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NMED Hazardous Waste Bureau

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, 2009
Refer To: ENV-RCRA-09-188
LA-UR: 09-06528

Mr. William C. Olson, Bureau 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: GROUNDWATER DISCHARGE PLAN QUARTERLY REPORT, THIRD QUARTER 2009, SANITARY WASTEWATER SYSTEMS PLANT (DP-857)

This letter and attachments 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, September) of 2009.

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 third quarter of 2009. All sample results in Table 1.0 are less than the NM WQCC Regulation 3103 standards for groundwater. Enclosure 1.0 presents copies of the analytical reports prepared by General Engineering Laboratories, Inc. for the third quarter of 2009.

Table 2.0 presents the water level in CDBO-6 for the third quarter of 2009.

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 2009, 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 2009.

32117

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

Sincerely,

Bob 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.
Steve Yanicak, LASO-GOV, w/enc., M894
Hai Shen, LASO-EO, w/enc., A316
Gene Turner, LASO-EO, w/enc., A316
Michael B. Mallory, PADOPS, w/o enc., A102
Chris Cantwell, ADESHQ, w/o enc., K491
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Walter E. Atencio, ADESHQ, w/enc., K760
Mell Smithour, ES-UI, w/enc., K718
Charles Barnett, UI-DO, w/enc., J972
ENV-DO File, w/o enc., J978
ENV-RCRA File, w/enc., K490
IRM-RMMSO, w/enc., A150

Table 1.0 Water Quality Data: SWWS Plant Reuse Water, NPDES Outfalls 001 and 03A027, and CDBO-6. 3rd 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	08/20/09	SWWS46-09-12226	482	131J+	1.0	0.949J-	<0.037
Sandia Canyon								
NPDES Outfall 001	UF	08/20/09	SWWS46-09-12227	422	109J+	0.80	0.822J-	<0.039
NPDES Outfall 03A027	UF	08/20/09	SWWS46-09-12228	452	13.2J+	0.81	1.43J-	<0.037
Canada del Buey								
CDBO-6	F	08/14/09	CAMO-09-9480	189J	22.9J+	<0.25		<0.018
CDBO-6	UF	08/14/09	CAMO-09-9478				<0.19	
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, 3rd Quarter 2009

Location	Date	Water Level† (ft)
CDBO-6	8/14/09	39.07

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, 3rd 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]
July-2009	7.052	7.177	0	1.948
Aug-2009	6.900	6.000	0	1.873
Sept-2009	6.617	6.038	0	1.672

Notes:
[1]In the 3rd 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 3rd 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
7/15/09	All standpipes are dry or contain minimal amounts of water
8/25/09	All standpipes are dry or contain minimal amounts of water
9/23/09	All standpipes are dry or contain minimal amounts of water

Analytical Reports

by

General Engineering Laboratories, Inc

Sample Dates:
8/14/2009
8/20/2009

Locations:
SWWS Plant Reuse Wet Well
NPDES Outfall 001
NPDES Outfall 03A027
CDBO-6

Analytes
Cl, NO_3+NO_2, TDS, TKN, NH_3

SWWS 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 Water Samples**

Report Date: September 17, 2009
Client SDG: 09-2977

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

Project: ESHL01000
Client ID: LANL010

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	

SWWS REUSE WELL

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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:	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	

NPDES OUTFALL 001

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

Project: ESHL01000
Client ID: LANL010

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	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	

NPDES OUTFALL 03A027

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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
Sample ID: 235864001
Matrix: Water
Collect Date: 20-AUG-09 12:00
Receive Date: 22-AUG-09
Collector: Client

Project: ESHL01000
Client ID: LANL010

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	

CDBO-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: September 14, 2009
Client SDG: 09-2899

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

Project: ESHL01000
Client ID: LANL010

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

Photographs

SERF Evaporation Basins and Leak Inspection Pipes

Inspection Dates:

7/15/2009
8/25/2009
9/23/2009

East basin

East basin east inspection pipe

West basin east inspection pipe

East basin west inspection pipe

West basin west inspection pipe

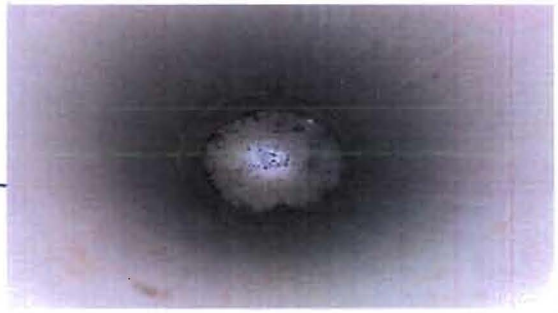
West basin

July 15, 2009, SERF Evap Basin Inspection Record

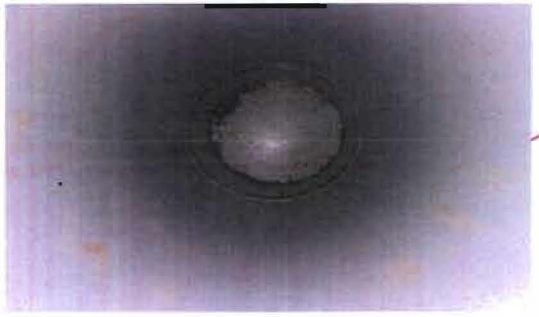
East basin

East basin east inspection pipe

West basin east inspection pipe



East basin west inspection pipe



West basin west inspection pipe

West basin

August 25, 2009, SERF Evap Basin Inspection Record

East basin

East basin east inspection pipe

West basin east inspection pipe

East basin west inspection pipe

West basin west inspection pipe

West basin

September 23, 2009, SERF Evap Basin Inspection Record