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ENTERED



**Environmental Protection Division  
Environmental Compliance Programs (ENV-CP)**  
PO Box 1663, K490  
Los Alamos, New Mexico 87545  
(505) 667-0666

**National Nuclear Security Administration  
Los Alamos Field Office, A316**  
3747 West Jemez Road  
Los Alamos, New Mexico, 87545  
(505) 606-0397/Fax (505) 284-7522

**Date:** JAN 28 2016  
**Symbol:** ENV-DO-16-014  
**LA-UR:** 16-20253

**Locates Action No.:** NA

Ms. Michelle Hunter, 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

GROUND WATER

JAN 28 2016

BUREAU

Dear Ms. Hunter:

**Subject: 2015 Annual Discharge Permit DP-857 Report for the TA-46 Sanitary Wastewater Systems (SWWS) Plant**

This letter and enclosures from the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) are the 2015 Annual Discharge Permit DP-857 Report for the Technical Area (TA)-46 Sanitary Wastewater Systems (SWWS) Plant. In addition to satisfying the annual reporting requirement, this report also contains the required quarterly monitoring data for the 4<sup>th</sup> quarter (October, November, and December) of 2015.

Please contact Robert S. Beers by telephone at (505) 667-7969 or by email at [bbeers@lanl.gov](mailto:bbeers@lanl.gov) if you have questions regarding this report.

Sincerely,

John P. McCann  
Acting Division Leader  
Environmental Protection Division  
Los Alamos National Security LLC

Sincerely,

Jody Pugh  
Assistant Manager  
National Security Missions  
NNSA/Los Alamos Field Office



JPM:JP:RSB/lm

Enclosures:

1. 2015 Annual Discharge Permit DP-857 Report
2. 2015 Communications RE: DP-857
3. Monthly inspection photographs, SERF evaporation basins, 4<sup>th</sup> quarter 2015
4. Compact Disc (CD), GEL Laboratories LLC Analytical Report, Chain of Custody (Upon Request)

Cy: James Hogan, NMED/SWQB, Santa Fe, NM, (E-File)  
John E. Kieling, NMED/HWB, Santa Fe, NM, (E-File)  
Stephen M. Yanicak, NMED/DOE/OB, (E-File)  
Hai Shen, EM-SG, (E-File)  
Jody Pugh, LASO-NS, (E-File)  
Jordan Arnswald, LASO-NS-PI, (E-File)  
Kirsten Laskey, EM-LA, (E-File)  
Craig S. Leasure, PADOPS, (E-File)  
Amy E. De Palma, PADOPS, (E-File)  
Michael T. Brandt, ADESH, (E-File)  
Raeanna Sharp-Geiger, ADESH, (E-File)  
John P. McCann, ENV-DO, (E-File)  
Andrew W. Erickson, UI-DO, (E-File)  
Lawrence V. Chavez, UI-OPS, (E-File)  
Pablo F. C De Vaca, UI-OPS, (E-File)  
Randy E. Vigil, UI-OPS, (E-File)  
Gabriel C. Herrera, ES-UI, (E-File)  
Michael T. Saladen, ENV-CP, (E-File)  
Robert S. Beers, ENV-CP, (E-File)  
[lasomailbox@nnsa.doe.gov](mailto:lasomailbox@nnsa.doe.gov), (E-File)  
[emla.docs@em.doe.gov](mailto:emla.docs@em.doe.gov), (E-File)  
[locatsteam@lanl.gov](mailto:locatsteam@lanl.gov), (E-File)  
[env-correspondence@lanl.gov](mailto:env-correspondence@lanl.gov), (E-File)

# **ENCLOSURE 1**

**2015 Annual Discharge Permit DP-857 Report**

**ENV-DO-16-014**

**LA-UR-16-20253**

**Date:**           **JAN 28 2016**

**ENCLOSURE 1**

**2015 ANNUAL DISCHARGE PERMIT DP-857 REPORT**

*For the*

**TA-46 SANITARY WASTEWATER SYSTEMS (SWWS) PLANT**

*Submitted by:*

*U.S. Department of Energy*

*and*

*Los Alamos National Security, LLC*

*ENV-DO-16-014*

*LA-UR-16-20253*

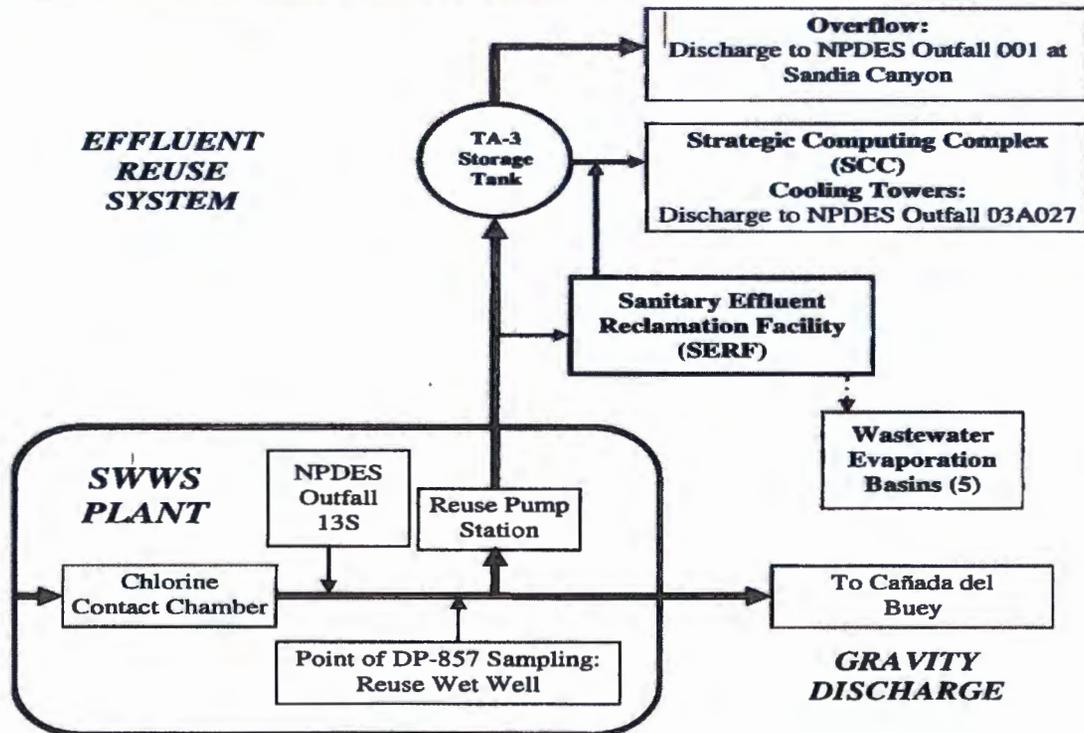
*Date:* JAN 28 2016



**INTRODUCTION**

Sanitary wastewater generated at Los Alamos National Laboratory (the Laboratory) is treated at the Technical Area (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, treated effluent from the SWWS Plant may be discharged through National Pollutant Discharge Elimination System (NPDES) Outfall 13S by gravity to Cañada del Buey or pumped via a force main to a reuse system at 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 2015, all treated effluent from the SWWS Plant, approximately 93.4 million gallons, was pumped to TA-3 and discharged to Sandia Canyon or lost through evaporation at the Strategic Computing Complex (SCC) cooling towers or the Sanitary Effluent Reclamation Facility (SERF) wastewater evaporation basins. This represents an increase from 2014 of approximately 15.5 million gallons (~20%). Approximately 26.9 million gallons of treated effluent was used by the SCC cooling towers during 2015, a decrease of approximately 2.1 million gallons (~7%) from 2014.

**Figure 1, Effluent Reuse System Schematic**



**DISCHARGE PERMIT DP-857 RENEWAL**

In accordance with New Mexico Water Quality Control Commission (NMWQCC) Regulation 3106.F, on August 27, 2002, the U.S. Department of Energy (DOE) and Los Alamos National Security, LLC (DOE/LANS) submitted an application to the New Mexico Environment Department (NMED) for renewal of 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.

On April 6, 2010, the NMED submitted a written request to the Laboratory for a comprehensive and up-to-date application for renewal and modification of Discharge Permit DP-857. In accordance with the NMED's request, on June 30, 2010, DOE/LANS submitted an application for renewal and modification. On August 11, 2010, the NMED deemed the Laboratory's application administratively complete. Public notice (PN1) was completed by DOE/LANS on December 6, 2010.

In August 2012 the NMED issued a working draft discharge permit for review and comment by DOE/LANS. After two technical review sessions DOE/LANS submitted an amended Discharge Permit Application on December 20, 2012 (ENV-RCRA-12-0272). On March 18, 2013, the NMED deemed the amended application administratively complete; public notice (PN1) was completed by DOE/LANS on May 20, 2013. In February 2015 DOE/LANS submitted record (as-built) drawings for the construction of a new synthetically-lined basin on Sigma Mesa to evaporate reverse osmosis (RO) wastewater from the SERF (**Enclosure 2**). In March 2015 DOE/LANS responded to a request from NMED for additional information on piezometer SCPZ-2 in Sandia Canyon (**Enclosure 2**). In March and May 2015 DOE/LANS submitted corrective action plans (2) to address leaks in the primary liners at the Northeast and 5<sup>th</sup> (new) evaporation basins on Sigma Mesa (**Enclosure 2**). Additional information on the status of these corrective actions is provided in this report. Quarterly reports for the first, second, and third quarters in 2015 were submitted to NMED, as required by Discharge Permit DP-857 (**Enclosure 2**).

**DISCHARGE PERMIT DP-857 INSPECTION**

The NMED Ground Water Quality Bureau did not conduct an inspection of Discharge Permit DP-857 facilities in 2015.

**SWWS PLANT UPGRADES & MODIFICATIONS**

In February 2015 a trench drain was installed on the road between the SWWS sludge drying beds. The trench drain collects storm water which is reintroduced to the SWWS facility. On March 24, 2014, the NMED approved LANL's application to operate a Registered Compost Facility at the TA-46 SWWS Plant (Certificate No. 0215151C). In late 2014 the SWWS Compost Facility began full-scale composting of SWWS Plant biosolids generating approximately 42 tons of compost in CY2015. The final compost will be land applied at the Laboratory for landscaping, post construction remediation, and other beneficial uses. As of January 19, 2015, the final disposition of the above-referenced compost was pending.

**SERF AND SERF EVAPORATION BASIN UPGRADES**

In 2014 DOE/LANS completed construction on a fifth (5<sup>th</sup>) SERF Evaporation Basin. The design and construction specifications of the 5<sup>th</sup> basin are essentially the same as the existing four basins. Record drawings were submitted to the NMED in February 2015 (**Enclosure 2**). On March 17, 2015, NMED approved a request from DOE/LANS to place the 5<sup>th</sup> basin into service (email communication, Mr. G. Knutson to Mr. R. Beers).

**EFFLUENT IRRIGATION AT THE SWWS PLANT**

During the months of April through October 2015, 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 employees/contractors on official business and visitors being escorted.

**4<sup>TH</sup> QTR 2015 MONITORING: REUSE WATER, NPDES OUTFALLS 001 & 03A027, CDBO-6**

**Table 1** presents the analytical results from monitoring conducted at the SWWS Plant's reuse wet well, and NPDES Outfalls 001 and 03A027. No water quality data are available for Cañada del Buey alluvial monitoring well CDBO-6 because the well was dry (water level below pump intake) during the 4<sup>th</sup> quarter of 2015. All sample results in **Table 1** are less than NMWQCC Regulation 3103 standards for groundwater with the exception of nitrate+nitrite-nitrogen (NO<sub>3</sub>+NO<sub>2</sub>-N) results from the SWWS Plant reuse wet well and NPDES Outfall 001. Copies of the analytical reports are provided in the **Enclosure 4 (CD)**.

Abnormally high NO<sub>3</sub>+NO<sub>2</sub>-N values at the SWWS Plant reuse wet well and NPDES Outfall 001, and Total Kjeldahl Nitrogen (TKN) values at NPDES Outfall 03A027 were detected in the 4<sup>th</sup> quarter. Confirmation water samples analyzing NO<sub>3</sub>+NO<sub>2</sub>-N, TKN, and ammonia (NH<sub>3</sub>-N), were collected at the SWWS Plant reuse wet well, NPDES Outfall 001 and NPDES Outfall 03A027 on 1/21/2016. The confirmation water sample results will be submitted in the Discharge Permit DP-857 Quarterly Report, First Quarter 2016.

The NO<sub>3</sub>+NO<sub>2</sub>-N result of 19.3 mg/L from the SWWS Plant reuse wet well is not consistent with historical results from that location. From 2010 to 2015 the average NO<sub>3</sub>+NO<sub>2</sub>-N concentration (n=24) was 1.5 mg/L and the maximum concentration 7.5 mg/L.

The NO<sub>3</sub>+NO<sub>2</sub>-N result of 10.5 mg/L from NPDES Outfall 001 is also not consistent with historical results from that location. From 2010 to 2015 the average NO<sub>3</sub>+NO<sub>2</sub>-N concentration (n=26) was 1.0 mg/L and the maximum concentration 4.9 mg/L.

The NMED renewal letter from January 7, 1998, for discharge plan DP-857 contains the following Contingency Plan requirements:

- a) In the event that analysis from the SWWS Plant Reuse Wet Well exceeds a WQCC Regulation 3103 standard, LANL will collect quarterly samples for the exceeded constituent at the Reuse Wet Well and at NPDES Outfall 001 until concentrations of the exceeded constituent are below WQCC Regulation 3103 standards for two consecutive quarters.***

The Contingency Plan does not require DOE/LANS to increase sampling following an exceedance at the SWWS Plant reuse wet well because sampling is already conducted quarterly. Unless otherwise notified by NMED, DOE/LANS will continue to sample the SWWS Plant reuse wet well quarterly.

Table 2 presents the water level in CDBO-6 for the 4<sup>th</sup> quarter of 2015; no measurement was available because the water level in the well was below the top of the pump.

Table 3 presents the volume of water discharged from the following locations during the 4<sup>th</sup> quarter of 2015:

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

Table 4 presents the results from monthly monitoring of the SERF evaporation basins' leak collection ports. Enclosure 3 presents photographs taken of the five SERF evaporation basins during October, November, and December 2015.

- **Southwest (SW) and Northwest (NW) Evaporation Basins.**
  - ✓ Monthly inspections of the SW and NW evaporation basins in October, November, and December 2015 showed all leak collection ports to be dry or contain de minimis amounts of water.
  
- **Southeast (SE) Evaporation Basin.**
  - ✓ On December 8, 2015, during the 4<sup>th</sup> quarter inspection of the Southeast evaporation basin, water was discovered in both leak collection ports.

Previously, during the 3<sup>rd</sup> quarter inspection in August 2015, one leak collection port showed standing water. Prior to August 2015, both ports had been free of water greater than a de minimis quantity for the previous 12 months. Following the August discovery the basin was removed from service, drained, and repaired. It was determined that a joint around the inlet pipe had failed and was the source of the leak. The entire boot was replaced, and the liner thermally fused to the inlet pipe. Post repair inspection was acceptable and the pond was returned to service on September 1, 2015. The monthly inspection performed on September 23, 2015, showed both ports were dry.

The Southeast evaporation basin was removed from service on December 8, 2015. On December 9, 2015, both leak collection ports at the Southeast evaporation basin were pumped dry. The water level in the basin will be allowed to passively lower through evaporation. The leak collection ports will be inspected weekly and pumped, as necessary, to maintain water levels below the top of the 4-in horizontal leak collection pipe. DOE/LANS believe that the leak is occurring near the top of the basin and that by lowering the water level the leak can be mitigated. If water persists in the leak collection ports then DOE/LANS will notify NMED GWQB and prepare a formal corrective action plan to address the leak.

- **Northeast (NE) and 5<sup>th</sup> (new) Evaporation Basins.**
  - ✓ On March 19, 2015, the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) submitted a corrective action plan for repair of a primary liner leak in the Northeast evaporation basin. A copy is provided in **Enclosure 2**. Two attempts in August and November 2015 to repair the primary liner in the Northeast evaporation basin were unsuccessful. Further attempts to repair the Northeast evaporation basin liner were suspended due to ambient air temperatures too low to make repairs. A modified corrective action plan will be submitted to NMED in January 2016.

- ✓ On May 18, 2015, the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) submitted a corrective action plan for repair of a primary liner leak in the 5<sup>th</sup> evaporation basin. A copy is provided in Enclosure 2. Repairs to the 5<sup>th</sup> evaporation basin's primary liner are contingent on completing repairs to the Northeast evaporation basin. Because repairs could not be completed at the Northeast evaporation basin, DOE/LANS were prevented from draining and repairing the 5<sup>th</sup> evaporation basin in accordance with the May 18, 2015, corrective action plan. A modified corrective action plan will be submitted to NMED in January 2016.

**2015 ANNUAL WATER QUALITY MONITORING: SWWS PLANT EFFLUENT**

Tables 5 and 6 present the analytical results from annual monitoring of the TA-46 SWWS Plant's effluent in 2015; samples were collected from the TA-46 SWWS Plant's reuse wet well on November 23, 2015. Copies of the analytical reports from GEL Laboratories LLC are provided in Enclosure 4 (CD).

- Table 5 presents the analytical results from annual monitoring of the SWWS Plant's effluent for general chemistry, metals, and radiologicals. All sample results were less than NMWQCC Regulation 3103 standards for groundwater with the exception of the NO<sub>3</sub> + NO<sub>2</sub>-N result discussed previously.
- Table 6 presents the analytical results from annual monitoring of the SWWS Plant's effluent for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and polychlorinated biphenyls (PCBs). All sample results were nondetect with the exception of the following four VOCs and two SVOCs that were detected at concentrations greater than the analytical laboratory's Method Detection Limit (MDL):
  1. **Bromodichloromethane** was detected at a concentration of 27.6 µg/L. There is no NMWQCC Regulation 3103 standard for bromodichloromethane, but it is listed as a toxic pollutant (20.6.2.7.WW NMAC). The NMED Soil Screening Level for bromodichloromethane is 1.34 µg/L (Risk Assessment Guidance, Table A-1, SSLs).
  2. **Chlorodibromomethane** was detected at a concentration of 19.1 µg/L. There is no NMWQCC Regulation 3103 standard for chlorodibromomethane, and it is not a listed toxic pollutant (20.6.2.7.WW NMAC).

3. **Chloroform** was detected at a concentration of 21.7 µg/L. The NMWQCC Regulation 3103 standard for chloroform in groundwater is 100 µg/L. Chloroform is listed as a toxic pollutant (20.6.2.7.WW NMAC), and the NMED Soil Screening Level for chloroform is 2.29 µg/L (Risk Assessment Guidance, Table A-1, SSLs).
4. **Bromoform (tribromomethane)** was detected at a concentration of 3.54 µg/L. There is no NMWQCC Regulation 3103 standard for bromoform, but it is a listed toxic pollutant (20.6.2.7.WW NMAC). The NMED Soil Screening Level for bromoform is 91.9 µg/L (Risk Assessment Guidance, Table A-1, SSLs).
5. **Diethyl Phthalate** was detected at a concentration of 28.6 µg/L. There is no NMWQCC Regulation 3103 standard for diethylphthalate, but it is a listed toxic pollutant (20.6.2.7.WW NMAC). The NMED Soil Screening Level for diethylphthalate is 14,800 µg/L (Risk Assessment Guidance, Table A-1, SSLs).
6. **Dimethyl Phthalate** was detected at a concentration of 6.77 µg/L. There is no NMWQCC Regulation 3103 standard for dimethyl phthalate, but it is a listed toxic pollutant (20.6.2.7.WW NMAC). There is not an NMED Soil Screening Level for dimethyl phthalate (Risk Assessment Guidance, Table A-1, SSLs).

Bromodichloromethane, chlorodibromomethane, chloroform and bromoform are common by-products—called trihalomethanes—from the disinfection of wastewater effluent with chlorine compounds. Trihalomethanes are regulated under the Safe Drinking Water Act (SDWA) and the maximum contaminant level (MCL) for total trihalomethanes (TTHMs) is 80 µg/L. The TTHMs from the TA-46 SWWS Plant's reuse wet well sample were 72 µg/L.

**2015 ANNUAL WATER QUALITY MONITORING: MONITORING WELL CDBO-6**

During 2015 there was insufficient water in monitoring well CDBO-6 for sampling.

Table 1 Water Quality Data: SWWS Plant Reuse Water, NPDES Outfalls 001 and 03A027, and CDBO-6. 4th Quarter, 2015.

Sampling Location	Field Prep	Sample Date	Sample ID No.	TDS (mg/L)	Chloride (mg/L)	NO3+NO2-N (mg/L)	TKN (mg/L)	NH3-N (mg/L)
<b>SWWS Plant</b>								
SWWS Plant Reuse Wet Well <sup>1</sup>	UF <sup>2</sup>	11/23/2015	SWWS46-15-107042	440	43.10	19.30	0.97	0.21
<b>Sandia Canyon</b>								
NPDES Outfall 001	UF <sup>2</sup>	11/23/2015	SWWS46-15-107040	343	32.60	10.50	0.52	0.18
NPDES Outfall 03A027	UF <sup>2</sup>	11/23/2015	SWWS46-15-107041	440	20.40	3.15	6.45	0.97
<b>Canada del Buey</b>								
CDBO-6	-	Dry <sup>5</sup>						
NM WQCC Regulation 3103 Groundwater Standards (mg/L)				1000	250	10 <sup>3</sup>	NA	NA

**Notes:**

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

<sup>2</sup>UF means a non-filtered sample, F means a filtered sample.

<sup>3</sup>The NM WQCC Regulation 3103 Groundwater Standard is for NO<sub>3</sub>-N.

<sup>4</sup>No Sample means that no sample was collected during the quarter.

<sup>5</sup>Dry means that there was insufficient water in the well for sampling.

<sup>6</sup>Pending means that no results were available for this analyte at the time the report was prepared.

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

**Table 2. Water Level in Cañada del Buey Observation Well (CDBO-6), 4<sup>th</sup> Quarter 2015**

Location	Date	Water Level† (ft)
CDBO-6	11/10/2015	Below top of pump

**Notes:**

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

**Table 3. Discharge Volumes from the TA-46 SWWS Plant, NPDES Outfalls 001 and 03A027, and Reuse Water to the SCC Cooling Towers (in millions of gallons).**

Month	SWWS Plant Effluent to TA-3 <sup>1</sup>	Discharges to NPDES Outfall 001 <sup>2</sup>	Reuse Water to SCC Cooling Towers <sup>3</sup> (estimated)	Discharges to NPDES Outfall 03A027 <sup>4</sup>
Oct-2015	8.893	7.413	1.307	0.999
Nov-2015	9.715	7.444	1.303	1.095
Dec-2015	8.094	8.776	0.692	1.198

**Notes:**

<sup>1</sup>In the 4<sup>th</sup> quarter of 2015, 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 4<sup>th</sup> quarter of 2015.

<sup>4</sup>The SCC cooling towers discharge to NPDES Outfall 03A027 at Samia Canyon.

**Table 4. SERF Evaporation Basins, Inspection Results, Depth to Water in Inspection Ports (ft).**

SERF Basin	Inspection Date	West Port (#1) Depth of Water (ft)	East Port (#2) Depth of Water (ft)
Northwest	10/15/2015	dry	dry
Northeast	10/15/2015	2.8	0.6
Southwest	10/15/2015	dry	dry
Southeast	10/15/2015	dry	dry
5 <sup>th</sup> (new basin)	10/15/2015	2.3	0.6
Northwest	11/19/2015	dry	dry
Northeast	11/19/2015	8.9	8.7
Southwest	11/19/2015	dry	dry
Southeast	11/19/2015	dry	dry
5 <sup>th</sup> (new basin)	11/19/2015	2.4	0.5
Northwest	12/8/2015	dry	dry
Northeast	12/8/2015	6.43	6.42
Southwest	12/8/2015	dry	dry
Southeast	12/8/2015	4.9	4.9
5 <sup>th</sup> (new basin)	12/8/2015	2.3	0.5

Enclosure 1

Table 5. 2015 Effluent Data, SWWS Plant Reuse Wet Well: General Chemistry, Metals, Radiologicals

Field Sample ID	Date Sampled	Analytical Method	Parameter Name	Report Result	Report Units	Lab Qualifier	Detected	Filtered
SWWS46-15-107042	11/23/2015	EPA:300.0	Chloride	43.1	mg/L		Y	N
SWWS46-15-107042	11/23/2015	SW-846:6850	Perchlorate	0.233	ug/L		Y	N
SWWS46-15-107042	11/23/2015	EPA:300.0	Fluoride	0.162	mg/L		Y	N
SWWS46-15-107042	11/23/2015	EPA:300.0	Sulfate	20.4	mg/L		Y	N
SWWS46-15-107042	11/23/2015	EPA:160.1	Total Dissolved Solids	440	mg/L		Y	N
SWWS46-15-107042	11/23/2015	EPA:353.2	Nitrate-Nitrite as Nitrogen	19.3	mg/L		Y	N
SWWS46-15-107042	11/23/2015	EPA:351.2	Total Kjeldahl Nitrogen	0.967	mg/L		Y	N
SWWS46-15-107042	11/23/2015	EPA:350.1	Ammonia as Nitrogen	0.21	mg/L		Y	N
SWWS46-15-107043	11/23/2015	SW-846:6010C	Aluminum	200	ug/L	U	N	Y
SWWS46-15-107043	11/23/2015	SW-846:6020	Antimony	3.0	ug/L	U	N	Y
SWWS46-15-107043	11/23/2015	SW-846:6020	Arsenic	1.79	ug/L	J	Y	Y
SWWS46-15-107043	11/23/2015	SW-846:6010C	Barium	37.8	ug/L		Y	Y
SWWS46-15-107043	11/23/2015	SW-846:6010C	Beryllium	5.0	ug/L	U	N	Y
SWWS46-15-107043	11/23/2015	SW-846:6010C	Boron	50.3	ug/L		Y	Y
SWWS46-15-107043	11/23/2015	SW-846:6020	Cadmium	1.0	ug/L	U	N	Y
SWWS46-15-107043	11/23/2015	SW-846:6010C	Calcium	18.2	mg/L		Y	Y
SWWS46-15-107043	11/23/2015	SW-846:6020	Chromium	10.0	ug/L	U	N	Y
SWWS46-15-107043	11/23/2015	SW-846:6010C	Cobalt	5.0	ug/L	U	N	Y
SWWS46-15-107043	11/23/2015	SW-846:6010C	Copper	5.72	ug/L	J	Y	Y
SWWS46-15-107043	11/23/2015	EPA:335.4	Cyanide (Total)	0.005	mg/L	U	N	Y
SWWS46-15-107043	11/23/2015	SW-846:6010C	Iron	93.1	ug/L	J	Y	Y
SWWS46-15-107043	11/23/2015	SW-846:6020	Lead	2.0	ug/L	U	N	Y
SWWS46-15-107043	11/23/2015	SW-846:6010C	Manganese	8.92	ug/L	J	Y	Y
SWWS46-15-107042	11/23/2015	EPA:245.2	Mercury	0.2	ug/L	U	N	N
SWWS46-15-107043	11/23/2015	EPA:245.2	Mercury	0.2	ug/L	U	N	Y
SWWS46-15-107043	11/23/2015	SW-846:6020	Molybdenum	2.21	ug/L		Y	Y
SWWS46-15-107043	11/23/2015	SW-846:6020	Nickel	0.775	ug/L	J	Y	Y
SWWS46-15-107043	11/23/2015	SW-846:6020	Selenium	5.0	ug/L	U	N	Y
SWWS46-15-107043	11/23/2015	SW-846:6020	Silver	1.0	ug/L	U	N	Y
SWWS46-15-107043	11/23/2015	SW-846:6020	Uranium	0.2	ug/L	U	N	Y
SWWS46-15-107043	11/23/2015	SW-846:6010C	Zinc	50.7	ug/L		Y	Y
SWWS46-15-107042	11/23/2015	EPA:903.1	Radium-226	0.418	pCi/L		Y	N
SWWS46-15-107042	11/23/2015	EPA:904	Radium-228	0.577	pCi/L	U	N	N
SWWS46-15-107042	11/23/2015	EPA:900	Gross alpha	0.044	pCi/L	U	N	N

Notes:

N means the sample was not filtered, Y means the sample was filtered.

U means that the results for this analyte was not detected at the specified reporting limit.

J The result for this analyte was greater than the Method Detection Limit (MDL) but less than the Reporting Limit (RL).

N means the analyte was not detected, Y means the analyte was detected.

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Table 6. 2015 Effluent Monitoring Data, SWWS Plant Reuse Wet Well: VOCs, SVOCs, PCBs

Field Sample ID	Date Sampled	Analytical Method	Parameter Name	Report Result	Report Units	Lab Qualifier	Detected	Filtered
<b>Organics Detected</b>								
SWWS46-15-107042	11/23/2015	SW-846:8270D	Diethylphthalate	28.6	ug/L		Y	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Chlorodibromomethane	19.1	ug/L		Y	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Chloroform	21.7	ug/L		Y	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Bromoform	3.54	ug/L		Y	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Bromodichloromethane	27.6	ug/L		Y	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Dimethyl Phthalate	6.77	ug/L	J	Y	N

<b>Organics Not Detected</b>								
SWWS46-15-107042	11/23/2015	SW-846:8082	Aroclor-1260	0.104	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8082	Aroclor-1254	0.104	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8082	Aroclor-1221	0.104	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8082	Aroclor-1232	0.104	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8082	Aroclor-1248	0.104	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8082	Aroclor-1016	0.104	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8082	Aroclor-1262	0.104	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8082	Aroclor-1242	0.104	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Xylene[1,3-]+Xylene[1,4-]	2.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Ethylbenzene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Styrene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Dichloropropene[cis-1,3-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Dichloropropene[trans-1,3-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Propylbenzene[1-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Butylbenzene[n-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Chlorotoluene[4-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Dichlorobenzene[1,4-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Dibromoethane[1,2-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Acrolein	5.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Chloro-1-propene[3-]	5.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Dichloroethane[1,2-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Propionitrile	5.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Acrylonitrile	5.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Vinyl acetate	5.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Methyl-2-pentanone[4-]	5.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Trimethylbenzene[1,3,5-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Bromobenzene	1.0	ug/L	U	N	N

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Field Sample ID	Date Sampled	Analytical Method	Parameter Name	Report Result	Report Units	Lab Qualifier	Detected	Filtered
SWWS46-15-107042	11/23/2015	SW-846:8260B	Toluene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Chlorobenzene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Chloroethyl vinyl ether[2-]	5.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Trichlorobenzene[1,2,4-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Methacrylonitrile	5.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Chloro-1,3-butadiene[2-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Tetrachloroethene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Butylbenzene[sec-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Dichloropropane[1,3-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Dichloroethene[cis-1,2-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Dichloroethene[trans-1,2-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Methyl tert-Butyl Ether	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Dichlorobenzene[1,3-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Carbon Tetrachloride	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Dichloropropene[1,1-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Hexanone[2-]	5.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Dichloropropane[2,2-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Diethyl Ether	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Tetrachloroethane[1,1,1,2-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Acetone	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Butanol[1-]	50.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Benzene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Trichloroethane[1,1,1-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Bromomethane	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Chloromethane	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Iodomethane	5.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Dibromomethane	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Bromochloromethane	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Chloroethane	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Vinyl Chloride	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Acetonitrile	25.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Methylene Chloride	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Carbon Disulfide	5.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Dichloroethane[1,1-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Dichloroethene[1,1-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Trichlorofluoromethane	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Dichlorodifluoromethane	1.0	ug/L	U	N	N

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Field Sample ID	Date Sampled	Analytical Method	Parameter Name	Report Result	Report Units	Lab Qualifier	Detected	Filtered
SWWS46-15-107042	11/23/2015	SW-846:8260B	Trichloro-1,2,2-trifluoroethane[1,1,2-]	5.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Isobutyl alcohol	50.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Dichloropropane[1,2-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Butanone[2-]	5.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Trichloroethane[1,1,2-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Trichloroethene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Tetrachloroethane[1,1,2,2-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Methyl Methacrylate	5.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Trichlorobenzene[1,2,3-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Hexachlorobutadiene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Naphthalene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Xylene[1,2-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Chlorotoluene[2-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Dichlorobenzene[1,2-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Trimethylbenzene[1,2,4-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Dibromo-3-Chloropropane[1,2-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Trichloropropane[1,2,3-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Ethyl Methacrylate	5.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Butylbenzene[tert-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Isopropylbenzene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8260B	Isopropyltoluene[4-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Nitroaniline[4-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Nitrophenol[4-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Benzyl Alcohol	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Bromophenyl-phenylether[4-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Azobenzene	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Dimethylphenol[2,4-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Methylphenol[4-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Dichlorobenzene[1,4-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Chloroaniline[4-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Oxybis(1-chloropropane)[2,2'-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Phenol	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Pyridine	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Bis(2-chloroethyl)ether	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Bis(2-chloroethoxy)methane	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Bis(2-ethylhexyl)phthalate	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Di-n-octylphthalate	10.0	ug/L	U	N	N

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Field Sample ID	Date Sampled	Analytical Method	Parameter Name	Report Result	Report Units	Lab Qualifier	Detected	Filtered
SWWS46-15-107042	11/23/2015	SW-846:8270D	Hexachlorobenzene	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Anthracene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Trichlorobenzene[1,2,4-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Dichlorophenol[2,4-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Dinitrotoluene[2,4-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Diphenylamine	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Dioxane[1,4-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Pyrene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Dibenzofuran	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Benzo(g,h,i)perylene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Atrazine	10000	ng/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Indeno(1,2,3-cd)pyrene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Benzo(b)fluoranthene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Fluoranthene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Benzo(k)fluoranthene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Acenaphthylene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Chrysene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Benzo(a)pyrene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Dinitrophenol[2,4-]	20.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Dibenz(a,h)anthracene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Dinitro-2-methylphenol[4,6-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Dichlorobenzene[1,3-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Nitrosodiethylamine[N-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Benzo(a)anthracene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Tetrachlorophenol[2,3,4,6-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Chloro-3-methylphenol[4-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Dinitrotoluene[2,6-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Pentachlorobenzene	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Aniline	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Nitrosodimethylamine[N-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Nitroso-di-n-propylamine[N-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Benzoic Acid	20.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Hexachloroethane	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Chlorophenyl-phenyl[4-] Ether	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Hexachlorocyclopentadiene	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Isophorone	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Acenaphthene	1.0	ug/L	U	N	N

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Field Sample ID	Date Sampled	Analytical Method	Parameter Name	Report Result	Report Units	Lab Qualifier	Detected	Filtered
SWWS46-15-107042	11/23/2015	SW-846:8270D	Di-n-butylphthalate	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Phenanthrene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Butylbenzylphthalate	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Fluorene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Hexachlorobutadiene	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Pentachlorophenol	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Trichlorophenol[2,4,6-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Nitroaniline[2-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Nitrophenol[2-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Dinoseb	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Methylnaphthalene[1-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Naphthalene	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Methylnaphthalene[2-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Chloronaphthalene[2-]	1.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Dichlorobenzidine[3,3'-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Benzidine	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Nitroso-di-n-butylamine[N-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Nitrosopyrrolidine[N-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Methylphenol[2-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Dichlorobenzene[1,2-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Chlorophenol[2-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Tetrachlorobenzene[1,2,4,5]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Trichlorophenol[2,4,5-]	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Nitrobenzene	10.0	ug/L	U	N	N
SWWS46-15-107042	11/23/2015	SW-846:8270D	Nitroaniline[3-]	10.0	ug/L	U	N	N

## Notes:

N means the sample was not filtered, Y means the sample was filtered.

U means that the results for this analyte was not detected at the specified reporting limit.

J The result for this analyte was greater than the Method Detection Limit (MDL) but less than the Reporting Limit (RL).

N means the analyte was not detected, Y means the analyte was detected.

## **ENCLOSURE 2**

**2015 Communications RE: DP-857**

**ENV-DO-16-014**

**LA-UR-16-20253**

**Date: JAN 28 2016**



**Environmental Protection Division  
Environmental Compliance Programs (ENV-CP)**  
PO Box 1663, K490  
Los Alamos, New Mexico 87545  
(505) 667-0666

**National Nuclear Security Administration  
Los Alamos Field Office, A316**  
3747 West Jemez Road  
Los Alamos, New Mexico, 87545  
(505) 667-5794/Fax (505) 667-5948

**Date:** FEB 19 2015

**Symbol:** ENV-DO-15-0045

**LA-UR:** 15-20845

**Locates Action No.:** NA

**Mr. Jerry Schoeppner, 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. Schoeppner:

**Subject: Record Drawings, Sigma Mesa Evaporation Pond, Discharge Permit DP-857  
Application for Renewal and Modification**

On August 6, 2014, the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) submitted to the New Mexico Environment Department (NMED) final design drawings and specifications for a fifth evaporation pond on Sigma Mesa (Enclosure 1). Construction of the new evaporation pond was completed in December 2014. Enclosures 2 and 3 contain construction quality control documents for the evaporation pond liner and record (as-built) drawings, respectively.

Presently, DOE/LANS operate four evaporation ponds on Sigma Mesa to evaporate reverse osmosis (RO) wastewater from the Sanitary Effluent Reclamation Facility (SERF). The existing capacity is marginally sufficient to accommodate large precipitation events—for example, the 8.7 inches of rain received in September 2013—and the lower than expected winter evaporation rates. In addition, a fifth evaporation pond will give the SERF the capacity it needs when demand requires increased production.

The new evaporation pond will not be placed into service until DOE/LANS received written acknowledgement from the NMED.

Mr. Jerry Schoeppner  
ENV-DO-15-0045

- 2 -

Please call Robert Beers at (505) 667-7969 if you have questions regarding this information.

Sincerely,



Alison M. Dorries  
Division Leader  
Environmental Protection Division  
Los Alamos National Security LLC

Sincerely,



Gene E. Turner  
Environmental Permitting Manager  
Environmental Projects Office  
Los Alamos Field Office  
U.S. Department of Energy

AMD:GET:RSB/lm

- Enclosures: (1) August 6, 2014, letter to NMED submitting final design drawings and specifications for a fifth Sigma Mesa Evaporation Pond (ENV-DO-14-0208)
- (2) SERF Evaporation Pond, Construction Quality Control Documents and As-Built Panel Layout Drawing
- (3) SERF Evaporation Pond, As-Built Drawings

Cy: James Hogan, NMED/SWQB, Santa Fe, NM, (E-File)  
John E. Kieling, NMED/HWB, Santa Fe, NM, (E-File)  
Stephen M. Yanicak, NMED/DOE/OB, (E-File)  
Hai Shen, NA-LA, (E-File)  
Gene E. Turner, NA-LA, (E-File)  
Kirsten Laskey, NA-LA, (E-File)  
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Lawrence V. Chavez, UI-OPS, (E-File)  
Randy E. Vigil, UI-OPS, (E-File)  
Mell A. Smithour, ES-UI, (E-File)  
Gabriel C. Herrera, ES-UI, (E-File)  
Michael T. Saladen, ENV-CP, (E-File)  
Robert S. Beers, ENV-CP, (E-File)  
[lasomailbox@nnsa.doe.gov](mailto:lasomailbox@nnsa.doe.gov), (E-File)  
[locatsteam@lanl.gov](mailto:locatsteam@lanl.gov), (E-File)  
[env-correspondence@lanl.gov](mailto:env-correspondence@lanl.gov), (E-File)



**Environmental Protection Division  
Environmental Compliance Programs (ENV-CP)**  
PO Box 1663, K490  
Los Alamos, New Mexico 87545  
(505) 667-0666

**National Nuclear Security Administration  
Los Alamos Field Office, A316**  
3747 West Jemez Road  
Los Alamos, New Mexico, 87545  
(505) 667-5794/Fax (505) 667-5948

**Date:** MAR 03 2015

**Symbol:** ENV-DO-15-0071

**LA-UR:** 15-21415

**Locates Action No.:** NA

Mr. Jerry Schoeppner, 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. Schoeppner:

**Subject: Request for Additional Information, Discharge Permit DP-857 Application for Renewal and Modification**

On February 19, 2015, the New Mexico Environment Department (NMED) submitted an email request for additional information to the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) for Discharge Permit Application DP-857 (Enclosure 1). Specifically, the NMED requested the following information on piezometer SCPZ-2 in Sandia Canyon: construction, location, and one year of analytical data. Per the NMED's request, DOE/LANS are providing the following:

- Enclosure 2: SCPZ-2 analytical data
- Enclosure 3: Location map of Sandia Canyon and SCPZ-2
- Enclosure 4: SCPZ-2 construction information

Please contact Robert S. Beers by telephone at (505) 667-7969 or by email at [bbeers@lanl.gov](mailto:bbeers@lanl.gov) if you have questions regarding the enclosed information.

Mr. Jerry Schoeppner  
ENV-DO-15-0071

- 2 -

Sincerely,



Alison M. Dorries  
Division Leader  
Environmental Protection Division  
Los Alamos National Security LLC

Sincerely,



Gene E. Turner  
Environmental Permitting Manager  
Environmental Projects Office  
Los Alamos Field Office  
U.S. Department of Energy

AMD:GET/kt

- Enclosures: (1) Request for additional information, NMED GWQB, DP-857  
(2) SCPZ-2 analytical data  
(2) Location map of Sandia Canyon and SCPZ-2  
(3) SCPZ-2 construction information

Cy:

James Hogan, NMED/SWQB, Santa Fe, NM, (E-File)  
John E. Kieling, NMED/HWB, Santa Fe, NM, (E-File)  
Steven M. Yanicak, NMED/DOE/OB, (E-File)  
Hai Shen, LASO-EP-SG, (E-File)  
Gene E. Turner, NA-LA, (E-File)  
Kirsten Laskey, NA-LA, (E-File)  
Michael A. Lansing, PADOPS, (E-File)  
Amy E. De Palma, PADOPS, (E-File)  
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Raeanna Sharp-Geiger, ADESH, (E-File)  
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Mell A. Smithour, ES-UI, (E-File)  
Philbert Roland Romero, DSESH-UIMS, (E-File)  
Michael T. Saladen, ENV-CP, (E-File)  
Robert S. Beers, ENV-CP, (E-File)  
[lasomailbox@nnsa.doe.gov](mailto:lasomailbox@nnsa.doe.gov), (E-File)  
[locatesteam@lanl.gov](mailto:locatesteam@lanl.gov), (E-File)  
[env-correspondence@lanl.gov](mailto:env-correspondence@lanl.gov), (E-File)



**Environmental Protection Division  
Environmental Compliance Programs (ENV-CP)  
PO Box 1663, K490  
Los Alamos, New Mexico 87545  
(505) 667-0666**

**National Nuclear Security Administration  
Los Alamos Field Office, A316  
3747 West Jemez Road  
Los Alamos, New Mexico, 87545  
(505) 667-5794/Fax (505) 667-5948**

**Date: MAR 19 2015  
Symbol: ENV-DO-15-0081  
LA-UR: 15-21856  
Locates Action No.: NA**

**Ms. Phyllis Bustamante, Acting 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 Ms. Bustamante:**

**Subject: DP-857, Corrective Action Plan, Sigma Mesa Evaporation Basins, Primary Liner Leak**

In accordance with the terms and conditions of Discharge Permit DP-857, the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) are required to conduct monthly inspections of the leak collection ports at the four Sigma Mesa evaporation basins. In the event that liquid is present in a leak collection port, DOE/LANS are required to notify the New Mexico Environment Department (NMED) and submit a corrective action plan for repair or replacement of the liner. On February 18, 2015, DOE/LANS confirmed a leak in the primary liner at the Sigma Mesa Northeast evaporation basin. On February 19, 2015, DOE/LANS provided verbal notification to the NMED. This letter provides the NMED with the required corrective action plan (Enclosure 1).

Ms. Phyllis Bustamante  
ENV-DO-15-0081

- 2 -

Please call Robert Beers at (505) 667-7969 if you have questions regarding this information.

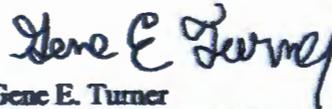
Sincerely,



Alison M. Dorries  
Division Leader  
Environmental Protection Division  
Los Alamos National Security LLC

AMD:GET:RSB/lm

Sincerely,



Gene E. Turner  
Environmental Permitting Manager  
Environmental Projects Office  
Los Alamos Field Office  
U.S. Department of Energy

Enclosures:

(1) Discharge Permit DP-857, SERF Evaporation Basins Corrective Action Plan

Cy: James Hogan, NMED/SWQB, Santa Fe, NM, (E-File)  
John E. Kieling, NMED/HWB, Santa Fe, NM, (E-File)  
Stephen M. Yanicak, NMED/DOE/OB, (E-File)  
Hai Shen, NA-LA, (E-File)  
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Michael T. Saladen, ENV-CP, (E-File)  
Robert S. Beers, ENV-CP, (E-File)  
[lasomailbox@nnsa.doe.gov](mailto:lasomailbox@nnsa.doe.gov), (E-File)  
[locatsteam@lanl.gov](mailto:locatsteam@lanl.gov), (E-File)  
[env-correspondence@lanl.gov](mailto:env-correspondence@lanl.gov), (E-File)



**Environmental Protection Division  
Environmental Compliance Programs (ENV-CP)**  
PO Box 1663, K490  
Los Alamos, New Mexico 87545  
(505) 667-0666

**National Nuclear Security Administration  
Los Alamos Field Office, A316**  
3747 West Jemez Road  
Los Alamos, New Mexico, 87545  
(505) 667-5794/Fax (505) 667-5948

**Date: APR 29 2015**

**Symbol: ENV-DO-15-0110**

**LAUR: 15-22571**

**Locates Action No.: N/A**

Ms. Phyllis Bustamante, Acting 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 Ms. Bustamante:

**Subject: Discharge Permit DP-857 Quarterly Report, First Quarter 2015, TA-46 Sanitary Wastewater Systems Plant**

This letter and enclosures from the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) are the first quarter 2015 Discharge Permit DP-857 report for the Technical Area (TA)-46 Sanitary Wastewater Systems (SWWS) Plant. Quarterly reports are submitted to the New Mexico Environment Department (NMED), Ground Water Quality Bureau, in accordance with the reporting requirements of the January 7, 1998, renewal letter for Discharge Permit DP-857.

Table 1.0 provides water quality data from sampling conducted at the Reuse Wet Well at the TA-46 SWWS Plant and National Pollutant Discharge Elimination System (NPDES) Outfalls 001 and 03A027. No sample was collected from Cañada del Buey Observation Well (CDBO)-6 during the first quarter of 2015 because there was insufficient water in the well. The water level at CDBO-6 is measured each quarter and a sample is collected whenever sufficient water is present.

All sample results presented in Table 1.0 are less than the New Mexico Water Quality Control Commission Regulation 3103 standards for groundwater with the exception of the total dissolved solids (TDS) result of 1220 mg/L from the SWWS Plant Reuse Wet Well. Additional information regarding this result is presented below. Enclosure 1 provides the analytical reports from GEL Laboratories LLC.

The TDS result of 1220 mg/L from the SWWS Plant Reuse Wet Well is not consistent with historical results from that location. From 2010 to 2015 the average TDS concentration ( $n=19$ ) was 456 mg/L and the maximum concentration 539 mg/L. A confirmation sample will be collected in April 2015.

Ms. Phyllis Bustamante  
ENV-DO-15-0110

- 2 -

The SWWS Plant operators are reviewing operational records for the period prior to sample collection to determine if an identifiable event was the cause of the elevated TDS result. Total dissolved solids concentrations of effluent discharged to NPDES Outfalls 001 and 03A027 during the first quarter of 2015 were 353 mg/L and 456 mg/L, respectively, less than 50% of the NM WQCC Regulation 3103 standard of 1000 mg/L. Effluent from the TA-46 SWWS Plant receives tertiary treatment at the TA-3 Sanitary Effluent Reclamation Facility (SERF) prior to reuse or discharge.

The previously-referenced NMED renewal letter from January 7, 1998, for discharge plan DP-857 contains the following Contingency Plan requirements:

- a. *In the event that analysis from the SWSC Reuse Wet Well exceeds a WQCC Regulation 3103 standard, LANL will collect quarterly samples for the exceeded constituent at the SWSC Reuse Wet Well and at NPDES Outfall 001 until concentrations of the exceeded constituent are below WQCC Regulation 3103 standards for two consecutive quarters.*

The Contingency Plan does not require DOE/LANS to increase sampling following an exceedance at the SWWS Plant Reuse Wet Well because sampling is already conducted quarterly. Unless otherwise notified by NMED, DOE/LANS will continue to sample the SWWS Plant Reuse Wet Well quarterly.

Table 2.0 reports the water level in CDBO-6 for the first quarter of 2015.

Table 3.0 reports discharge volumes from the force main at the SWWS Plant to TA-3, the Power Plant NPDES Outfall 001, and the Super Computing Complex (SCC) NPDES Outfall 03A027. In addition, Table 3.0 reports the volume of SWWS Plant reuse water used by the SCC cooling towers during the first quarter of 2015.

Table 4.0 and Enclosure 2 present the results from monthly inspections of the leak collection ports at the SERF evaporation basins located on Sigma Mesa for the first quarter of 2015. All leak collection ports were dry or contained de minimis amounts of water except for the northeast SERF evaporation basin. The northeast basin is discussed below.

- **Northeast Basin.** DOE/LANS submitted a corrective action plan (Enclosure 3) to NMED on March 19, 2015. DOE/LANS would like to provide the following updates to the plan.
  - ✓ Water levels in the west and east leak collection ports are being measured weekly.
  - ✓ Both leak collection ports are being pumped to maintain water levels below the top of the 4-in horizontal leak collection pipe, as feasible. The table below presents inspection dates, depths of standing water in the northeast basin's collection ports, and pumping dates for the 1<sup>st</sup> quarter of 2015.
  - ✓ Water in the northeast basin is being transferred to other basins in lifts of approximately 2 ft. to identify the leak zone.
  - ✓ An outside contractor to DOE/LANS will locate and repair the leak in the northeast basin.

Ms. Phyllis Bustamante  
ENV-DO-15-0110

- 3 -

- ✓ A final completion report will be submitted to the NMED Ground Water Quality Bureau once the leak has been repaired.

**Northeast Evaporation Basin Inspection and Pumping Records, 1<sup>st</sup> Quarter 2015**

Date	West Port (#1) Depth of Standing Water (in.)	East Port (#2) Depth of Standing Water (in.)	Ports Pumped?
4/1/2015	25.5	18.5	
3/27/2015			Yes
3/25/2015	40.4	40.4	
3/23/2015			Yes
3/19/2015	44	46	
3/11/2015	43	44	
3/4/2015	40.4	40.4	
3/3/2015			Yes
2/25/2015	41.6	44	
2/20/2015			Yes
2/18/2015	42.8	44	
2/11/2015			Yes
2/5/2015	41	38.5	
2/4/2015	39	38.5	
1/29/2015	15	0	
1/22/2015	16	0	
1/14/2015	15	0	
1/8/2015	14	0	

On March 20, 2015, DOE/LANS placed into service the recently constructed 5<sup>th</sup> Sigma Mesa Evaporation Basin. Record drawings for the 5<sup>th</sup> basin were submitted to the NMED on February 19, 2015 (ENV-DO-15-0045).

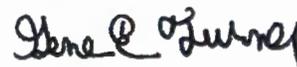
Please contact Robert S. Beers by telephone at (505) 667-7969 or by email at [bbeers@lanl.gov](mailto:bbeers@lanl.gov) if you have questions regarding this quarterly report.

Sincerely,



Alison M. Dorries  
Division Leader  
Environmental Protection Division  
Los Alamos National Security, LLC

Sincerely,



Gene E. Turner  
Environmental Permitting Manager  
Environmental Projects Office  
Los Alamos Field Office  
Department of Energy

Ms. Phyllis Bustamante  
ENV-DO-15-0110

- 4 -

AMD:GET:RSB/lm

Enclosures:

1. GEL Laboratories LLC Certificate of Analysis Reports
2. Monthly inspection photographs of the SERF evaporation basins
3. ENV-DO-15-0081, DP-857, Corrective Action Plan, Sigma Mesa Evaporation Basins

Cy: James Hogan, NMED/SWQB, Santa Fe, NM, (E-File)  
John E. Kieling, NMED/HWB, Santa Fe, NM, (E-File)  
Steven M. Yanicak, NMED/DOE/OB, (E-File)  
Hai Shen, EM-SG, (E-File)  
Gene E. Turner, LASO-NS-LP, (E-File)  
Kirsten Laskey, LASO-SUP, (E-File)  
Michael A. Lansing, PADOPS, (E-File)  
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Michael T. Brandt, ADESH, (E-File)  
Raeanna Sharp-Geiger, ADESH, (E-File)  
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Lawrence V. Chavez, UI-OPS, (E-File)  
Pablo F. C De Vaca, UI-OPS, (E-File)  
Mell A. Smithour, ES-UI, (E-File)  
Gabriel C. Herrera, ES-UI, (E-File)  
Michael T. Saladen, ENV-CP, (E-File)  
Robert S. Beers, ENV-CP, (E-File)  
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[locatsteam@lanl.gov](mailto:locatsteam@lanl.gov), (E-File)  
[env-correspondence@lanl.gov](mailto:env-correspondence@lanl.gov)



**Environmental Protection Division  
Environmental Compliance Programs (ENV-CP)**  
PO Box 1663, K490  
Los Alamos, New Mexico 87545  
(505) 667-0666

**National Nuclear Security Administration  
Los Alamos Field Office, A316**  
3747 West Jemez Road  
Los Alamos, New Mexico, 87545  
(505) 667-5794/Fax (505) 667-5948

**Date: MAY 18 2015**  
**Symbol: ENV-DO-15-0123**  
**LA-UR: 15-23347**  
**Locates Action No.: N/A**

Ms. Phyllis Bustamante, Acting 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 Ms. Bustamante:

**Subject: DP-857, Corrective Action Plan, Sigma Mesa Evaporation Basins, Primary Liner Leak**

In accordance with the terms and conditions of Discharge Permit DP-857, the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) are required to conduct monthly inspections of the leak collection ports at five Sigma Mesa evaporation basins. In the event that liquid is present in a leak collection port, DOE/LANS are required to notify the New Mexico Environment Department (NMED) and submit a corrective action plan for repair or replacement of the liner. On April 22, 2015, DOE/LANS confirmed a leak in the primary liner at the recently constructed 5<sup>th</sup> evaporation basin. On April 23, 2015, DOE/LANS provided verbal notification to NMED (telephone communication, Mr. Gerald Knutson, NMED, and Mr. Robert Beers, LANS). This letter provides the NMED with the required corrective action plan (Enclosure 1).

Ms. Phyllis Bustamante  
ENV-DO-15-0123

- 2 -

Please call Robert Beers at (505) 667-7969 if you have questions regarding this information.

Sincerely,



Alison M. Dorries  
Division Leader  
Environmental Protection Division  
Los Alamos National Security LLC

Sincerely,



Gene E. Turner  
Environmental Permitting Manager  
National Security Missions  
Los Alamos Field Office  
U.S. Department of Energy

AMD:GET:RSB/lm

Enclosure: (1) Discharge Permit DP-857, SERF Evaporation Basins Corrective Action Plan

Cy: James Hogan, NMED/SWQB, Santa Fe, NM, (E-File)  
John E. Kieling, NMED/HWB, Santa Fe, NM, (E-File)  
Stephen M. Yanicak, NMED/DOE/OB, (E-File)  
Hai Shen, LA-EM, (E-File)  
Gene E. Turner, NSM, (E-File)  
Kirsten Laskey, LA-EM, (E-File)  
Michael A. Lansing, PADOPS, (E-File)  
Amy E. De Palma, PADOPS, (E-File)  
Michael T. Brandt, ADESH, (E-File)  
Raeanna Sharp-Geiger, ADESH, (E-File)  
Alison M. Dorries, ENV-DO, (E-File)  
Andrew W. Erickson, UI-DO, (E-File)  
Lawrence V. Chavez, UI-OPS, (E-File)  
Pablo F. C De Vaca, UI-OPS, (E-File)  
Mell A. Smithour, ES-UI, (E-File)  
Gabriel C. Herrera, ES-UI, (E-File)  
Michael T. Saladen, ENV-CP, (E-File)  
Robert S. Beers, ENV-CP, (E-File)  
[LASOmailbox@nnsa.doe.gov](mailto:LASOmailbox@nnsa.doe.gov), (E-File)  
[locatsteam@lanl.gov](mailto:locatsteam@lanl.gov), (E-File)  
[env-correspondence@lanl.gov](mailto:env-correspondence@lanl.gov), (E-File)



**Environmental Protection Division**  
 Environmental Compliance Programs (ENV-CP)  
 PO Box 1663, K490  
 Los Alamos, New Mexico 87545  
 505-667-0666

**National Nuclear Security Administration**  
 Los Alamos Field Office, A316  
 3747 West Jemez Road  
 Los Alamos, New Mexico, 87545  
 (505) 667-5794/FAX (505) 667-5948

**Date:** JUL 28 2015

**Symbol:** ENV-DO-15-0205

**LA-UR:** 15-25202

**Locates Action No.:** NA

Ms. Michelle Hunter, Acting 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 Ms. Hunter:

**Subject: Discharge Permit DP-857 Quarterly Report, Second Quarter 2015, TA-46 Sanitary Wastewater Systems Plant**

This letter and enclosures from the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) are the second quarter 2015 Discharge Permit DP-857 report for the Technical Area (TA)-46 Sanitary Wastewater Systems (SWWS) Plant. Quarterly reports are submitted to the New Mexico Environment Department (NMED), Ground Water Quality Bureau, in accordance with the reporting requirements of the January 7, 1998, renewal letter for Discharge Permit DP-857.

Table 1.0 provides water quality data from sampling conducted at the TA-46 SWWS Plant's reuse wet well and National Pollutant Discharge Elimination System (NPDES) Outfalls 001 and 03A027. No sample was collected from Cañada del Buey Observation Well (CDBO)-6 during the second quarter because there was insufficient water in the well. The water level at CDBO-6 is measured each quarter and a sample is collected whenever sufficient water is present. 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 presents copies of the GEL Laboratories LLC analytical reports.

An anomalous total dissolved solids (TDS) result from the SWWS Plant Reuse Wet Well was reported to NMED in the first quarter 2015 Discharge Permit report (April 29, 2015; ENV-DO-15-0110). DOE/LANS collected a confirmation sample from the SWWS Plant Reuse Wet Well on April 30, 2015

Ms. Michelle Hunter  
ENV-DO-15-0205

- 2 -

(See Table 1.0). The TDS concentration reported by GEL Laboratories LLC was 454 mg/L, consistent with the average TDS concentration of 456 mg/L from that location over the past five years. Table 2.0 reports that the water level in CDBO-6 for the second quarter of 2015 was below the top of the pump (dry).

Table 3.0 reports discharge volumes from the SWWS Plant's force main to TA-3, the Power Plant's NPDES Outfall 001, and the Super Computing Complex (SCC) NPDES Outfall 03A027. In addition, Table 3.0 reports the volume of SWWS Plant reuse water used by the SCC cooling towers during the second quarter of 2015.

Table 4.0 and Enclosure 2 present the results from monthly inspections of the leak collection ports at the five SERF evaporation basins located on Sigma Mesa for the second quarter of 2015. All leak collection ports were dry or contained de minimis amounts of water except for the northeast SERF evaporation basin and the new 5<sup>th</sup> evaporation basin. These two are discussed below.

- **Northeast Basin.** DOE/LANS submitted a corrective action plan to NMED on March 19, 2015 (ENV-DO-15-0081). DOE/LANS would like to provide the following updates to the plan.
  - ✓ Water levels in the west and east leak collection ports continue to be measured weekly.
  - ✓ Both inspection ports are being pumped, as necessary, to maintain water levels below the top of the 4-in horizontal leak collection pipe. Ports were pumped on March 23, April 13, May 19, and July 2, 2015.
  - ✓ Water in the NE basin is being transferred to other basins in an ongoing process of lowering the water level in preparation for repair. Emptying of the basin has been delayed due to heavy monsoonal rain and high humidity in late June and early July 2015.
  - ✓ An outside contractor has been selected to locate and repair the leak in the NE basin. Work is expected to be completed by September 1, 2015.
- **5<sup>th</sup> Basin.** DOE/LANS submitted a corrective action plan to NMED on May 18, 2015 (ENV-DO-15-0123). DOE/LANS would like to provide the following updates to the plan.
  - ✓ On April 23, 2015, the 5<sup>th</sup> basin was removed from service and the NMED was provided with verbal notification of the primary liner leak.
  - ✓ Water levels in the west and east leak collection ports continue to be measured weekly.
  - ✓ Both inspection ports were pumped on May 19, 2015.
  - ✓ On June 29, 2015, a contractor identified the source of the leak in the 5<sup>th</sup> basin as the boot surrounding the inlet pipe. The pipe boot was repaired and all seams were surveyed for integrity. The contractor certified the basin leak-free and on June 30, 2015, the 5<sup>th</sup> basin was returned to service.

**Ms. Michelle Hunter**  
**ENV-DO-15-0205**

- 3 -

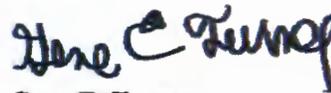
Please contact Robert S. Beers by telephone at (505) 667-7969 or by email at [rbeers@lanl.gov](mailto:rbeers@lanl.gov) if you have questions regarding this quarterly report.

Sincerely,



Alison M. Dorries  
 Division Leader  
 Environmental Protection Division  
 Los Alamos National Security, LLC

Sincerely,



Gene E. Turner  
 Environmental Permitting Manager  
 National Security Missions  
 Los Alamos Field Office  
 U.S. Department of Energy

AMD:GET:MTS:RSB/lm

Enclosures:

1. GEL Laboratories LLC Certificate of Analysis Reports
2. Monthly inspection photographs of the SERF evaporation basins

Cy: James Hogan, NMED/SWQB, Santa Fe, NM  
 John E. Kieling, NMED/HWB, Santa Fe, NM  
 Steven M. Yanicak, NMED/DOE/OB, (E-File)  
 Hai Shen, EM-SG, (E-File)  
 Gene E. Turner, LASO-NS-LP, (E-File)  
 Jordan Arnsward, LASO-NS-PI, (E-File)  
 Kirsten Laskey, LASO-SUP, (E-File)  
 Craig S. Leasure, PADOPS, (E-File)  
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 Pablo F. C De Vaca, UI-OPS, (E-File)  
 Gabriel C. Herrera, ES-UI, (E-File)  
 Michael T. Saladen, ENV-CP, (E-File)  
 Robert S. Beers, ENV-CP, (E-File)  
[lasomailbox@nnsa.doe.gov](mailto:lasomailbox@nnsa.doe.gov), (E-File)  
[locatsteam@lanl.gov](mailto:locatsteam@lanl.gov), (E-File)  
[env-correspondence@lanl.gov](mailto:env-correspondence@lanl.gov), (E-File)



**Environmental Protection Division  
Environmental Compliance Programs (ENV-CP)**  
PO Box 1663, K490  
Los Alamos, New Mexico 87545  
(505) 667-0666

**National Nuclear Security Administration  
Los Alamos Field Office, A316**  
3747 West Jemez Road  
Los Alamos, New Mexico, 87545  
(505) 667-5794/Fax (505) 667-5948

**Date:** OCT 22 2015

**Symbol:** ENV-DO-15-0301

**LA-UR:** 15-27686

**Locates Action No.:** N/A

Ms. Michelle Hunter, 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 Ms. Hunter:

**Subject: Discharge Permit DP-857 Quarterly Report, Third Quarter 2015, TA-46 Sanitary Wastewater Systems Plant**

This letter and enclosures from the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) are the third quarter 2015 Discharge Permit DP-857 report for the Technical Area (TA)-46 Sanitary Wastewater Systems (SWWS) Plant. Quarterly reports are submitted to the New Mexico Environment Department (NMED), Ground Water Quality Bureau, in accordance with the reporting requirements of the January 7, 1998, renewal letter for Discharge Permit DP-857.

Table 1.0 provides water quality data from sampling conducted at the TA-46 SWWS Plant's reuse wet well and National Pollutant Discharge Elimination System (NPDES) Outfalls 001 and 03A027. No sample was collected from Cañada del Buey Observation Well (CDBO)-6 during the third quarter because there was insufficient water in the well. The water level at CDBO-6 is measured each quarter and a sample is collected whenever sufficient water is present. 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 presents copies of the GEL Laboratories LLC analytical reports.

Table 2.0 reports that the water level in CDBO-6 for the third quarter of 2015 was below the top of the pump (dry).

Ms. Michelle Hunter  
ENV-DO-15-0301

- 2 -

Table 3.0 reports discharge volumes from the SWWS Plant's force main to TA-3, the Power Plant's NPDES Outfall 001, and the Super Computing Complex (SCC) NPDES Outfall 03A027. In addition, Table 3.0 reports the volume of SWWS Plant reuse water used by the SCC cooling towers during the third quarter of 2015.

Table 4.0 and Enclosure 2 present the results from monthly inspections of the leak collection ports at the five SERF evaporation basins located on Sigma Mesa for the third quarter of 2015. All leak collection ports were dry or contained de minimis amounts of water except for three basins: Southeast, Northwest, and the new 5<sup>th</sup>. Details on the status of these basins are provided below.

- **Southeast Basin.** An August 6, 2015, inspection of the east (#2) leak collection port showed approximately 2.1 ft. of standing water. The presence of water in this port was unusual since both ports had been free of water greater than a de minimis quantity for the previous 12 months. Following this discovery the pond was removed from service, drained, and evaluated by a qualified lining contractor. It was determined that a joint around the inlet pipe had failed and was the source of the leak. The entire boot was replaced, and the liner thermally fused to the inlet pipe. Post repair inspection was acceptable and the pond was returned to service on September 1, 2015. The monthly inspection performed on September 23, 2015, showed both ports remain dry.
- **Northeast Basin.** In March 2015 DOE/LANS submitted to NMED a Corrective Action Plan (CAP) for a leak in the primary liner at the Northeast evaporation basin (ENV-DO-15-0081). The CAP identified the steps necessary to locate and repair the leak by September 1, 2015. On August 26, 2015, a contractor completed repairs to the Northeast evaporation basin's primary liner. The basin was immediately returned to service.

Water that accumulated between the primary and secondary liners during the leak was pumped from the leak collection ports on several occasions. Unfortunately, it appears that the contractor was not successful in finding all the leaks in the Northeast evaporation basin because even after pumping the leak collection ports on multiple occasions water continued to accumulate in them.

In summary, the first attempt to repair the primary liner leak at the Northeast evaporation basin was not successful. As a result, the pond was removed from service, drained, cleaned, and evaluated by LANL Craft personnel. Additional defects were identified. A second attempt at repairing the leak is scheduled for October 2015. NMED was informed of this situation in an email from Mr. Robert Beers (ENV-CP) to Mr. Gerald Knutson (NMED GWQB) on September 24, 2015.

- **5<sup>th</sup> Basin.** In May 2015 DOE/LANS submitted to NMED a CAP for a leak in the primary liner at the new 5<sup>th</sup> evaporation basin (ENV-DO-15-0123). The CAP identified the steps necessary to locate and repair the leak by November 30, 2015. The contractor responsible for the liner installation performed an inspection of the pond beginning June 22, 2015, and determined that the source of the leak was a boot joint around the inlet pipe. The leak was repaired and the pond was returned to service on June 29, 2015. The ports remained dry until August 26, 2015, when 28 inches of water was found in the west (#1) inspection port. It appears that the initial repair may not have corrected all possible leaks. Due to the delays in completing repairs to the Northeast evaporation basin there is some potential that DOE/LANS will not complete repairs to the 5<sup>th</sup> evaporation basin by November 30<sup>th</sup>.

**Ms. Michelle Hunter**  
**ENV-DO-15-0301**

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The 5<sup>th</sup> basin cannot be drained and prepared for repair until the Northeast evaporation basin is returned to service. NMED was informed of this situation in a telephone call from Mr. Robert Beers (ENV-CP) to Mr. Gerald Knutson (NMED GWQB) on October 8, 2015.

DOE/LANS will provide the NMED GWQB with updates on the status of these three basins, as appropriate.

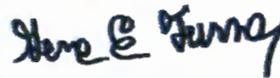
Please contact Robert S. Beers by telephone at (505) 667-7969 or by email at [bbeers@lanl.gov](mailto:bbeers@lanl.gov) if you have questions regarding this quarterly report.

Sincerely,



**Alison M. Dorries**  
 Division Leader  
 Environmental Protection Division  
 Los Alamos National Security, LLC

Sincerely,



**Gene E. Turner**  
 Environmental Permitting Manager  
 National Security Missions  
 Los Alamos Field Office  
 U.S. Department of Energy

AMD:GET:MTS:RSB/lm

**Enclosures:**

1. GEL Laboratories LLC Certificate of Analysis Reports
2. Monthly inspection photographs of the SERF evaporation basins

Cy: James Hogan, NMED/SWQB, Santa Fe, NM, (E-File)  
 John E. Kieling, NMED/HWB, Santa Fe, NM, (E-File)  
 Steven M. Yanicak, NMED/DOE/OB, (E-File)  
 Hai Shen, EM-SG, (E-File)  
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 Randy E. Vigil, UI-OPS, (E-File)  
 Pablo F. C De Vaca, UI-OPS, (E-File)  
 Gabriel C. Herrera, ES-UI, (E-File)  
 Michael T. Saladen, ENV-CP, (E-File)

**Ms. Michelle Hunter**  
**ENV-DO-15-0301**

**- 4 -**

Cy (continued):

Robert S. Beers, ENV-CP, (E-File)  
[lasomailbox@nnsa.doe.gov](mailto:lasomailbox@nnsa.doe.gov), (E-File)  
[emla.docs@cm.doe.gov](mailto:emla.docs@cm.doe.gov), (E-File)  
[locatesteam@lanl.gov](mailto:locatesteam@lanl.gov), (E-File)  
[epccat@lanl.gov](mailto:epccat@lanl.gov), (E-File)



**Environmental Protection Division**  
**Environmental Compliance Programs (ENV-CP)**  
 PO Box 1663, K490  
 Los Alamos, New Mexico 87545  
 (505) 667-0666

**National Nuclear Security Administration**  
**Los Alamos Field Office, A316**  
 3747 West Jemez Road  
 Los Alamos, New Mexico, 87545  
 (505) 667-5794/Fax (505) 667-5948

**Date:** JAN 26 2015  
**Symbol:** ENV-DO-15-0012  
**LA-UR:** 14-29678  
**Locates Action No.:** N/A

Mr. Jerry Schoeppner, 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. Schoeppner:

**Subject: 2014 Annual Discharge Permit DP-857 Report for the TA-46 Sanitary Wastewater Systems (SWWS) Plant**

This letter and enclosures from the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) are the 2014 Annual Discharge Permit DP-857 Report for the Technical Area (TA)-46 Sanitary Wastewater Systems (SWWS) Plant. In addition to satisfying the annual reporting requirement, this report also contains the required quarterly monitoring data for the 4<sup>th</sup> quarter (October, November, and December) of 2014.

Please contact Robert S. Beers by telephone at (505) 667-7969 or by email at [bbeers@lanl.gov](mailto:bbeers@lanl.gov) if you have questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Alison M. Dorries'.

Alison M. Dorries  
 Division Leader  
 Environmental Protection Division  
 Los Alamos National Security LLC

Sincerely,

A handwritten signature in black ink, appearing to read 'Gene E. Turner'.

Gene E. Turner  
 Environmental Permitting Manager  
 Environmental Projects Office  
 Los Alamos Field Office  
 U.S. Department of Energy

Mr. Jerry Schoeppner  
ENV-DO-15-0012

- 2 -

AMD:GET:RSB/lm

Enclosures:

1. 2014 Annual Discharge Permit DP-857 Report
2. 2014 Communications RE: DP-857
3. Monthly inspection photographs, SERF evaporation basins, 4<sup>th</sup> quarter 2014
4. Compact Disc (CD), GEL Laboratories LLC Analytical Report, Chain of Custody: 2015-392

Cy: James Hogan, NMED/SWQB, Santa Fe, NM, (E-File)  
John E. Kieling, NMED/HWB, Santa Fe, NM, (E-File)  
Stephen M. Yanicak, NMED/DOE/OB, (E-File)  
Hai Shen, NA-LA, (E-File)  
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Pablo F. C De Vaca, UI-OPS, (E-File)  
Mell A. Smithour, ES-UI, (E-File)  
Michael T. Saladen, ENV-CP, (E-File)  
Robert S. Beers, ENV-CP, (E-File)  
[lasomailbox@nnsa.doe.gov](mailto:lasomailbox@nnsa.doe.gov), (E-File)  
[locatsteam@lanl.gov](mailto:locatsteam@lanl.gov), (E-File)  
[env-correspondence@lanl.gov](mailto:env-correspondence@lanl.gov), (E-File)

# **ENCLOSURE 3**

**Monthly Inspection Photographs, SERF Evaporation  
Basins**

**4<sup>th</sup> Quarter 2015**

**ENV-DO-16-014**

**LA-UR-16-20253**

**Date: JAN 2 8 2016**

Monthly Inspection Record: October 15, 2015

---

**Northwest Evaporation Basin (Basin 1)**

Inspection Sump #1: Dry

Inspection Sump #2: Dry



**Northeast Evaporation Basin (Basin 2)**-Basin was emptied to facilitate cleaning and repair.

Inspection Sump #1: 2.8 ft of standing water

Inspection Sump #2: 0.6 ft of standing water



Monthly Inspection Record: October 15, 2015

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**Southwest Evaporation Basin (Basin 3)**

Inspection Sump #1: Dry

Inspection Sump #2: Dry



**Southeast Evaporation Basin (Basin 4)**

Inspection Sump #1: Dry

Inspection Sump #2: Dry



**Monthly Inspection Record: October 15, 2015**

---

**5<sup>th</sup> Evaporation Basin (Basin 5)**

Inspection Sump #1: 2.3 ft of standing water

Inspection Sump #2: 0.6 ft of standing water



SERF Evaporation Basins

Monthly Inspection Record: November 19, 2015

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**Northwest Evaporation Basin (Basin 1)**

Inspection Sump #1: Dry

Inspection Sump #2: Dry



**Northeast Evaporation Basin (Basin 2)**

Inspection Sump #1: 8.9 ft of standing water

Inspection Sump #2: 8.7 ft of standing water



SERF Evaporation Basins

Monthly Inspection Record: November 19, 2015

---

**Southwest Evaporation Basin (Basin 3)**

Inspection Sump #1: Dry

Inspection Sump #2: Dry



**Southeast Evaporation Basin (Basin 4)**

Inspection Sump #1: Dry

Inspection Sump #2: Dry



**Monthly Inspection Record: November 19, 2015**

---

**5<sup>th</sup> Evaporation Basin (Basin 5)**

Inspection Sump #1: 2.4 ft of standing water

Inspection Sump #2: 0.5 ft of standing water



**Monthly Inspection Record: December 8, 2015**

---

**Northwest Evaporation Basin (Basin 1)**

Inspection Sump #1: Dry

Inspection Sump #2: Dry



**Northeast Evaporation Basin (Basin 2)**

Inspection Sump #1: 6.43 ft of standing water

Inspection Sump #2: 6.42 ft of standing water



SERF Evaporation Basins

Monthly Inspection Record: December 8, 2015

---

**Southwest Evaporation Basin (Basin 3)**

Inspection Sump #1: Dry

Inspection Sump #2: Dry



**Southeast Evaporation Basin (Basin 4)**

Inspection Sump #1: 4.9 ft of standing water

Inspection Sump #2: 4.9 ft of standing water



**Monthly Inspection Record: December 8, 2015**

---

**5<sup>th</sup> Evaporation Basin (Basin 5)**

Inspection Sump #1: 2.3 ft of standing water

Inspection Sump #2: 0.5 ft of standing water



## **ENCLOSURE 4**

**Compact Disc (CD), GEL Laboratories LLC Analytical  
Report, Chain of Custody**

**ENV-DO-16-014**

**LA-UR-16-20253**

**Date: JAN 28 2016**