 150.1	
3	EPA 300.0	
4	EPA 300.0	
5	EPA 160.1	
6	EPA 310.1	

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Los Alamos National Laboratory
Address : PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm
Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: LANL-WQH Water Samples

Report Date: September 18, 2009

Client Sample ID:	SWWS46-09-12226	Project:	ESHL01000
Sample ID:	235864005	Client ID:	LANL010
Matrix:	Water		
Collect Date:	20-AUG-09		
Receive Date:	22-AUG-09		
Collector:	Client		

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date Time	Batch	Mtd.
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, liquid "As Received"											
Alpha	U	0.993	2.98	+/-0.868	3.00	pCi/L		DXF3	09/15/09 1733	898706	1
GFPC, Ra228, Liquid "As Received"											
Radium-228	U	0.623	1.35	+/-0.415	1.00	pCi/L		JXC5	09/18/09 0809	898642	3
Rad Radium-226											
Lucas Cell, Ra226, liquid "As Received"											
Radium-226	U	0.373	0.548	+/-0.187	1.00	pCi/L		KSD1	09/17/09 1715	901544	4

The following Analytical Methods were performed

Method	Description
1	EPA 900.0
2	EPA 900.0
3	EPA 904.0/SW846 9320 Modified
4	EPA 903.1 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Receive	69.5	(50%-105%)

Notes:
TPU is calculated at the 67% confidence level (1-sigma).
The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Metals--%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value

Certificate of Analysis

Company : Los Alamos National Laboratory
Address : PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm
Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: LANL-WQH Water Samples

Report Date: September 18, 2009

Client Sample ID: SWWS46-09-12226
Sample ID: 235864005
Project: ESHL01000
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst Date	Time Batch	Mtd.

H Analytical holding time was exceeded
J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
P Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, difference is also <70%
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
d 5-day BOD--The 2:1 depletion requirement was not met for this sample
h Preparation or preservation holding time was exceeded
The above sample is reported on an "as received" basis.

ENCLOSURE 4.0

General Engineering Laboratories Analytical Reports

CDBO-6

Annual Monitoring 2009:
Metals
Radiologicals
General Chemistry
VOC
SVOC
PCBs
Pesticides

Los Alamos
National Laboratory

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414001	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9478	Method:	SW846 8260B DOE-AL	SOP Ref:	GL-OA-E-038
Batch ID:	896942	Inst:	VOA9.I	Dilution:	1
Run Date:	08/25/2009 14:58	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	08/25/2009 14:58				
Data File:	9z214.d	Column:	RTX-Volatiles	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.500	1.00
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
67-64-1	Acetone	U	10.0	ug/L	3.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	6.25	25.0
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.25	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	3.00	10.0
75-15-0	Carbon disulfide	U	5.00	ug/L	1.25	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.250	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.25	5.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.250	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.325	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.250	1.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.250	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.250	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.250	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.250	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.25	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
108-88-3	Toluene	U	1.00	ug/L	0.250	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.250	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.25	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414001	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9478	Method:	SW846 8260B DOE-AL	SOP Ref:	GL-OA-E-038
Batch ID:	896942	Inst:	VOA9.I	Dilution:	1
Run Date:	08/25/2009 14:58	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	08/25/2009 14:58				
Data File:	9z214.d	Column:	RTX-Volatiles	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.250	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.250	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.250	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.500	2.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
100-42-5	Styrene	U	1.00	ug/L	0.250	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.250	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.250	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.250	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.250	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.250	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.250	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.250	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.250	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.250	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	U	1.00	ug/L	0.250	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.332	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.25	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.00	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.00	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.00	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	12.5	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.00	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414001	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9478	Method:	SW846 8260B DOE-AL	SOP Ref:	GL-OA-E-038
Batch ID:	896942	Inst:	VOA9.I	Dilution:	1
Run Date:	08/25/2009 14:58	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	08/25/2009 14:58				
Data File:	9z214.d	Column:	RTX-Volatiles	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.00	5.00
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.250	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	53.8	50.0	ug/L	108	(59%-130%)
Bromofluorobenzene	52.8	50.0	ug/L	106	(71%-126%)
Toluene-d8	52.8	50.0	ug/L	106	(76%-129%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	No Tentatively Identified Compounds Found			ug/L		

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414006	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9479	Method:	SW846 8260B DOE-AL	SOP Ref:	GL-OA-E-038
Batch ID:	896942	Inst:	VOA9.I	Dilution:	1
Run Date:	08/25/2009 15:26	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	08/25/2009 15:26				
Data File:	9z215.d	Column:	RTX-Volatiles	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.500	1.00
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
67-64-1	Acetone	U	10.0	ug/L	3.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	6.25	25.0
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.25	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	3.00	10.0
75-15-0	Carbon disulfide	U	5.00	ug/L	1.25	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.250	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.25	5.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.250	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.325	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.250	1.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.250	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.250	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.250	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.250	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.25	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
108-88-3	Toluene	U	1.00	ug/L	0.250	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.250	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.25	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414006	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9479	Method:	SW846 8260B DOE-AL	SOP Ref:	GL-OA-E-038
Batch ID:	896942	Inst:	VOA9.I	Dilution:	1
Run Date:	08/25/2009 15:26	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	08/25/2009 15:26				
Data File:	9z215.d	Column:	RTX-Volatiles	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.250	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.250	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.250	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.500	2.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
100-42-5	Styrene	U	1.00	ug/L	0.250	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.250	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.250	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.250	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.250	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.250	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.250	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.250	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.250	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.250	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	U	1.00	ug/L	0.250	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.332	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.25	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.00	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.00	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.00	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	12.5	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.00	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414006	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9479	Method:	SW846 8260B DOE-AL	SOP Ref:	GL-OA-E-038
Batch ID:	896942	Inst:	VOA9.I	Dilution:	1
Run Date:	08/25/2009 15:26	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	08/25/2009 15:26				
Data File:	9z215.d	Column:	RTX-Volatiles	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.00	5.00
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.250	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	54.6	50.0	ug/L	109	(59%-130%)
Bromofluorobenzene	53.7	50.0	ug/L	107	(71%-126%)
Toluene-d8	52.9	50.0	ug/L	106	(76%-129%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	No Tentatively Identified Compounds Found			ug/L		

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414007	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9481	Method:	SW846 8260B DOE-AL	SOP Ref:	GL-OA-E-038
Batch ID:	896942	Inst:	VOA9.I	Dilution:	1
Run Date:	08/25/2009 15:53	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	08/25/2009 15:53				
Data File:	9z216.d	Column:	RTX-Volatiles	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	J	0.382	ug/L	0.300	1.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.500	1.00
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
67-64-1	Acetone	U	10.0	ug/L	3.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	6.25	25.0
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.25	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	3.00	10.0
75-15-0	Carbon disulfide	U	5.00	ug/L	1.25	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.250	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.25	5.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.250	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.325	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.250	1.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.250	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.250	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.250	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.250	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.25	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
108-88-3	Toluene	U	1.00	ug/L	0.250	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.250	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.25	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414007	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9481	Method:	SW846 8260B DOE-AL	SOP Ref:	GL-OA-E-038
Batch ID:	896942	Inst:	VOA9.I	Dilution:	1
Run Date:	08/25/2009 15:53	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	08/25/2009 15:53				
Data File:	9z216.d	Column:	RTX-Volatiles	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.250	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.250	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.250	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.500	2.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
100-42-5	Styrene	U	1.00	ug/L	0.250	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.250	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.250	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.250	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.250	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.250	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.250	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.250	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.250	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.250	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	U	1.00	ug/L	0.250	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.332	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.25	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.00	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.00	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.00	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	12.5	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.00	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414007	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9481	Method:	SW846 8260B DOE-AL	SOP Ref:	GL-OA-E-038
Batch ID:	896942	Inst:	VOA9.I	Dilution:	1
Run Date:	08/25/2009 15:53	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	08/25/2009 15:53				
Data File:	9z216.d	Column:	RTX-Volatiles	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.00	5.00
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.250	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	52.8	50.0	ug/L	106	(59%-130%)
Bromofluorobenzene	52.6	50.0	ug/L	105	(71%-126%)
Toluene-d8	52.7	50.0	ug/L	105	(76%-129%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	Unknown	4.52	5.56	ug/L		J

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414008	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9482	Method:	SW846 8260B DOE-AL	SOP Ref:	GL-OA-E-038
Batch ID:	896942	Inst:	VOA9.I	Dilution:	1
Run Date:	08/25/2009 16:21	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	08/25/2009 16:21				
Data File:	9z217.d	Column:	RTX-Volatiles	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.500	1.00
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
67-64-1	Acetone	U	10.0	ug/L	3.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	6.25	25.0
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.25	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	3.00	10.0
75-15-0	Carbon disulfide	U	5.00	ug/L	1.25	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.250	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.25	5.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.250	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.325	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.250	1.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.250	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.250	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.250	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.250	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.25	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
108-88-3	Toluene	J	0.336	ug/L	0.250	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.250	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.25	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414008	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9482	Method:	SW846 8260B DOE-AL	SOP Ref:	GL-OA-E-038
Batch ID:	896942	Inst:	VOA9.I	Dilution:	1
Run Date:	08/25/2009 16:21	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	08/25/2009 16:21				
Data File:	9z217.d	Column:	RTX-Volatiles	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.250	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.250	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.250	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.500	2.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
100-42-5	Styrene	U	1.00	ug/L	0.250	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.250	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.250	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.250	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.250	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.250	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.250	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.250	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.250	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.250	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	U	1.00	ug/L	0.250	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.332	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.25	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.00	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.00	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.00	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	12.5	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.00	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414008	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9482	Method:	SW846 8260B DOE-AL	SOP Ref:	GL-OA-E-038
Batch ID:	896942	Inst:	VOA9.I	Dilution:	1
Run Date:	08/25/2009 16:21	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	08/25/2009 16:21				
Data File:	9z217.d	Column:	RTX-Volatiles	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.00	5.00
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.250	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	52.4	50.0	ug/L	105	(59%-130%)
Bromofluorobenzene	52.9	50.0	ug/L	106	(71%-126%)
Toluene-d8	52.6	50.0	ug/L	105	(76%-129%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	No Tentatively Identified Compounds Found			ug/L		

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414001	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9478	Method:	SW846 8270C	SOP Ref:	GL-OA-E-009
Batch ID:	895758	Inst:	MSD4.I	Dilution:	1
Run Date:	08/30/2009 19:56	Analyst:	JMB3	Inj. Vol:	.5 uL
Prep Date:	08/21/2009 14:19	Aliquot:	930 mL	Final Volume:	1 mL
Data File:	s4h3017.d	Column:	J&W DB-5MS	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
62-75-9	N-Methyl-N-nitrosomethylamine	U	10.8	ug/L	2.15	10.8
108-95-2	Phenol	U	10.8	ug/L	1.08	10.8
95-57-8	2-Chlorophenol	U	10.8	ug/L	2.15	10.8
106-46-7	1,4-Dichlorobenzene	U	10.8	ug/L	2.15	10.8
621-64-7	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*	U	10.8	ug/L	2.15	10.8
59-50-7	Parachlorometa cresol *4-Chloro-3-methylphenol*	U	10.8	ug/L	2.15	10.8
83-32-9	Acenaphthene	U	1.08	ug/L	0.333	1.08
121-14-2	2,4-Dinitrotoluene	U	10.8	ug/L	2.15	10.8
100-02-7	4-Nitrophenol	U	10.8	ug/L	2.15	10.8
87-86-5	Pentachlorophenol	U	10.8	ug/L	2.15	10.8
129-00-0	Pyrene	U	1.08	ug/L	0.323	1.08
110-86-1	Pyridine	U	10.8	ug/L	3.23	10.8
62-53-3	Aniline	U	10.8	ug/L	2.69	10.8
111-44-4	bis(2-Chloroethyl) ether	U	10.8	ug/L	2.15	10.8
541-73-1	1,3-Dichlorobenzene	U	10.8	ug/L	2.15	10.8
100-51-6	Benzyl alcohol	U	10.8	ug/L	2.15	10.8
95-50-1	1,2-Dichlorobenzene	U	10.8	ug/L	2.15	10.8
108-60-1	bis(2-Chloroisopropyl)ether	U	10.8	ug/L	2.15	10.8
95-48-7	o-Cresol	U	10.8	ug/L	2.15	10.8
65794-96-9	m,p-Cresols	U	10.8	ug/L	3.23	10.8
67-72-1	Hexachloroethane	U	10.8	ug/L	2.15	10.8
98-95-3	Nitrobenzene	U	10.8	ug/L	3.23	10.8
78-59-1	Isophorone	U	10.8	ug/L	3.23	10.8
88-75-5	2-Nitrophenol	U	10.8	ug/L	2.15	10.8
105-67-9	2,4-Dimethylphenol	U	10.8	ug/L	2.15	10.8
111-91-1	bis(2-Chloroethoxy)methane	U	10.8	ug/L	3.23	10.8
120-83-2	2,4-Dichlorophenol	U	10.8	ug/L	2.15	10.8
65-85-0	Benzoic acid	U	21.5	ug/L	6.45	21.5
91-20-3	Naphthalene	U	1.08	ug/L	0.323	1.08
106-47-8	4-Chloroaniline	U	10.8	ug/L	2.15	10.8
87-68-3	Hexachlorobutadiene	U	10.8	ug/L	2.15	10.8
91-57-6	2-Methylnaphthalene	U	1.08	ug/L	0.323	1.08
90-12-0	1-Methylnaphthalene	U	1.08	ug/L	0.323	1.08
77-47-4	Hexachlorocyclopentadiene	U	10.8	ug/L	3.23	10.8
88-06-2	2,4,6-Trichlorophenol	U	10.8	ug/L	2.15	10.8
95-95-4	2,4,5-Trichlorophenol	U	10.8	ug/L	2.15	10.8
91-58-7	2-Chloronaphthalene	U	1.08	ug/L	0.323	1.08

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414001	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9478	Method:	SW846 8270C	SOP Ref:	GL-OA-E-009
Batch ID:	895758	Inst:	MSD4.I	Dilution:	1
Run Date:	08/30/2009 19:56	Analyst:	JMB3	Inj. Vol:	.5 uL
Prep Date:	08/21/2009 14:19	Aliquot:	930 mL	Final Volume:	1 mL
Data File:	s4h3017.d	Column:	J&W DB-5MS	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
88-74-4	2-Nitroaniline	U	10.8	ug/L	2.15	10.8
	o-Nitroaniline					
99-09-2	3-Nitroaniline	U	10.8	ug/L	2.15	10.8
	m-Nitroaniline					
131-11-3	Dimethylphthalate	U	10.8	ug/L	2.15	10.8
606-20-2	2,6-Dinitrotoluene	U	10.8	ug/L	2.15	10.8
208-96-8	Acenaphthylene	U	1.08	ug/L	0.215	1.08
51-28-5	2,4-Dinitrophenol	U	21.5	ug/L	5.38	21.5
132-64-9	Dibenzofuran	U	10.8	ug/L	2.15	10.8
84-66-2	Diethylphthalate	U	10.8	ug/L	2.15	10.8
86-73-7	Fluorene	U	1.08	ug/L	0.215	1.08
7005-72-3	4-Chlorophenylphenylether	U	10.8	ug/L	2.15	10.8
534-52-1	2-Methyl-4,6-dinitrophenol	U	10.8	ug/L	3.23	10.8
100-01-6	4-Nitroaniline	U	10.8	ug/L	3.23	10.8
	p-Nitroaniline					
122-39-4	Diphenylamine	U	10.8	ug/L	3.23	10.8
122-66-7	Azobenzene	U	10.8	ug/L	2.15	10.8
	1,2-Diphenylhydrazine					
101-55-3	4-Bromophenylphenylether	U	10.8	ug/L	2.15	10.8
118-74-1	Hexachlorobenzene	U	10.8	ug/L	2.15	10.8
1912-24-9	Atrazine	U	10.8	ug/L	3.23	10.8
85-01-8	Phenanthrene	U	1.08	ug/L	0.215	1.08
120-12-7	Anthracene	U	1.08	ug/L	0.215	1.08
84-74-2	Di-n-butylphthalate	U	10.8	ug/L	2.15	10.8
206-44-0	Fluoranthene	U	1.08	ug/L	0.215	1.08
92-87-5	Benzidine	U	10.8	ug/L	3.23	10.8
85-68-7	Butylbenzylphthalate	U	10.8	ug/L	2.15	10.8
56-55-3	Benzo(a)anthracene	U	1.08	ug/L	0.215	1.08
91-94-1	3,3'-Dichlorobenzidine	U	10.8	ug/L	2.15	10.8
218-01-9	Chrysene	U	1.08	ug/L	0.215	1.08
117-81-7	bis(2-Ethylhexyl)phthalate	U	10.8	ug/L	2.15	10.8
117-84-0	Di-n-octylphthalate	U	10.8	ug/L	3.23	10.8
205-99-2	Benzo(b)fluoranthene	U	1.08	ug/L	0.215	1.08
207-08-9	Benzo(k)fluoranthene	U	1.08	ug/L	0.215	1.08
50-32-8	Benzo(a)pyrene	U	1.08	ug/L	0.215	1.08
193-39-5	Indeno(1,2,3-cd)pyrene	U	1.08	ug/L	0.215	1.08
53-70-3	Dibenzo(a,h)anthracene	U	1.08	ug/L	0.215	1.08
191-24-2	Benzo(ghi)perylene	U	1.08	ug/L	0.215	1.08
123-91-1	1,4-Dioxane	U	10.8	ug/L	2.15	10.8
55-18-5	N-Nitrosodiethylamine	U	10.8	ug/L	2.15	10.8

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414001	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9478	Method:	SW846 8270C	SOP Ref:	GL-OA-E-009
Batch ID:	895758	Inst:	MSD4.I	Dilution:	1
Run Date:	08/30/2009 19:56	Analyst:	JMB3	Inj. Vol:	.5 uL
Prep Date:	08/21/2009 14:19	Aliquot:	930 mL	Final Volume:	1 mL
Data File:	s4h3017.d	Column:	J&W DB-5MS	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
930-55-2	N-Nitrosopyrrolidine	U	10.8	ug/L	2.15	10.8
924-16-3	N-Nitrosodi-n-butylamine	U	10.8	ug/L	3.23	10.8
95-94-3	1,2,4,5-Tetrachlorobenzene	U	10.8	ug/L	3.23	10.8
608-93-5	Pentachlorobenzene	U	10.8	ug/L	3.23	10.8
58-90-2	2,3,4,6-Tetrachlorophenol	U	10.8	ug/L	2.15	10.8
88-85-7	Dinoseb	U	10.8	ug/L	2.15	10.8
120-82-1	1,2,4-Trichlorobenzene	U	10.8	ug/L	2.15	10.8

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
2,4,6-Tribromophenol	56.2	108	ug/L	52.3	(39%-115%)
2-Fluorobiphenyl	33.5	53.8	ug/L	62.3	(35%-100%)
2-Fluorophenol	42.7	108	ug/L	39.7	(25%-92%)
Nitrobenzene-d5	39.0	53.8	ug/L	72.5	(40%-112%)
Phenol-d5	34.4	108	ug/L	31.9	(15%-73%)
p-Terphenyl-d14	42.7	53.8	ug/L	79.4	(46%-130%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	No Tentatively Identified Compounds Found			ug/L		

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414007	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9481	Method:	SW846 8270C	SOP Ref:	GL-OA-E-009
Batch ID:	895758	Inst:	MSD4.I	Dilution:	1
Run Date:	08/30/2009 20:17	Analyst:	JMB3	Inj. Vol:	.5 uL
Prep Date:	08/21/2009 14:19	Aliquot:	930 mL	Final Volume:	1 mL
Data File:	s4h3018.d	Column:	J&W DB-5MS	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
62-75-9	N-Methyl-N-nitrosomethylamine	U	10.8	ug/L	2.15	10.8
108-95-2	Phenol	U	10.8	ug/L	1.08	10.8
95-57-8	2-Chlorophenol	U	10.8	ug/L	2.15	10.8
106-46-7	1,4-Dichlorobenzene	U	10.8	ug/L	2.15	10.8
621-64-7	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*	U	10.8	ug/L	2.15	10.8
59-50-7	Parachlorometa cresol *4-Chloro-3-methylphenol*	U	10.8	ug/L	2.15	10.8
83-32-9	Acenaphthene	U	1.08	ug/L	0.333	1.08
121-14-2	2,4-Dinitrotoluene	U	10.8	ug/L	2.15	10.8
100-02-7	4-Nitrophenol	U	10.8	ug/L	2.15	10.8
87-86-5	Pentachlorophenol	U	10.8	ug/L	2.15	10.8
129-00-0	Pyrene	U	1.08	ug/L	0.323	1.08
110-86-1	Pyridine	U	10.8	ug/L	3.23	10.8
62-53-3	Aniline	U	10.8	ug/L	2.69	10.8
111-44-4	bis(2-Chloroethyl) ether	U	10.8	ug/L	2.15	10.8
541-73-1	1,3-Dichlorobenzene	U	10.8	ug/L	2.15	10.8
100-51-6	Benzyl alcohol	U	10.8	ug/L	2.15	10.8
95-50-1	1,2-Dichlorobenzene	U	10.8	ug/L	2.15	10.8
108-60-1	bis(2-Chloroisopropyl)ether	U	10.8	ug/L	2.15	10.8
95-48-7	o-Cresol	U	10.8	ug/L	2.15	10.8
65794-96-9	m,p-Cresols	U	10.8	ug/L	3.23	10.8
67-72-1	Hexachloroethane	U	10.8	ug/L	2.15	10.8
98-95-3	Nitrobenzene	U	10.8	ug/L	3.23	10.8
78-59-1	Isophorone	U	10.8	ug/L	3.23	10.8
88-75-5	2-Nitrophenol	U	10.8	ug/L	2.15	10.8
105-67-9	2,4-Dimethylphenol	U	10.8	ug/L	2.15	10.8
111-91-1	bis(2-Chloroethoxy)methane	U	10.8	ug/L	3.23	10.8
120-83-2	2,4-Dichlorophenol	U	10.8	ug/L	2.15	10.8
65-85-0	Benzoic acid	U	21.5	ug/L	6.45	21.5
91-20-3	Naphthalene	U	1.08	ug/L	0.323	1.08
106-47-8	4-Chloroaniline	U	10.8	ug/L	2.15	10.8
87-68-3	Hexachlorobutadiene	U	10.8	ug/L	2.15	10.8
91-57-6	2-Methylnaphthalene	U	1.08	ug/L	0.323	1.08
90-12-0	1-Methylnaphthalene	U	1.08	ug/L	0.323	1.08
77-47-4	Hexachlorocyclopentadiene	U	10.8	ug/L	3.23	10.8
88-06-2	2,4,6-Trichlorophenol	U	10.8	ug/L	2.15	10.8
95-95-4	2,4,5-Trichlorophenol	U	10.8	ug/L	2.15	10.8
91-58-7	2-Chloronaphthalene	U	1.08	ug/L	0.323	1.08

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414007	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9481	Method:	SW846 8270C	SOP Ref:	GL-OA-E-009
Batch ID:	895758	Inst:	MSD4.I	Dilution:	1
Run Date:	08/30/2009 20:17	Analyst:	JMB3	Inj. Vol:	.5 uL
Prep Date:	08/21/2009 14:19	Aliquot:	930 mL	Final Volume:	1 mL
Data File:	s4h3018.d	Column:	J&W DB-5MS	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
88-74-4	2-Nitroaniline *o-Nitroaniline*	U	10.8	ug/L	2.15	10.8
99-09-2	3-Nitroaniline *m-Nitroaniline*	U	10.8	ug/L	2.15	10.8
131-11-3	Dimethylphthalate	U	10.8	ug/L	2.15	10.8
606-20-2	2,6-Dinitrotoluene	U	10.8	ug/L	2.15	10.8
208-96-8	Acenaphthylene	U	1.08	ug/L	0.215	1.08
51-28-5	2,4-Dinitrophenol	U	21.5	ug/L	5.38	21.5
132-64-9	Dibenzofuran	U	10.8	ug/L	2.15	10.8
84-66-2	Diethylphthalate	U	10.8	ug/L	2.15	10.8
86-73-7	Fluorene	U	1.08	ug/L	0.215	1.08
7005-72-3	4-Chlorophenylphenylether	U	10.8	ug/L	2.15	10.8
534-52-1	2-Methyl-4,6-dinitrophenol	U	10.8	ug/L	3.23	10.8
100-01-6	4-Nitroaniline *p-Nitroaniline*	U	10.8	ug/L	3.23	10.8
122-39-4	Diphenylamine	U	10.8	ug/L	3.23	10.8
122-66-7	Azobenzene *1,2-Diphenylhydrazine*	U	10.8	ug/L	2.15	10.8
101-55-3	4-Bromophenylphenylether	U	10.8	ug/L	2.15	10.8
118-74-1	Hexachlorobenzene	U	10.8	ug/L	2.15	10.8
1912-24-9	Atrazine	U	10.8	ug/L	3.23	10.8
85-01-8	Phenanthrene	U	1.08	ug/L	0.215	1.08
120-12-7	Anthracene	U	1.08	ug/L	0.215	1.08
84-74-2	Di-n-butylphthalate	U	10.8	ug/L	2.15	10.8
206-44-0	Fluoranthene	U	1.08	ug/L	0.215	1.08
92-87-5	Benzidine	U	10.8	ug/L	3.23	10.8
85-68-7	Butylbenzylphthalate	U	10.8	ug/L	2.15	10.8
56-55-3	Benzo(a)anthracene	U	1.08	ug/L	0.215	1.08
91-94-1	3,3'-Dichlorobenzidine	U	10.8	ug/L	2.15	10.8
218-01-9	Chrysene	U	1.08	ug/L	0.215	1.08
117-81-7	bis(2-Ethylhexyl)phthalate	U	10.8	ug/L	2.15	10.8
117-84-0	Di-n-octylphthalate	U	10.8	ug/L	3.23	10.8
205-99-2	Benzo(b)fluoranthene	U	1.08	ug/L	0.215	1.08
207-08-9	Benzo(k)fluoranthene	U	1.08	ug/L	0.215	1.08
50-32-8	Benzo(a)pyrene	U	1.08	ug/L	0.215	1.08
193-39-5	Indeno(1,2,3-cd)pyrene	U	1.08	ug/L	0.215	1.08
53-70-3	Dibenzo(a,h)anthracene	U	1.08	ug/L	0.215	1.08
191-24-2	Benzo(ghi)perylene	U	1.08	ug/L	0.215	1.08
123-91-1	1,4-Dioxane	U	10.8	ug/L	2.15	10.8
55-18-5	N-Nitrosodiethylamine	U	10.8	ug/L	2.15	10.8

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414007	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9481	Method:	SW846 8270C	SOP Ref:	GL-OA-E-009
Batch ID:	895758	Inst:	MSD4.I	Dilution:	1
Run Date:	08/30/2009 20:17	Analyst:	JMB3	Inj. Vol:	.5 uL
Prep Date:	08/21/2009 14:19	Aliquot:	930 mL	Final Volume:	1 mL
Data File:	s4h3018.d	Column:	J&W DB-5MS	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
930-55-2	N-Nitrosopyrrolidine	U	10.8	ug/L	2.15	10.8
924-16-3	N-Nitrosodi-n-butylamine	U	10.8	ug/L	3.23	10.8
95-94-3	1,2,4,5-Tetrachlorobenzene	U	10.8	ug/L	3.23	10.8
608-93-5	Pentachlorobenzene	U	10.8	ug/L	3.23	10.8
58-90-2	2,3,4,6-Tetrachlorophenol	U	10.8	ug/L	2.15	10.8
88-85-7	Dinoseb	U	10.8	ug/L	2.15	10.8
120-82-1	1,2,4-Trichlorobenzene	U	10.8	ug/L	2.15	10.8

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
2,4,6-Tribromophenol	61.2	108	ug/L	56.9	(39%-115%)
2-Fluorobiphenyl	38.8	53.8	ug/L	72.1	(35%-100%)
2-Fluorophenol	43.8	108	ug/L	40.8	(25%-92%)
Nitrobenzene-d5	44.1	53.8	ug/L	82.1	(40%-112%)
Phenol-d5	36.9	108	ug/L	34.3	(15%-73%)
p-Terphenyl-d14	41.9	53.8	ug/L	77.9	(46%-130%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	No Tentatively Identified Compounds Found			ug/L		

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414008	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9482	Method:	SW846 8270C	SOP Ref:	GL-OA-E-009
Batch ID:	895758	Inst:	MSD4.I	Dilution:	1
Run Date:	08/30/2009 20:38	Analyst:	JMB3	Inj. Vol:	.5 uL
Prep Date:	08/21/2009 14:19	Aliquot:	890 mL	Final Volume:	1 mL
Data File:	s4h3019.d	Column:	J&W DB-5MS	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
62-75-9	N-Methyl-N-nitrosomethylamine	U	11.2	ug/L	2.25	11.2
108-95-2	Phenol	U	11.2	ug/L	1.12	11.2
95-57-8	2-Chlorophenol	U	11.2	ug/L	2.25	11.2
106-46-7	1,4-Dichlorobenzene	U	11.2	ug/L	2.25	11.2
621-64-7	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*	U	11.2	ug/L	2.25	11.2
59-50-7	Parachlorometa cresol *4-Chloro-3-methylphenol*	U	11.2	ug/L	2.25	11.2
83-32-9	Acenaphthene	U	1.12	ug/L	0.348	1.12
121-14-2	2,4-Dinitrotoluene	U	11.2	ug/L	2.25	11.2
100-02-7	4-Nitrophenol	U	11.2	ug/L	2.25	11.2
87-86-5	Pentachlorophenol	U	11.2	ug/L	2.25	11.2
129-00-0	Pyrene	U	1.12	ug/L	0.337	1.12
110-86-1	Pyridine	U	11.2	ug/L	3.37	11.2
62-53-3	Aniline	U	11.2	ug/L	2.81	11.2
111-44-4	bis(2-Chloroethyl) ether	U	11.2	ug/L	2.25	11.2
541-73-1	1,3-Dichlorobenzene	U	11.2	ug/L	2.25	11.2
100-51-6	Benzyl alcohol	U	11.2	ug/L	2.25	11.2
95-50-1	1,2-Dichlorobenzene	U	11.2	ug/L	2.25	11.2
108-60-1	bis(2-Chloroisopropyl)ether	U	11.2	ug/L	2.25	11.2
95-48-7	o-Cresol	U	11.2	ug/L	2.25	11.2
65794-96-9	m,p-Cresols	U	11.2	ug/L	3.37	11.2
67-72-1	Hexachloroethane	U	11.2	ug/L	2.25	11.2
98-95-3	Nitrobenzene	U	11.2	ug/L	3.37	11.2
78-59-1	Isophorone	U	11.2	ug/L	3.37	11.2
88-75-5	2-Nitrophenol	U	11.2	ug/L	2.25	11.2
105-67-9	2,4-Dimethylphenol	U	11.2	ug/L	2.25	11.2
111-91-1	bis(2-Chloroethoxy)methane	U	11.2	ug/L	3.37	11.2
120-83-2	2,4-Dichlorophenol	U	11.2	ug/L	2.25	11.2
65-85-0	Benzoic acid	U	22.5	ug/L	6.74	22.5
91-20-3	Naphthalene	U	1.12	ug/L	0.337	1.12
106-47-8	4-Chloroaniline	U	11.2	ug/L	2.25	11.2
87-68-3	Hexachlorobutadiene	U	11.2	ug/L	2.25	11.2
91-57-6	2-Methylnaphthalene	U	1.12	ug/L	0.337	1.12
90-12-0	1-Methylnaphthalene	U	1.12	ug/L	0.337	1.12
77-47-4	Hexachlorocyclopentadiene	U	11.2	ug/L	3.37	11.2
88-06-2	2,4,6-Trichlorophenol	U	11.2	ug/L	2.25	11.2
95-95-4	2,4,5-Trichlorophenol	U	11.2	ug/L	2.25	11.2
91-58-7	2-Chloronaphthalene	U	1.12	ug/L	0.337	1.12

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414008	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9482	Method:	SW846 8270C	SOP Ref:	GL-OA-E-009
Batch ID:	895758	Inst:	MSD4.I	Dilution:	1
Run Date:	08/30/2009 20:38	Analyst:	JMB3	Inj. Vol:	.5 uL
Prep Date:	08/21/2009 14:19	Aliquot:	890 mL	Final Volume:	1 mL
Data File:	s4h3019.d	Column:	J&W DB-5MS	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
88-74-4	2-Nitroaniline *o-Nitroaniline*	U	11.2	ug/L	2.25	11.2
99-09-2	3-Nitroaniline *m-Nitroaniline*	U	11.2	ug/L	2.25	11.2
131-11-3	Dimethylphthalate	U	11.2	ug/L	2.25	11.2
606-20-2	2,6-Dinitrotoluene	U	11.2	ug/L	2.25	11.2
208-96-8	Acenaphthylene	U	1.12	ug/L	0.225	1.12
51-28-5	2,4-Dinitrophenol	U	22.5	ug/L	5.62	22.5
132-64-9	Dibenzofuran	U	11.2	ug/L	2.25	11.2
84-66-2	Diethylphthalate	U	11.2	ug/L	2.25	11.2
86-73-7	Fluorene	U	1.12	ug/L	0.225	1.12
7005-72-3	4-Chlorophenylphenylether	U	11.2	ug/L	2.25	11.2
534-52-1	2-Methyl-4,6-dinitrophenol	U	11.2	ug/L	3.37	11.2
100-01-6	4-Nitroaniline *p-Nitroaniline*	U	11.2	ug/L	3.37	11.2
122-39-4	Diphenylamine	U	11.2	ug/L	3.37	11.2
122-66-7	Azobenzene *1,2-Diphenylhydrazine*	U	11.2	ug/L	2.25	11.2
101-55-3	4-Bromophenylphenylether	U	11.2	ug/L	2.25	11.2
118-74-1	Hexachlorobenzene	U	11.2	ug/L	2.25	11.2
1912-24-9	Atrazine	U	11.2	ug/L	3.37	11.2
85-01-8	Phenanthrene	U	1.12	ug/L	0.225	1.12
120-12-7	Anthracene	U	1.12	ug/L	0.225	1.12
84-74-2	Di-n-butylphthalate	U	11.2	ug/L	2.25	11.2
206-44-0	Fluoranthene	U	1.12	ug/L	0.225	1.12
92-87-5	Benzidine	U	11.2	ug/L	3.37	11.2
85-68-7	Butylbenzylphthalate	U	11.2	ug/L	2.25	11.2
56-55-3	Benzo(a)anthracene	U	1.12	ug/L	0.225	1.12
91-94-1	3,3'-Dichlorobenzidine	U	11.2	ug/L	2.25	11.2
218-01-9	Chrysene	U	1.12	ug/L	0.225	1.12
117-81-7	bis(2-Ethylhexyl)phthalate	U	11.2	ug/L	2.25	11.2
117-84-0	Di-n-octylphthalate	U	11.2	ug/L	3.37	11.2
205-99-2	Benzo(b)fluoranthene	U	1.12	ug/L	0.225	1.12
207-08-9	Benzo(k)fluoranthene	U	1.12	ug/L	0.225	1.12
50-32-8	Benzo(a)pyrene	U	1.12	ug/L	0.225	1.12
193-39-5	Indeno(1,2,3-cd)pyrene	U	1.12	ug/L	0.225	1.12
53-70-3	Dibenzo(a,h)anthracene	U	1.12	ug/L	0.225	1.12
191-24-2	Benzo(ghi)perylene	U	1.12	ug/L	0.225	1.12
123-91-1	1,4-Dioxane	U	11.2	ug/L	2.25	11.2
55-18-5	N-Nitrosodiethylamine	U	11.2	ug/L	2.25	11.2

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414008	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9482	Method:	SW846 8270C	SOP Ref:	GL-OA-E-009
Batch ID:	895758	Inst:	MSD4.I	Dilution:	1
Run Date:	08/30/2009 20:38	Analyst:	JMB3	Inj. Vol:	.5 uL
Prep Date:	08/21/2009 14:19	Aliquot:	890 mL	Final Volume:	1 mL
Data File:	s4h3019.d	Column:	J&W DB-5MS	Level:	LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
930-55-2	N-Nitrosopyrrolidine	U	11.2	ug/L	2.25	11.2
924-16-3	N-Nitrosodi-n-butylamine	U	11.2	ug/L	3.37	11.2
95-94-3	1,2,4,5-Tetrachlorobenzene	U	11.2	ug/L	3.37	11.2
608-93-5	Pentachlorobenzene	U	11.2	ug/L	3.37	11.2
58-90-2	2,3,4,6-Tetrachlorophenol	U	11.2	ug/L	2.25	11.2
88-85-7	Dinoseb	U	11.2	ug/L	2.25	11.2
120-82-1	1,2,4-Trichlorobenzene	U	11.2	ug/L	2.25	11.2

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
2,4,6-Tribromophenol	64.1	112	ug/L	57.1	(39%-115%)
2-Fluorobiphenyl	34.6	56.2	ug/L	61.6	(35%-100%)
2-Fluorophenol	36.1	112	ug/L	32.2	(25%-92%)
Nitrobenzene-d5	40.3	56.2	ug/L	71.8	(40%-112%)
Phenol-d5	35.1	112	ug/L	31.2	(15%-73%)
p-Terphenyl-d14	44.6	56.2	ug/L	79.4	(46%-130%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	No Tentatively Identified Compounds Found			ug/L		

Pesticide
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414004	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9478	Method:	SW846 8081A	SOP Ref:	GL-OA-E-041
Batch ID:	895761	Inst:	ECD7A.I	Dilution:	1
Run Date:	08/25/2009 12:32	Analyst:	JXM	Inj. Vol:	1 uL
Prep Date:	08/21/2009 15:14	Aliquot:	900 mL	Final Volume:	5 mL
Data File:	019f1901.d	Column:	1 CLP-1	Level:	LOW
	019b1901.d		2 CLP-2		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
319-84-6	alpha-BHC	U	0.0222	ug/L	0.00556	0.0222	1
58-89-9	gamma-BHC (Lindane)	U	0.0222	ug/L	0.00556	0.0222	1
319-85-7	beta-BHC	U	0.0222	ug/L	0.00667	0.0222	1
319-86-8	delta-BHC	U	0.0222	ug/L	0.00556	0.0222	1
76-44-8	Heptachlor	U	0.0222	ug/L	0.00556	0.0222	1
309-00-2	Aldrin	U	0.0222	ug/L	0.00556	0.0222	1
1024-57-3	Heptachlor epoxide	U	0.0222	ug/L	0.00556	0.0222	1
5103-74-2	gamma-Chlordane	U	0.0222	ug/L	0.00556	0.0222	1
5103-71-9	alpha-Chlordane	U	0.0222	ug/L	0.00556	0.0222	1
959-98-8	Endosulfan I	U	0.0222	ug/L	0.00556	0.0222	1
72-55-9	4,4'-DDE	U	0.0444	ug/L	0.00556	0.0444	1
60-57-1	Dieldrin	U	0.0444	ug/L	0.0111	0.0444	1
72-20-8	Endrin	U	0.0444	ug/L	0.0111	0.0444	1
72-54-8	4,4'-DDD	U	0.0444	ug/L	0.0111	0.0444	1
33213-65-9	Endosulfan II	U	0.0444	ug/L	0.0111	0.0444	1
7421-93-4	Endrin aldehyde	U	0.0444	ug/L	0.00556	0.0444	1
50-29-3	4,4'-DDT	U	0.0444	ug/L	0.0111	0.0444	1
1031-07-8	Endosulfan sulfate	U	0.0444	ug/L	0.0111	0.0444	1
72-43-5	Methoxychlor	U	0.222	ug/L	0.0556	0.222	1
53494-70-5	Endrin ketone	U	0.0444	ug/L	0.0111	0.0444	1
8001-35-2	Toxaphene	U	0.556	ug/L	0.167	0.556	1

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
4cmx	0.662	1.11	ug/L	59.5	(29%-103%)
Decachlorobiphenyl	0.543	1.11	ug/L	48.8	(34%-118%)

PCB
Certificate of Analysis
Sample Summary

SDG Number:	09-2898	Date Collected:	08/14/2009 12:00	Matrix:	GROUND WATER
Lab Sample ID:	235414002	Date Received:	08/18/2009 09:00		
		Client:	LANL010	Project:	ESHL01000
Client ID:	CAMO-09-9478	Method:	SW846 8082	SOP Ref:	GL-OA-E-040
Batch ID:	896346	Inst:	ECD2A.I	Dilution:	1
Run Date:	08/28/2009 14:06	Analyst:	JAOC	Inj. Vol:	1 uL
Prep Date:	08/27/2009 17:16	Aliquot:	900 mL	Final Volume:	1 mL
Data File:	027f2701.d	Column:	1 CLP1	Level:	LOW
	027b2701.d		2 CLP2		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	0.111	ug/L	0.037	0.111	1
11104-28-2	Aroclor-1221	U	0.111	ug/L	0.037	0.111	1
11141-16-5	Aroclor-1232	U	0.111	ug/L	0.037	0.111	1
53469-21-9	Aroclor-1242	U	0.111	ug/L	0.037	0.111	1
12672-29-6	Aroclor-1248	U	0.111	ug/L	0.037	0.111	1
11097-69-1	Aroclor-1254	U	0.111	ug/L	0.037	0.111	1
11096-82-5	Aroclor-1260	U	0.111	ug/L	0.037	0.111	1
37324-23-5	Aroclor-1262	U	0.111	ug/L	0.037	0.111	1

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
Decachlorobiphenyl	0.149	0.222	ug/L	66.9	(34%-118%)
4cmx	0.122	0.222	ug/L	54.8	(29%-103%)

Perchlorate Analysis Data Sheet

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Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: GROUND WATER

Extraction Batch ID: 895086

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
CAMO-09-9480

Date Received: 18-AUG-09

GEL Job No (SDG): 09-2899

GEL Sample ID: 235412002

Date Filtered: 19-AUG-09

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.302	ug/L		1	20-AUG-09 21:00	per0820060.wiff
	Perchlorate Isotope Ratio						1	20-AUG-09 21:00	per0820060.wiff
14797-73-0	Perchlorate-101	.05	.2	0.314	ug/L		1	20-AUG-09 21:00	per0820060.wiff
	Perchlorate-O(18)			0.511	ug/L		1	20-AUG-09 21:00	per0820060.wiff

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

CDB06 unfiltered

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 09-2899 **METHOD TYPE:** EPA

SAMPLE ID: 235412001 **CLIENT ID:** CAMO-09-9478

CONTRACT: ESHL01000

MATRIX: G **DATE RECEIVED** 18-AUG-09 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	DF	Instrument ID	Analytical Run
7439-97-6	Mercury	0.066	ug/L	U		AV	0.066	1	HG3	082509W1-5
7429-90-5	Aluminum	3530	ug/L			P	68	1	OPTIMA3	083109A-1
7440-36-0	Antimony	0.5	ug/L	U		MS	0.5	1	ICPMS5	090911-3
7440-38-2	Arsenic	1.76	ug/L	J		MS	1.5	1	ICPMS5	090911-3
7440-39-3	Barium	107	ug/L			P	1	1	OPTIMA3	083109A-1
7440-41-7	Beryllium	1	ug/L	U		P	1	1	OPTIMA3	083109A-1
7440-42-8	Boron	34.4	ug/L	J		P	15	1	OPTIMA3	083109A-1
7440-43-9	Cadmium	0.11	ug/L	U		MS	0.11	1	ICPMS5	090911-3
7440-70-2	Calcium	17200	ug/L			P	50	1	OPTIMA3	083109A-1
7440-47-3	Chromium	2.99	ug/L	J		MS	2.5	1	ICPMS5	090912-4
7440-48-4	Cobalt	1	ug/L	U		P	1	1	OPTIMA3	083109A-1
7440-50-8	Copper	3	ug/L	U		P	3	1	OPTIMA3	083109A-1
7439-89-6	Iron	1890	ug/L			P	30	1	OPTIMA3	083109A-1
7439-92-1	Lead	2.28	ug/L			MS	0.5	1	ICPMS5	090911-3
7439-95-4	Magnesium	4170	ug/L			P	85	1	OPTIMA3	083109A-1
7439-96-5	Manganese	22.5	ug/L			P	2	1	OPTIMA3	083109A-1
7439-98-7	Molybdenum	1.06	ug/L			MS	0.1	1	ICPMS5	090911-3
7440-02-0	Nickel	1.79	ug/L	J		MS	0.5	1	ICPMS5	090911-3
7440-09-7	Potassium	2840	ug/L		E	P	50	1	OPTIMA3	083109A-1
7782-49-2	Selenium	1	ug/L	U		MS	1	1	ICPMS5	090911-3
7440-22-4	Silver	0.2	ug/L	U		MS	0.2	1	ICPMS5	090911-3
7440-23-5	Sodium	22100	ug/L			P	100	1	OPTIMA3	083109A-1
7440-24-6	Strontium	121	ug/L			P	1	1	OPTIMA3	083109A-1
7440-28-0	Thallium	0.451	ug/L	J		MS	0.3	1	ICPMS5	090911-3
7440-31-5	Tin	12.5	ug/L	U		P	12.5	5	OPTIMA3	091609-2
7440-61-1	Uranium	0.344	ug/L			MS	0.05	1	ICPMS5	090912-4

CDB0-6 unfiltered

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 09-2899 **METHOD TYPE:** EPA

SAMPLE ID: 235412001 **CLIENT ID:** CAMO-09-9478

CONTRACT: ESHL01000

MATRIX: G **DATE RECEIVED** 18-AUG-09 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	DF	Instrument ID	Analytical Run
7440-62-2	Vanadium	6.12	ug/L			P	1	1	OPTIMA3	083109A-1
7440-66-6	Zinc	42.7	ug/L			P	3.3	1	OPTIMA3	083109A-1
	Hardness as CaCO3	60.1	mg/L				0.35	1	CALC001	

CDB0-6 filtered

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 09-2899 **METHOD TYPE:** EPA

SAMPLE ID: 235412002 **CLIENT ID:** CAMO-09-9480

CONTRACT: ESHL01000

MATRIX: G **DATE RECEIVED** 18-AUG-09 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	DF	Instrument ID	Analytical Run
7439-97-6	Mercury	0.066	ug/L	U		AV	0.066	1	HG3	082509W1-5
7631-86-9	Silica	56.6	mg/L			P	0.053	1	OPTIMA3	083109A-1
7429-90-5	Aluminum	230	ug/L			P	68	1	OPTIMA3	083109A-1
7440-36-0	Antimony	0.5	ug/L	U		MS	0.5	1	ICPMS5	090911-3
7440-38-2	Arsenic	1.5	ug/L	U		MS	1.5	1	ICPMS5	090911-3
7440-39-3	Barium	88.4	ug/L			P	1	1	OPTIMA3	083109A-1
7440-41-7	Beryllium	1	ug/L	U		P	1	1	OPTIMA3	083109A-1
7440-42-8	Boron	31.5	ug/L	J		P	15	1	OPTIMA3	083109A-1
7440-43-9	Cadmium	0.11	ug/L	U		MS	0.11	1	ICPMS5	090911-3
7440-70-2	Calcium	15700	ug/L			P	50	1	OPTIMA3	083109A-1
7440-47-3	Chromium	2.5	ug/L	U		MS	2.5	1	ICPMS5	090912-4
7440-48-4	Cobalt	1	ug/L	U		P	1	1	OPTIMA3	083109A-1
7440-50-8	Copper	3	ug/L	U		P	3	1	OPTIMA3	083109A-1
7439-89-6	Iron	97.1	ug/L	J		P	30	1	OPTIMA3	083109A-1
7439-92-1	Lead	0.5	ug/L	U		MS	0.5	1	ICPMS5	090911-3
7439-95-4	Magnesium	3690	ug/L			P	85	1	OPTIMA3	083109A-1
7439-96-5	Manganese	2	ug/L	U		P	2	1	OPTIMA3	083109A-1
7439-98-7	Molybdenum	0.894	ug/L			MS	0.1	1	ICPMS5	090911-3
7440-02-0	Nickel	1.02	ug/L	J		MS	0.5	1	ICPMS5	090911-3
7440-09-7	Potassium	1950	ug/L		E	P	50	1	OPTIMA3	083109A-1
7782-49-2	Selenium	1	ug/L	U		MS	1	1	ICPMS5	090911-3
7440-22-4	Silver	0.2	ug/L	U		MS	0.2	1	ICPMS5	090911-3
7440-23-5	Sodium	20700	ug/L			P	100	1	OPTIMA3	083109A-1
7440-24-6	Strontium	110	ug/L			P	1	1	OPTIMA3	083109A-1
7440-28-0	Thallium	0.3	ug/L	U		MS	0.3	1	ICPMS5	090911-3
7440-31-5	Tin	12.5	ug/L	U		P	12.5	5	OPTIMA3	091609-2

CD80-6 filtered

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 09-2899 METHOD TYPE: EPA

SAMPLE ID: 235412002 CLIENT ID: CAMO-09-9480

CONTRACT: ESHL01000

MATRIX:G DATE RECEIVED 18-AUG-09 LEVEL: Low %SOLIDS:

CAS No	Analyte	Result	Units	C	Qual	M	MDL	DF	Instrument ID	Analytical Run
7440-61-1	Uranium	0.063	ug/L	J		MS	0.05	1	ICPMS5	090912-4
7440-62-2	Vanadium	3.44	ug/L	J		P	1	1	OPTIMA3	083109A-1
7440-66-6	Zinc	21.7	ug/L			P	3.3	1	OPTIMA3	083109A-1
-	Hardness as CaCO3	54.5	mg/L				0.35	1	CALC001	

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Certificate of Analysis

Company : Los Alamos National Laboratory
Address : PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **LANL-WQH Water Samples**

Report Date: September 14, 2009

Client SDG: 09-2899

Client Sample ID:	CAMO-09-9478	Project:	ESHL01000
Sample ID:	235412001	Client ID:	LANL010
Matrix:	Ground Water		
Collect Date:	14-AUG-09 12:00		
Receive Date:	18-AUG-09		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Flow Injection Analysis										
EPA 335.4 Cyanide, Total "As Received"										
Cyanide, Total	U	ND	1.66	5.00	ug/L	1	AXC2 08/25/09	1239	894720	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 335.4	EPA 335.4 Total Cyanide	AXS5	08/24/09	1419	894719

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 335.4	

GEL LABORATORIES LLC

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Certificate of Analysis

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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **LANL-WQH Water Samples**

Report Date: September 14, 2009

Client SDG: 09-2899

Client Sample ID:	CAMO-09-9480	Project:	ESHL01000
Sample ID:	235412002	Client ID:	LANL010
Matrix:	Ground Water		
Collect Date:	14-AUG-09 12:00		
Receive Date:	18-AUG-09		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Conductivity Analysis Federal										
EPA120.1 Specific Conductivity "As Received"										
Conductivity		221	1.00	1.00	umhos/cm	1	TXT1 08/28/09	1117	897951	1
Electrode Analysis Federal										
EPA 150.1 pH Federal "As Received"										
pH at Temp 16.1C	H	6.85	0.010	0.100	SU	1	TXT1 08/19/09	1734	895145	2
Ion Chromatography Federal										
EPA 300.0 Anions Liquid 28 day "As Received"										
Bromide	U	ND	0.066	0.200	mg/L	1	VXP1 09/01/09	2027	894858	3
Fluoride		0.340	0.033	0.100	mg/L	1				
Sulfate		9.96	0.100	0.400	mg/L	1				
Chloride		22.9	0.132	0.400	mg/L	2	VXP1 09/02/09	1801	894858	4
Nutrient Analysis										
EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"										
Nitrogen, Nitrate/Nitrite	U	ND	0.050	0.250	mg/L	5	AXH3 08/27/09	0952	895117	5
Nutrient Analysis Federal										
EPA 350.1 Nitrogen, Ammonia L "As Received"										
Nitrogen, Ammonia	J	0.0178	0.016	0.050	mg/L	1	AXH3 08/20/09	1334	894617	6
EPA 365.4 Phosphorus, Total in "As Received"										
Phosphorus, Total as P		0.224	0.015	0.050	mg/L	1	AXH3 08/24/09	1051	894619	7
Solids Analysis Federal										
EPA 160.1 Solids, Dissolved-F "As Received"										
Total Dissolved Solids		189	2.38	10.0	mg/L		JXT1 08/20/09	0756	895478	8
Titration Analysis Federal										
EPA 310.1 Total Alkalinity Federal "As Received"										
Alkalinity, Total as CaCO3		56.2	0.725	1.00	mg/L		VXP1 08/26/09	1303	897136	9
Carbonate alkalinity (CaCO3)	U	ND	0.725	1.00	mg/L					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	SXJ1	08/20/09	1100	894616
EPA 365.4 Prep	EPA 365.4 Phosphorus, Total in liquid-Fe	SXJ1	08/21/09	1030	894618

The following Analytical Methods were performed

Method	Description	Analyst Comments

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Los Alamos, New Mexico 87545
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Project: **LANL-WQH Water Samples**

Report Date: September 14, 2009

Client SDG: 09-2899

Client Sample ID: CAMO-09-9480
Sample ID: 235412002

Project: ESHL01000
Client ID: LANL010

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 120.1	
2	EPA 150.1	
3	EPA 300.0	
4	EPA 300.0	
5	EPA 353.2	
6	EPA 350.1	
7	EPA 365.4	
8	EPA 160.1	
9	EPA 310.1	

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Project: **LANL-WQH Water Samples**

Report Date: September 12, 2009

Client SDG: 09-2898

Client Sample ID:	CAMO-09-9478	Project:	ESHL01000
Sample ID:	235414001	Client ID:	LANL010
Matrix:	Ground Water		
Collect Date:	14-AUG-09 12:00		
Receive Date:	18-AUG-09		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis Federal											
SW 9060 Total Organic Carbon "As Received"											
Total Organic Carbon Average		1.44	0.330	1.00	mg/L	1	TSM	08/24/09	1917	894630	1
Nutrient Analysis Federal											
Nitrogen, Total Kjeldahl (TKN) "As Received"											
Nitrogen, Total Kjeldahl		0.194	0.033	0.100	mg/L	1	AXH3	08/20/09	1506	894615	2

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	AXH3	08/20/09	0716	894613

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060	
2	EPA 351.2	

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Contact: Ms. Joylene Valdez
Project: LANL-WQH Water Samples

Report Date: September 14, 2009

Client Sample ID:	CAMO-09-9478	Project:	ESHL01000
Sample ID:	235412001	Client ID:	LANL010
Matrix:	Ground Water		
Collect Date:	14-AUG-09		
Receive Date:	18-AUG-09		
Collector:	Client		

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date Time	Batch	Mtd.
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Liquid "As Received"											
Cesium-137	U	0.386	5.20	+/-1.58	8.00	pCi/L		KXG3	08/21/09 1756	895146	1
Cobalt-60	U	1.14	5.41	+/-1.54	8.00	pCi/L					
Gross Gamma	U	104	107	+/-58.8	120	pCi/L					
Neptunium-237	U	10.2	39.4	+/-11.7	10.0	pCi/L					
Potassium-40	U	10.9	48.8	+/-27.1	10.0	pCi/L					
Sodium-22	U	-0.238	4.71	+/-1.47	10.0	pCi/L					
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, liquid "As Received"											
Beta		10.7	3.61	+/-1.73	3.00	pCi/L		BXF1	09/10/09 1739	898598	2
Alpha		6.46	3.46	+/-1.79	3.00	pCi/L		DXB5	09/11/09 1053	898598	3
GFPC, Ra228, Liquid "As Received"											
Radium-228	U	0.566	0.914	+/-0.296	1.00	pCi/L		JXC5	08/29/09 0958	896537	4
GFPC, Sr90, liquid "As Received"											
Strontium-90	U	0.265	0.418	+/-0.131	0.500	pCi/L		JXR1	08/21/09 1308	895107	5
Rad Radium-226											
Lucas Cell, Ra226, liquid "As Received"											
Radium-226		0.374	0.318	+/-0.124	1.00	pCi/L		KSD1	09/09/09 1645	896120	6

The following Analytical Methods were performed

Method	Description
1	EPA 901.1
2	EPA 900.0
3	EPA 900.0
4	EPA 904.0/SW846 9320 Modified
5	EPA 905.0 Modified
6	EPA 903.1 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Receive	57.0	(50%-105%)
Strontium Carrier	GFPC, Sr90, liquid "As Received"	87.3	(50%-105%)

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Project: LANL-WQH Water Samples

Report Date: September 14, 2009

Client Sample ID: CAMO-09-9478
Sample ID: 235412001

Project: ESHL01000
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.

Notes:
TPU is calculated at the 67% confidence level (1-sigma).
The Qualifiers in this report are defined as follows :

** Analyte is a surrogate compound
< Result is less than value reported
> Result is greater than value reported
A The TIC is a suspected aldol-condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
E Metals--%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
F Estimated Value
H Analytical holding time was exceeded
J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
d 5-day BOD--The 2:1 depletion requirement was not met for this sample
h Preparation or preservation holding time was exceeded
The above sample is reported on an "as received" basis.