



TA46



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: October 28, 2010
Refer To: ENV-RCRA-10-199
LA-UR: 10-06937

Mr. William C. 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: GROUNDWATER DISCHARGE PLAN QUARTERLY REPORT, THIRD QUARTER 2010, SANITARY WASTEWATER SYSTEMS PLANT (DP-857)

This letter and enclosures are Los Alamos National Laboratory's quarterly report for the TA-46 Sanitary Wastewater Systems (SWWS) Plant Groundwater Discharge Plan (DP-857) for the third quarter (July, August, and September) of 2010.

Table 1.0 presents water quality data from sampling conducted at the TA-46 SWWS Plant's reuse wet well, NPDES Outfalls 001 and 03A027, and Cañada del Buey Observation Well (CDBO)-6 for the third quarter of 2010. All sample results presented in Table 1.0 are less than the New Mexico Water Quality Control Commission Regulation 3103 standards for groundwater. Enclosure 1.0 presents copies of the analytical reports prepared by General Engineering Laboratories, Inc.

Table 2.0 presents the water level in CDBO-6 for the third quarter of 2010.

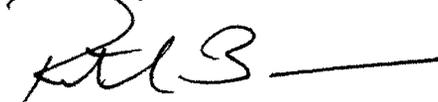
Table 3.0 presents discharge volumes from the SWWS Plant's force main to TA-3, the Power Plant's NPDES Outfall 001, and the Strategic Computing Complex's (SCC) NPDES Outfall 03A027. In addition, Table 3.0 includes the volume of reuse water used by the SCC cooling towers; during the third quarter of 2010, 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 Enclosure 2.0 present the results from monthly inspections of the four leak collection standpipes at the SERF evaporation basins located on Sigma Mesa. The leak collection standpipes were dry or contained de minimis amounts of water during July, August, and September 2010.



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, NM, w/enc.
James Bearzi, NMED HWB, Santa Fe, NM, w/enc.
Hai Shen, LASO-EO, w/enc., A316
Gene Turner, LASO-EO, w/enc., A316
Steve Yanicak, LASO-GOV, w/enc., M894
Michael B. Mallory, PADOPS, w/o enc., A102
Chris Cantwell, ADESHQ, w/o enc., K491
Mike Saladen, ENV-RCRA, w/o enc., (E-File)
Walter E. Atencio, ADESHQ, w/enc., K760
Mell Smithour, ES-UI, w/enc., K718
Charles Barnett, UI-OPS, w/enc., J972
ENV-RCRA File, w/enc., K490
IRM-RMMSO, w/enc., A150

**SWWS Plant Groundwater Discharge Plan (DP-857) Report
3rd Quarter, 2010**

Table 1.0 Water Quality Data: SWWS Plant Reuse Water, NPDES Outfalls 001 and 03A027, and CDBO-6. 3rd Quarter, 2010.

Sampling Location	Field Prep	Sample Date	Sample ID No.	TDS (mg/L)	Chloride (mg/L)	NO ₃ -N (mg/L)	TN (mg/L)	NH ₃ -N (mg/L)
SWWS Plant								
SWWS Plant Reuse Wet Well ¹	UF	08/19/10	SWWS46-10-25647	475	111	0.278	0.336	0.102J-
Sandia Canyon								
NPDES Outfall 001	UF	08/19/10	SWWS46-10-25645	395	77.1	0.378	0.523	0.061J-
NPDES Outfall 03A027	UF	08/19/10	SWWS46-10-25646	534	15.5	0.810	1.45	0.764J-
Canada del Buey								
CDBO-6	F	08/02/10	CAPA-10-24063	174	25.0	<0.065		<0.050
CDBO-6	UF	08/02/10	CAPA-10-24065				<0.033	
NM WQCC Regulation 3103 Ground Water Standards (mg/L)				1000	250	10 ³	NA	NA

Notes:

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

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

³The NMWQCC Regulation 3103 Ground Water Standard is for NO₃-N.

⁴Dry means that there was insufficient water in the well for sampling.

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 negative bias.

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

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

SWWS Plant Groundwater Discharge Plan (DP-857) Report
3rd Quarter, 2010

Table 2.0. Water Level in Cañada del Buey Observation Well (CDBO)-6, 3rd Quarter 2010

Location	Date	Water Level† (ft)
CDBO-6	8/2/2010	35.19

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 and NPDES Outfall 001, and SWWS Plant Reuse Water to SCC Cooling Towers, 3rd Quarter 2010 (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
Jul-2010	10.294	7.200	0	1.421
Aug-2010	8.532	7.012	0	1.362
Sep-2010	10.186	7.315	0	1.103

Notes:

¹In the 3rd quarter of 2010, all SWWS Plant effluent was pumped via a force main to TA-3 for reuse or discharge.

²Power plant wastewater and all SWWS Plant reuse water not used by the SCC Cooling Towers are discharged at NPDES Outfall 001.

³The 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 3rd quarter of 2010.

⁴The SCC cooling towers discharge to NPDES Outfall 03A027 at Sandia Canyon.

NA means that no flow volumes were available at the time this report was prepared.

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

Inspection Date	Inspection Results
7/14/2010	All standpipes are dry or contain minimal amounts of water
8/18/2010	All standpipes are dry or contain minimal amounts of water
9/23/2010	All standpipes are dry or contain minimal amounts of water

Analytical Reports

by

General Engineering Laboratories, Inc

Sample Dates:

8/19/2010

8/2/2010

Locations:

SWWS Plant Reuse Wet Well

NPDES Outfall 001

NPDES Outfall 03A027

CDBO-6

Analytes

Cl, NO₃+NO₂, TDS, TKN, NH₃

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 Water Samples**

Report Date: August 27, 2010

Client SDG: 10-3951

Client Sample ID:	CAPA-10-24063	Project:	ESHL00210
Sample ID:	257802001	Client ID:	ARSL001
Matrix:	WG		
Collect Date:	02-AUG-10 12:00		
Receive Date:	04-AUG-10		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Conductivity Analysis											
<i>EPA 120.1 Specific Conductivity "As Received"</i>											
Conductivity		222	1.00	1.00	umhos/cm	1	TXT1	08/06/10	1621	1010619	1
Electrode Analysis											
<i>EPA 150.1 pH "As Received"</i>											
pH at Temp 20.1C	H	6.93	0.010	0.100	SU	1	LXA1	08/10/10	1546	1011795	2
Ion Chromatography											
<i>EPA 300.0 Anions Liquid 28 day "As Received"</i>											
Bromide	U	ND	0.066	0.200	mg/L	1	GXM	08/06/10	0926	1009814	3
Fluoride		0.183	0.033	0.100	mg/L	1					
Sulfate		8.77	0.100	0.400	mg/L	1					
Chloride		25.0	0.132	0.400	mg/L	2	GXM	08/06/10	1346	1009814	4
Nutrient Analysis											
<i>EPA 350.1 Nitrogen, Ammonia L "As Received"</i>											
Nitrogen, Ammonia	U	ND	0.016	0.050	mg/L	1	AXH3	08/06/10	0832	1010219	5
<i>EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"</i>											
Nitrogen, Nitrate/Nitrite	J	0.065	0.050	0.250	mg/L	5	AXH3	08/09/10	1034	1010222	6
<i>EPA 365.4 Phosphorus, Total in "As Received"</i>											
Phosphorus, Total as P		0.191	0.015	0.050	mg/L	1	AXH3	08/17/10	1026	1010224	7
Solids Analysis											
<i>EPA 160.1 Solids, Dissolved-F "As Received"</i>											
Total Dissolved Solids		174	2.38	10.0	mg/L		LYG1	08/05/10	0856	1010091	8
Titration Analysis											
<i>EPA 310.1 Total Alkalinity "As Received"</i>											
Alkalinity, Total as CaCO3		56.5	0.725	1.00	mg/L		LXA1	08/12/10	1345	1012762	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	08/05/10	1145	1010218
EPA 365.4 Prep	EPA 365.4 Phosphorus, Total in liquid PR	SXJ1	08/05/10	1030	1010223

The following Analytical Methods were performed

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

Report Date: August 27, 2010

Client SDG: 10-3951

Client Sample ID:	CAPA-10-24065	Project:	ESHL00210
Sample ID:	257802003	Client ID:	ARSL001
Matrix:	WG		
Collect Date:	02-AUG-10 12:00		
Receive Date:	04-AUG-10		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
<i>SW 9060 Total Organic Carbon "As Received"</i>											
Total Organic Carbon Average		1.50	0.330	1.00	mg/L	1	TSM	08/05/10	1958	1009508	1
Flow Injection Analysis											
<i>WSP-CN(T) "As Received"</i>											
Cyanide, Total	U	ND	1.70	5.00	ug/L	1	SDS	08/05/10	1529	1010237	2
Nutrient Analysis											
<i>Nitrogen, Total Kjeldahl (TKN) "As Received"</i>											
Nitrogen, Total Kjeldahl	J	0.033	0.033	0.100	mg/L	1	AXH3	08/09/10	0905	1010221	3

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 335.4	EPA 335.4 Total Cyanide	AXS5	08/05/10	1343	1010236
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	SXJ1	08/05/10	1030	1010220

The following Analytical Methods were performed

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

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 Contact: Ms. Joylene Valdez
 Project: **LANL WQH WQCC Regs**

Report Date: August 27, 2010

Client SDG: 10-4273

Client Sample ID:	SWWS46-10-25645	Project:	ESHL00110
Sample ID:	259299001	Client ID:	ARSL001
Matrix:	Waste Water		
Collect Date:	19-AUG-10 12:00		
Receive Date:	21-AUG-10		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
<i>EPA 300.0 Chloride in Liquid "As Received"</i>											
Chloride		77.1	0.660	2.00	mg/L	10	VH1	08/24/10	1510	1016928	1
Nutrient Analysis											
<i>EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"</i>											
Nitrogen, Nitrate/Nitrite		0.378	0.050	0.250	mg/L	5	AXH3	08/25/10	0933	1016663	2
<i>Nitrogen as Ammonia "As Received"</i>											
Nitrogen, Ammonia		0.061	0.016	0.050	mg/L	1	AXH3	08/26/10	1045	1016652	3
<i>Nitrogen, Total Kjeldahl (TKN) "As Received"</i>											
Nitrogen, Total Kjeldahl		0.523	0.033	0.100	mg/L	1	AXH3	08/25/10	1342	1016657	4
Solids Analysis											
<i>EPA 160.1 Solids, Dissolved-F "As Received"</i>											
Total Dissolved Solids		395	2.38	10.0	mg/L		LYG1	08/24/10	0932	1017078	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	08/24/10	1420	1016651
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	SXJ1	08/24/10	1030	1016655

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: **LANL WQH WQCC Regs**

Report Date: August 27, 2010

Client SDG: 10-4273

Client Sample ID: SWWS46-10-25646
 Sample ID: 259299002
 Matrix: Waste Water
 Collect Date: 19-AUG-10 12:00
 Receive Date: 21-AUG-10
 Collector: Client

Project: ESHL00110
 Client ID: ARSL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
<i>EPA 300.0 Chloride in Liquid "As Received"</i>											
Chloride		15.5	0.066	0.200	mg/L	1	VH1	08/24/10	0602	1016928	1
Nutrient Analysis											
<i>EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"</i>											
Nitrogen, Nitrate/Nitrite		0.810	0.050	0.250	mg/L	5	AXH3	08/25/10	0937	1016663	2
<i>Nitrogen as Ammonia "As Received"</i>											
Nitrogen, Ammonia		0.764	0.016	0.050	mg/L	1	AXH3	08/26/10	1059	1016652	3
<i>Nitrogen, Total Kjeldahl (TKN) "As Received"</i>											
Nitrogen, Total Kjeldahl		1.45	0.033	0.100	mg/L	1	AXH3	08/25/10	1333	1016657	4
Solids Analysis											
<i>EPA 160.1 Solids, Dissolved-F "As Received"</i>											
Total Dissolved Solids		534	2.38	10.0	mg/L		LYG1	08/24/10	0932	1017078	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	08/24/10	1420	1016651
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	SXJ1	08/24/10	1030	1016655

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 WQCC Regs**

Report Date: August 27, 2010

Client SDG: 10-4273

Client Sample ID: SWWS46-10-25647
 Sample ID: 259299003
 Matrix: Waste Water
 Collect Date: 19-AUG-10 12:00
 Receive Date: 21-AUG-10
 Collector: Client

Project: ESHL00110
 Client ID: ARSL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
<i>EPA 300.0 Chloride in Liquid "As Received"</i>											
Chloride		111	0.660	2.00	mg/L	10	VH1	08/24/10	1637	1016928	1
Nutrient Analysis											
<i>EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"</i>											
Nitrogen, Nitrate/Nitrite		0.278	0.050	0.250	mg/L	5	AXH3	08/25/10	0938	1016663	2
<i>Nitrogen as Ammonia "As Received"</i>											
Nitrogen, Ammonia		0.102	0.016	0.050	mg/L	1	AXH3	08/26/10	1100	1016652	3
<i>Nitrogen, Total Kjeldahl (TKN) "As Received"</i>											
Nitrogen, Total Kjeldahl		0.336	0.033	0.100	mg/L	1	AXH3	08/25/10	1334	1016657	4
Solids Analysis											
<i>EPA 160.1 Solids, Dissolved-F "As Received"</i>											
Total Dissolved Solids		475	2.38	10.0	mg/L		LYG1	08/24/10	0932	1017078	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	08/24/10	1420	1016651
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	SXJ1	08/24/10	1030	1016655

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	

Photographs

SERF Evaporation Basins and Leak Inspection Pipes

Inspection Dates:

7/14/2010

8/18/2010

9/23/2010



**West Basin, West Inspection
Pipe (July 14, 2010)**



**West Basin, East Inspection
Pipe (July 14, 2010)**



**East Basin, West Inspection
Pipe (July 14, 2010)**



**East Basin, East Inspection
Pipe (July 14, 2010)**



**East Basin Influent Pipe
(July 14, 2010)**



**East Basin Overflow Pipe
(July 14, 2010)**



**West Basin Overflow Pipe
(July 14, 2010)**



**West Basin Overflow Pipe
(July 14, 2010)**

EVAPORATION POND RECORD JULY 14, 2010



West basin, West inspection pipe (8/18/2010)



West basin, East inspection pipe (8/18/2010)



East basin, West inspection pipe (8/18/2010)



East basin, East inspection pipe (8/18/2010)



East basin influent pipe (8/18/2010)



East basin overflow pipe (8/18/2010)



West basin overflow pipe (8/18/2010)



West basin influent pipe (8/18/2010)

EVAPORATION POND RECORD AUGUST 18, 2010



**West Basin, West Inspection
Pipe (9/23/2010)**



**West Basin, East Inspection
Pipe (9/23/2010)**



**East Basin, West Inspection
Pipe (9/23/2010)**



**East Basin, East Inspection
Pipe (9/23/2010)**



**East Basin Influent Pipe
(9/23/2010)**



**East Basin Overflow Pipe
(9/23/2010)**



**West Basin Overflow Pipe
(9/23/2010)**



**West Basin Influent Pipe
(9/23/2010)**

**EVAPORATION POND RECORD
SEPTEMBER 23, 2010**