



TA 46

ENTERED



*Environmental Protection Division  
Water Quality & RCRA Group (ENV-RCRA)*  
P.O. Box 1663, Mail Stop K490  
Los Alamos, New Mexico 87545  
(505) 667-7969/FAX: (505) 665-9344

Date: July 30, 2008  
Refer To: ENV-RCRA-08-144  
LA-UR: 08-04519

Mr. William Olson, Bureau Chief  
Ground Water Quality Bureau  
New Mexico Environment Department  
Harold Runnels Building, Room N2261  
1190 St. Francis Drive  
P.O. Box 26110  
Santa Fe, NM 87502

Dear Mr. Olson:

**SUBJECT: GROUND WATER DISCHARGE PLAN QUARTERLY REPORT, SECOND QUARTER 2008, SANITARY WASTEWATER SYSTEMS PLANT (DP-857)**

This letter and the attachments are Los Alamos National Laboratory's quarterly report for the TA-46 Sanitary Wastewater Systems (SWWS) Plant Ground Water Discharge Plan (DP-857) for the second quarter (April, May, and June) of 2008.

Table 1.0 presents water quality data from sampling at the TA-46 SWWS Plant reuse wet well, Cañada del Buey Observation Well (CDBO)-6, and NPDES Outfalls 001 and 03A027 for the second quarter of 2008. All sample results in Table 1.0 are less than the NM WQCC Regulation 3103 standards for ground water. Attachment 1.0 presents copies of the analytical reports prepared by General Engineering Laboratories, Inc. for the second quarter of 2008.

Table 2.0 presents the water level in CDBO-6 for the second quarter of 2008.

Table 3.0 presents discharge volumes from the SWWS Plant's force main to TA-3, the Power Plant's NPDES Outfall 001, and the Strategic Computing Complex's (SCC) NPDES Outfall 03A027. In addition, Table 3.0 includes the volume of reuse water used by the SCC cooling towers; during the second quarter of 2008, the SCC cooling towers did not use any SWWS Plant reuse water or treated water from the Sanitary Effluent Reclamation Facility (SERF).

Table 4.0 and Attachment 2.0 present the results from monthly inspections of the four leak collection standpipes at the SERF evaporation basins located on Sigma Mesa. All leak collection standpipes were dry during the second quarter of 2008 with the exception of the west SERF basin's east standpipe which contained minimal quantities of water.



On March 31, 2008, your agency was notified of a leak (personal communication, Robert Beers, LANL, and Robert George, NMED-GWQB) in the primary liner of the west SERF basin. A patch installed in 2007 apparently broke loose exposing an old puncture. A corrective action plan was submitted to your agency on April 24, 2008 (ENV-RCRA-08-076) committing the Laboratory to install a final, permanent patch by July 31, 2008. There is no reason to believe that this leak has resulted in a discharge to the environment; the presence of liquid in the leak collection standpipe is confirmation that the secondary liner is functioning as designed to capture water leaking past the primary liner.

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

Sincerely,



Bob Beers  
Water Quality & RCRA Group

BB/lm

Attachments: a/s

Cy: Marcy Leavitt, NMED/SWQB, Santa Fe, NM, w/att.  
James Bearzi, NMED HWB, Santa Fe, NM, w/att.  
Steve Yanicak, LASO-GOV, w/att., J993  
Hai Shen, LASO-EO, w/att., A316  
Gene Turner, LASO-EO, w/att., A316  
Michael B. Mallory, PADOPS, w/o att., A102  
Richard S. Watkins, ADESHQ, w/o att., K491  
Tori George, ENV-DO, w/o att., J978  
Mike Saladen, ENV-RCRA, w/o att., K490  
Craig Douglass, RLW, w/att., E518  
Raeanna Sharp-Geiger, EWMO-DO, w/att., J910  
Steven Hanson, EWMO-RLW, w/att., E518  
Mell Smithour, SSS-UD-J01, w/att., K718  
Charles Barnett, SSS-UD-M02, w/att., A199  
ENV-RCRA File, w/att., K490  
IRM-RMMSO, w/att., A150

*SWWS Plant Ground Water Discharge Plan (DP-857)  
2nd Quarter, 2008*

**Table 1.0 Water Quality Data: SWWS Plant Reuse Water, NPDES Outfalls 001 and 03A027, and CDBO-6. 2nd Quarter, 2008.**

Sampling Location	Field Prep <sup>3</sup>	Sample Date	Sample ID No.	TDS (mg/L)	Chloride (mg/L)	NO3+NO2-N (mg/L)	TKN (mg/L)	NH3-N (mg/L)
<b><u>SWWS Plant</u></b>								
SWWS Plant Reuse Wet Well <sup>1</sup>	UF	5/28/2008	GU080500OSRW01	492	136	0.48	0.52	0.10
<b><u>Sandia Canyon</u></b>								
NPDES Outfall 001	UF	5/28/2008	GU080501A00102	320	9.63	0.58	<0.029	0.15
NPDES Outfall 03A027	UF	5/28/2008	GU080503A02701	475	16.5	1.64	0.29	0.19
<b><u>Canada del Buey</u></b>								
CDBO-6	F	5/22/2008	CAMO-08-12720	172	22.9	0.038J		<0.050
CDBO-6	UF	5/22/2008	CAMO-08-12721				0.19	
<i>NM WQCC Regulation 3103 Ground Water Standards (mg/L)</i>				<i>1000</i>	<i>250</i>	<i>10</i>	<i>NA</i>	<i>NA</i>

**Notes:**

<sup>1</sup>Water in the reuse wet well is representative of water in the reuse pond.

<sup>2</sup>J means the reported result was greater than the Method Detection Limit but less than the Reporting Limit.

<sup>3</sup>UF means a non-filtered sample, F means a filtered sample.

All analytical results by General Engineering Laboratories, Inc., Charleston, SC.

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

*SWWS Plant Ground Water Discharge Plan (DP-857) Report  
2<sup>nd</sup> Quarter, 2008*

**Table 2.0. Water Level in Cañada del Buey Observation Well (CDBO)-6, 2<sup>nd</sup> Quarter 2008.**

Location	Date	Water Level† (ft)
CDBO-6	5/22/08	32.29

**Notes:**

† Measured in feet from the top of the well casing to the surface of the water.

**Table 3.0. Discharge Volumes from the SWWS Plant, NPDES Outfalls 001 and 03A027, and Reuse Water to the SCC Cooling Towers, 2<sup>nd</sup> Quarter 2008 (millions of gallons).**

Month	SWWS Plant to TA-3 <sup>1</sup>	NPDES Outfall 001 <sup>2</sup>	Reuse Water to SCC Cooling Towers <sup>3</sup>	NPDES Outfall 03A027 <sup>4</sup>
Apr-2008	8.037	9.594	0	0.744
May-2008	7.550	9.029	0	0.864
Jun-2008	7.506	8.989	0	0.953

**Notes:**

<sup>1</sup>In the 2<sup>nd</sup> quarter of 2008, all SWWS Plant effluent was pumped via a force main to TA-3 for reuse or discharge.

<sup>2</sup>Power plant wastewater and all SWWS Plant reuse water not used by the SCC cooling towers are discharged at NPDES Outfall 001.

<sup>3</sup>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 2<sup>nd</sup> quarter of 2008.

<sup>4</sup>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
4/21/08	All standpipes dry except West Basin's east pipe contains minimal quantity
5/21/08	All standpipes dry except West Basin's east pipe contains minimal quantity
6/23/08	All standpipes dry except West Basin's east pipe contains minimal quantity

**Analytical Reports**

by

**General Engineering Laboratories, Inc**

**Sample Dates:**

**5/22/2008**

**5/28/2008**

**Locations:**

**SWWS Plant Reuse Wet Well**

**NPDES Outfall 001**

**NPDES Outfall 03A027**

**CDBO-6**

**Analytes**

**Cl, NO<sub>3</sub>+NO<sub>2</sub>, TDS, TKN, NH<sub>3</sub>**

## GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: June 23, 2008

Client Sample ID: GU080500OSRW01  
 Sample ID: 209343003  
 Matrix: Waste Water  
 Collect Date: 28-MAY-08 10:20  
 Receive Date: 30-MAY-08  
 Collector: Client

Project: ESHL00805  
 Client ID: LANL008

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
<b>Ion Chromatography Federal</b>										
<i>EPA 300.0 Chloride in Liquid "As Received"</i>										
Chloride		136	0.660	2.00	mg/L	10	VH1 06/05/08	1315	760798	1
<b>Nutrient Analysis</b>										
<i>EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"</i>										
Nitrogen, Nitrate/Nitrite		0.483	0.050	0.250	mg/L	5	AXH3 06/03/08	1912	760774	2
<b>Nutrient Analysis Federal</b>										
<i>Nitrogen as Ammonia "As Received"</i>										
Nitrogen, Ammonia		0.102	0.030	0.050	mg/L	1	AXH3 06/02/08	1943	760750	3
<i>Nitrogen, Total Kjeldahl (TKN) "As Received"</i>										
Nitrogen, Total Kjeldahl		0.517	0.029	0.100	mg/L	1	AXH3 06/05/08	1604	760548	4
<b>Solids Analysis Federal</b>										
<i>EPA 160.1 Solids, Dissolved-F "As Received"</i>										
Total Dissolved Solids		492	2.38	10.0	mg/L		NXM 06/02/08	1156	760416	5

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	SXX1	06/02/08	1826	760749
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	SXX1	06/03/08	1342	760544

**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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 Contact: Ms. Joylene Valdez  
 Project: ENV-WQH WQCC Regs

Report Date: June 23, 2008

Client Sample ID: GU080501A00102      Project: ESHL00805  
 Sample ID: 209343002      Client ID: LANL008  
 Matrix: Waste Water  
 Collect Date: 28-MAY-08 13:26  
 Receive Date: 30-MAY-08  
 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Ion Chromatography Federal</b>											
<i>EPA 300.0 Chloride in Liquid "As Received"</i>											
Chloride		9.63	0.066	0.200	mg/L	1	VH1	06/04/08	1104	760798	1
<b>Nutrient Analysis</b>											
<i>EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"</i>											
Nitrogen, Nitrate/Nitrite		0.575	0.050	0.250	mg/L	5	AXH3	06/03/08	1910	760774	2
<b>Nutrient Analysis Federal</b>											
<i>Nitrogen as Ammonia "As Received"</i>											
Nitrogen, Ammonia		0.146	0.060	0.100	mg/L	1	AXH3	06/02/08	1936	760750	3
<i>Nitrogen, Total Kjeldahl (TKN) "As Received"</i>											
Nitrogen, Total Kjeldahl	U	ND	0.029	0.100	mg/L	1	AXH3	06/05/08	1705	760548	4
<b>Solids Analysis Federal</b>											
<i>EPA 160.1 Solids, Dissolved-F "As Received"</i>											
Total Dissolved Solids		320	2.38	10.0	mg/L		NXM	06/02/08	1156	760416	5

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	SXK1	06/02/08	1826	760749
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	SXK1	06/03/08	1342	760544

**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: ENV-WQH WQCC Regs

Report Date: June 23, 2008

Client Sample ID: GU080503A02701      Project: ESHL00805  
 Sample ID: 209343001      Client ID: LANL008  
 Matrix: Waste Water  
 Collect Date: 28-MAY-08 13:37  
 Receive Date: 30-MAY-08  
 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Ion Chromatography Federal</b>											
<i>EPA 300.0 Chloride in Liquid "As Received"</i>											
Chloride		16.5	0.066	0.200	mg/L	1	VH1	06/04/08	1015	760798	1
<b>Nutrient Analysis</b>											
<i>EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"</i>											
Nitrogen, Nitrate/Nitrite		1.64	0.050	0.250	mg/L	5	AXH3	06/03/08	1902	760774	2
<b>Nutrient Analysis Federal</b>											
<i>Nitrogen as Ammonia "As Received"</i>											
Nitrogen, Ammonia		0.192	0.030	0.050	mg/L	1	AXH3	06/02/08	1936	760750	3
<i>Nitrogen, Total Kjeldahl (TKN) "As Received"</i>											
Nitrogen, Total Kjeldahl		0.292	0.029	0.100	mg/L	1	AXH3	06/05/08	1603	760548	4
<b>Solids Analysis Federal</b>											
<i>EPA 160.1 Solids, Dissolved-F "As Received"</i>											
Total Dissolved Solids		475	2.38	10.0	mg/L		NXM	06/02/08	1156	760416	5

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	SXK1	06/02/08	1826	760749
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	SXK1	06/03/08	1342	760544

**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	

CDBO-6

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

Report Date: June 20, 2008

Client Sample ID: CAMO-08-12720      Project: ESHL00813  
 Sample ID: 209130001      Client ID: LANL008  
 Matrix: Ground Water  
 Collect Date: 22-MAY-08 12:00  
 Receive Date: 24-MAY-08  
 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Conductivity Analysis Federal</b>											
<i>EPA 120.1 Specific Conductivity "As Received"</i>											
Conductivity		219	1.00	1.00	umhos/cm	1	RXG2	06/10/08	1020	759033	1
<b>Electrode Analysis Federal</b>											
<i>EPA 150.1 pH Federal "As Received"</i>											
pH at Temp 16.6C	H	6.97	0.010	0.100	SU	1	RXG2	05/27/08	1314	758577	2
<b>Ion Chromatography Federal</b>											
<i>EPA 300.0 Anions Liquid 28 day "As Received"</i>											
Bromide	J	0.087	0.067	0.200	mg/L	1	VH1	05/28/08	0859	758379	3
Fluoride		0.191	0.033	0.100	mg/L	1					
Sulfate		10.5	0.100	0.400	mg/L	1					
Chloride		22.9	0.330	1.00	mg/L	5	VH1	05/28/08	2120	758379	4
<b>Nutrient Analysis</b>											
<i>EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"</i>											
Nitrogen, Nitrate/Nitrite	J	0.0384	0.010	0.050	mg/L	1	KLP1	06/10/08	1241	759725	5
<b>Nutrient Analysis Federal</b>											
<i>EPA 350.1 Nitrogen, Ammonia L "As Received"</i>											
Nitrogen, Ammonia	U	ND	0.030	0.050	mg/L	1	AXH3	05/28/08	1728	759376	6
<i>EPA 365.4 Phosphorus, Total in "As Received"</i>											
Phosphorus, Total as P		0.197	0.024	0.050	mg/L	1	AXH3	06/03/08	1831	758433	7
<b>Solids Analysis Federal</b>											
<i>EPA 160.1 Solids, Dissolved-F "As Received"</i>											
Total Dissolved Solids		172	2.38	10.0	mg/L		NXM	05/27/08	1111	758453	8
<b>Titration Analysis Federal</b>											
<i>EPA 310.1 Total Alkalinity Federal "As Received"</i>											
Alkalinity, Total as CaCO3		51.9	0.725	1.00	mg/L		TXT1	06/03/08	1236	760794	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	AXH3	05/28/08	1713	759373
EPA 365.4 Prep	EPA 365.4 Phosphorus, Total in liquid-Fe	SXK1	05/28/08	1450	758428

**The following Analytical Methods were performed**

Method	Description	Analyst Comments
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 Los Alamos, New Mexico 87545  
 Contact: Ms. Joylene Valdez  
 Project: ENV-WQH Water Samples

Report Date: June 20, 2008

Client Sample ID: CAMO-08-12721  
 Sample ID: 209130002  
 Matrix: Ground Water  
 Collect Date: 22-MAY-08 12:00  
 Receive Date: 24-MAY-08  
 Collector: Client

Project: ESHL00813  
 Client ID: LANL008

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Carbon Analysis Federal</b>											
<i>SW 9060 Total Organic Carbon "As Received"</i>											
Total Organic Carbon Average		1.76	0.330	1.00	mg/L	1	TSM	05/28/08	0306	758006	1
<b>Flow Injection Analysis Federal</b>											
<i>EPA 335.3 Cyanide, Total "As Received"</i>											
Cyanide, Total	U	ND	1.50	5.00	ug/L	1	KLP1	05/30/08	1110	758627	2
<b>Nutrient Analysis Federal</b>											
<i>Nitrogen, Total Kjeldahl (TKN) "As Received"</i>											
Nitrogen, Total Kjeldahl		0.191	0.029	0.100	mg/L	1	AXH3	05/29/08	2029	758440	3

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
EPA 335.3	EPA 335.3 Total Cyanide	AXS5	05/28/08	1346	758621
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	SXX1	05/28/08	1455	758438

**The following Analytical Methods were performed**

Method	Description	Analyst Comments
1	SW846 9060	
2	EPA 335.3	
3	EPA 351.2	

**Photographs**

**SERF Evaporation Basins and Leak Inspection Pipes**

**Inspection Dates:**

**4/21/2008**

**5/21/2008**

**6/23/2008**



East basin 4/21/08



East basin east inspection pipe 4/21/08



East basin west inspection pipe 4/21/08



West Basin east inspection pipe  
4/21/2008



West Basin west inspection pipe 4/21/08



**April '08 Evap Basin Inspection Record**



West Basin 4/21/08



East basin 5/21/08



East basin east inspection pipe 5/21/08



West Basin east inspection pipe  
5/21/2008



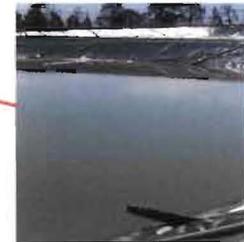
**May '08 Evap Basin Inspection Record**



East basin west inspection pipe 5/21/08



West Basin west inspection pipe 5/21/08



West Basin 5/21/08



East basin 6/23/08



East basin east inspection pipe 6/23/08



West Basin east inspection pipe 6/23/2008



**June '08 Evap Basin Inspection Record**



East basin west inspection pipe 6/23/08



West Basin west inspection pipe 6/23/08



West Basin 6/23/08