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Date: **JAN 30 2013**
Refer To: ENV-RCRA-13-0020
LAUR: 13-20410

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: 2012 ANNUAL DISCHARGE PERMIT DP-857 REPORT FOR THE TA-46
SANITARY WASTEWATER SYSTEMS (SWWS) PLANT**

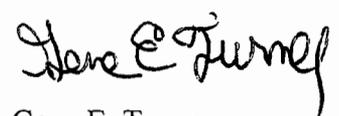
Enclosed from the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) is the 2012 Annual Discharge Permit DP-857 Report for the Technical Area (TA)-46 Sanitary Wastewater Systems (SWWS) Plant. In addition to satisfying the annual reporting requirements, this report also contains the required quarterly monitoring data for the 4th quarter (October, November, and December) of 2012.

Please contact Robert S. Beers by telephone at (505) 667-7969 or by email at bbeers@lanl.gov if you have questions regarding this 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 Site Office
Department of Energy

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Enclosures:

1. 2012 Annual Discharge Permit DP-857 Report
2. 2012 Communications RE: DP-857
3. Monthly inspection photographs of SERF evaporation basins, 4th quarter 2012
4. General Engineering Labs (GEL), Analytical Laboratory Data Reports

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ENCLOSURE 1

2012 Annual Discharge Permit DP-857 Report

ENV-RCRA-13-0020

LAUR-13-20410

Date: JAN 3 0 2013

ENCLOSURE 1

2012 ANNUAL DISCHARGE PERMIT DP-857 REPORT

For the

TA-46 SANITARY WASTEWATER SYSTEMS (SWWS) PLANT

Submitted by:

US Department of Energy/National Nuclear Security Administration

and

Los Alamos National Security, LLC

ENV-RCRA-13-0020

LAUR-13-20410

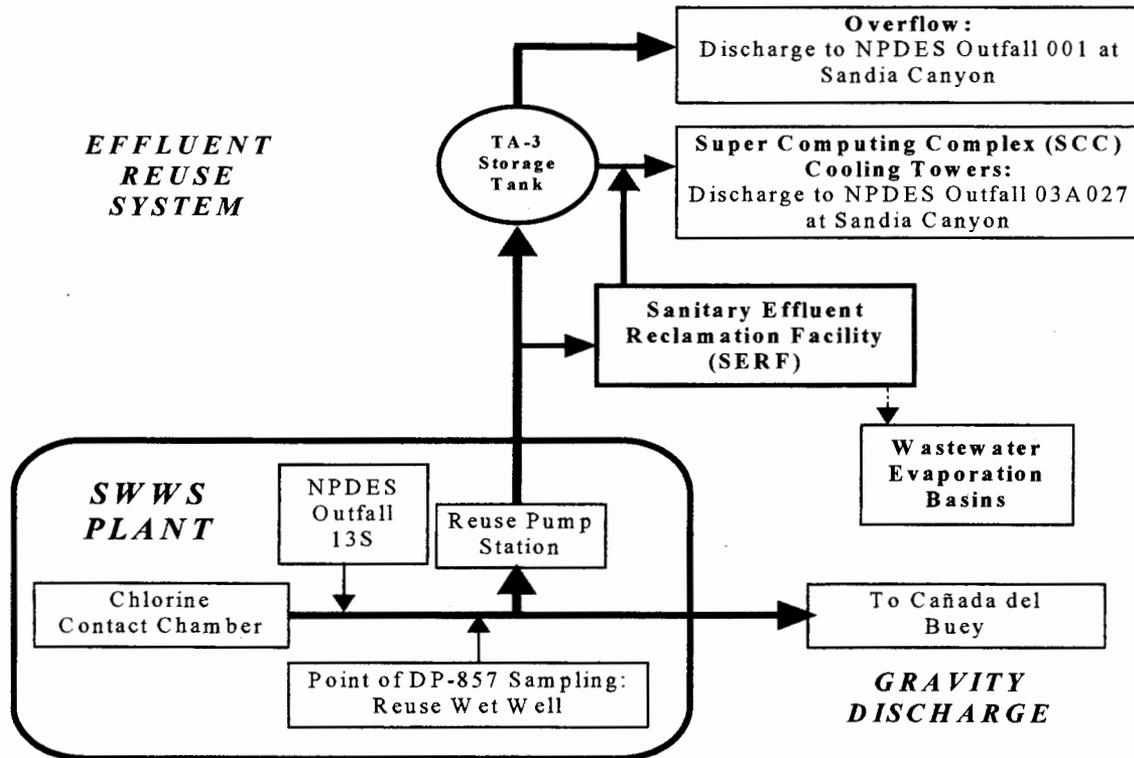
January 25, 2013



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 1.0**, 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 2012, all treated effluent from the SWWS Plant (approximately 99.62 million gallons) was pumped to TA-3 and discharged to Sandia Canyon through NPDES Outfall 001. Treated effluent was used by the Super Computing Complex (SCC) cooling towers during the 4th quarter of 2012 as the expanded Sanitary Effluent Reclamation Facility (SERF) was commissioned into service.

Figure 1.0, 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 Laboratory submitted an application to the New Mexico Environment Department (NMED) for renewal of Groundwater 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 Groundwater Discharge Permit DP-857. In accordance with the NMED's request, on June 30, 2010, the Laboratory submitted an application for renewal and modification. On August 11, 2010, the NMED deemed the Laboratory's application administratively complete. As required by regulation (20.6.2.3108 NMAC), the Laboratory implemented public notice through the posting of signs at the facility, the mailing of flyers to adjacent property owners, the posting of an off-site flyer, and the placement of a display ad in the Los Alamos Monitor. Public notice was completed by the Laboratory on December 6, 2010.

In 2012, the NMED issued one request for additional information for Discharge Permit DP-857 renewal. A copy of this request, including the Laboratory's response, has been provided in **Enclosure 2.0**.

In 2012, the NMED issued a working draft discharge permit for the Laboratory's review and comment (**Enclosure 2.0**). On October 16 & 18, 2012, the NMED hosted two technical review sessions with the Laboratory and the US Department of Energy (DOE) to discuss the working draft permit. Following on these two meetings the Laboratory and DOE submitted amendments to above-referenced April 6, 2010, discharge permit application (**Enclosure 2.0**).

DISCHARGE PERMIT DP-857 INSPECTION

The NMED Ground Water Quality Bureau conducted an inspection of Discharge Permit DP-857 facilities on Tuesday, March 20, 2012. The Laboratory requested a copy of the inspection report from the NMED on May 10, 2012, but to-date none has been provided (**Enclosure 2.0**).

DISCHARGE PERMIT DP-857 NOTIFICATIONS

In 2012, the Laboratory and DOE submitted two Notices of Changed Conditions to the NMED. Both notices were for the expansion of the SERF and the Sigma Mesa Evaporation Basins (**Enclosure 2.0**)

SWWS PLANT UPGRADES & MODIFICATIONS

During 2012, no significant upgrades or modifications were made to the TA-46 SWWS Plant. In 2012, the Laboratory made the following notifications to the NMED regarding a planned change in the sewage sludge disposal practice at the SWWS Plant.

- The Laboratory submitted a Composting Facility Registration Form to the NMED Solid Waste Bureau (**Enclosure 2.0**).
- The Laboratory submitted a Notice of Intent (NOI) to Discharge for a sludge composting facility at the TA-46 SWWS Plant and the beneficial reuse of composted sludge at Laboratory sites (**Enclosure 2.0**). The NMED's response letter to the above-referenced NOI is also enclosed (**Enclosure 2.0**).

SERF AND SERF EVAPORATION BASIN UPGRADES

On June 15, 2012, the Laboratory completed construction of an expansion of the SERF and the SERF Evaporation Basins. Commissioning was finished on July 31, 2012. The expansion includes the addition of the following new components:

- Three new microfilter treatment units
- Three new reverse osmosis (RO) treatment units
- Process tanks
- A 400,000 gallon blended water storage tank
- Two additional SERF Evaporation Basins on Sigma Mesa

SERF product water is blended with reuse water from the TA-46 SWWS Plant at a ratio of approximately two parts SERF to one part SWWS (2:1). The expanded SERF is capable of producing blended water for reuse by cooling towers at approximately 300 gallons per minute (gpm), a significant increase over the previous production rate of approximately 100 gpm.

In order to accommodate the additional wastewater (RO reject) generated by the expanded SERF, the capacity of the SERF evaporation basins on Sigma Mesa was increased by approximately two-fold. Two additional evaporation basins were constructed adjacent to the existing basins. The new basin's design is the same as the existing basins: two synthetic liners with a leak collection and monitoring system. Design drawings and specifications for the above-referenced expansion of SERF were submitted to the NMED in March and July 2012 (**Enclosure 2.0**).

EFFLUENT IRRIGATION AT THE SWWS PLANT

During the months of April through October 2012, effluent from the SWWS Plant was re-used to irrigate approximately 1/3 acre of turf grass on the plant's grounds. The irrigated grass is within the confines of the SWWS Plant's perimeter security fence and access is restricted to Laboratory employees/contractors on official business and visitors being escorted by SWWS Plant personnel.

4TH QTR 2012 MONITORING: REUSE WATER, NPDES OUTFALLS 001 & 03A027, CDBO-6

Table 1.0 presents the analytical results from monitoring conducted at the SWWS Plant's reuse wet well, 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 4th quarter of 2012. All sample results in Table 1.0 are less than NMWQCC Regulation 3103 standards for groundwater. Copies of the analytical reports are provided in the **Enclosure 4.0**.

Table 2.0 presents the water level in CDBO-6 for the 4th quarter of 2012; no measurement was available because the water level in the well was below the top of the pump.

Table 3.0 presents the volume of water discharged from the following locations during the 4th quarter of 2012:

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

Table 4.0 presents the results from monthly monitoring of the SERF Evaporation Basins' leak inspection standpipes. **Enclosure 3.0** presents photographs taken of the four leak inspection standpipes during October and November 2012. No photographs are available for the December 2012 inspection.

The status of each of the four SERF Evaporation Basins in December 2012 is reviewed below.

- **SW Evaporation Basin.** Water was discovered in one of the southwest (SW) basin's leak collection standpipes on August 29, 2012. The NMED was informed in the October 2012 DP-857 Quarterly Report (ENV-RCRA-12-0239).

Following the discovery corrective actions were taken to (1) stop adding additional wastewater to the SW basin, (2) pump dry the SW basin's leak collection standpipes to verify the leak, (3) increase inspection frequency, and (4) collect water quality samples from the SW basin standpipes. Analytical results were reported to the NMED on November 2, 2012 (**Enclosure 2.0**). The leak in the SW basin has been isolated to a location in the upper 20% of the basin. Accordingly, the water level in the basin is being actively managed to maintain water levels in the lower 80% of the basin until repairs can be completed. Inspection results during the 4th quarter showed the leak collection standpipes to be dry or contain de minimis amounts of condensate water.

- **SE Evaporation Basin.** Water appeared in southeast (SE) basin's leak collection standpipe in October 2012 after the basin was filled. The leak collection standpipes were pumped prior to the November 2012 inspection but refilled in advance of the December 2012 inspection. A leak at the overflow pipe boot is suspected. The water level will be reduced to below the overflow pipe and the standpipes will be pumped to confirm the leak location.
- **NW Evaporation Basin.** On August 29th small quantities of water were discovered in northwest (NW) basin's leak collection standpipes. The NW basin was essentially empty at the time of inspection. The standpipes were pumped and subsequent inspections in the 4th quarter showed the standpipes to be dry or contain de minimis amounts of condensate water. The source of the water may be precipitation that became trapped between the primary and secondary liners during construction.
- **NE Evaporation Basin.** On August 29th small quantities of water were discovered in the northeast (NE) basin's leak collection standpipes. Subsequent inspections during the 4th quarter of 2012 showed water consistently present in both standpipes. The source of the water may be precipitation that became trapped between the primary and secondary liners during construction.

2012 ANNUAL WATER QUALITY MONITORING: SWWS PLANT EFFLUENT

Tables 5.0 and **6.0** present the analytical results from annual monitoring of the TA-46 SWWS Plant's effluent in 2012; samples were collected directly from the TA-46 SWWS Plant's reuse wet well. Copies of the analytical reports are provided in **Enclosure 4.0**.

- **Table 5.0** 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.

- **Table 6.0** presents the analytical results from annual monitoring of the SWWS Plant's effluent for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and PCBs. All sample results were nondetect with the exception of the following five VOCs that were detected at concentrations greater than the analytical laboratory's Method Detection Limit (MDL):
 1. **Bromodichloromethane** was detected at a concentration of 15.7 µg/L. There is no NMWQCC Regulation 3103 standard for bromodichloromethane.
 2. **Chlorodibromomethane** was detected at a concentration of 5.52 µg/L. There is no NMWQCC Regulation 3103 standard for chlorodibromomethane.
 3. **Chloroform** was detected at a concentration of 27.7 µg/L. The NMWQCC Regulation 3103 standard for chloroform in groundwater is 100 µg/L.
 4. **Benzoic Acid** was detected at a concentration of 14 µg/L. There is no NMWQCC Regulation 3103 standard for benzoic acid.
 5. **Butanone[2-]** was detected at a concentration of 4.63 µg/L. There is no NMWQCC Regulation 3103 standard for butanone[2-].

Bromodichloromethane, chlorodibromomethane, and chloroform are common by-products—called trihalomethanes—from the disinfection of wastewater effluent with chlorine compounds.

2011 ANNUAL WATER QUALITY MONITORING: MONITORING WELL CDBO-6

During 2012 there was insufficient water in monitoring well CDBO-6 for sampling.

Table 1.0 Water Quality Data: SWWS Plant Reuse Water, NPDES Outfalls 001 and 03A027, and CDBO-6. 4th Quarter, 2012.

Sampling Location	Field Prep	Sample Date	Sample ID No.	TDS (mg/L)	Chloride (mg/L)	NO ₃ -N/NO ₂ -N (mg/L)	TKN (mg/L)	NH ₃ -N (mg/L)
SWWS Plant								
SWWS Plant Reuse Wet Well ¹	UF	11/15/2012	SWWS46-13-24778	406	72.2	7.1	0.60	0.06
Sandia Canyon								
NPDES Outfall 001	UF	11/15/2012	SWWS46-13-24772	231	38.1	2.2	0.45	0.26
NPDES Outfall 03A027	UF	11/15/2012	SWWS46-13-24773	390	11.5	1.1	1.5	0.21
Canada del Buey								
CDBO-6		10/29/2012	Dry ⁵	Dry ⁵	Dry ⁵	Dry ⁵	Dry ⁵	Dry ⁵
NM WQCC Regulation 3103 Groundwater Standards (mg/L)				1000	250	10 ³	NA	NA

Notes:

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

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

³The NM WQCC Regulation 3103 Groundwater Standard is for NO₃-N.

⁴No Sample means that no sample was collected during the quarter. See cover letter for details.

⁵Dry means that there was insufficient water in the well for sampling.

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

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

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

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

Table 2.0. Water Level in Cañada del Buey Observation Well (CDBO)-6, 4th Quarter 2012

Location	Date	Water Level (ft)
CDBO-6	10/29/2012	Below top of pump

Notes:

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

Table 3.0. 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	Discharges to NPDES Outfall 001	Reuse Water to SCC Cooling Towers (estimated)	Discharges to NPDES Outfall 03A027
Oct-2012	8.426	8.4697	<0.01	1.9323
Nov-2012	7.945	8.6876	0.1485	1.6669
Dec-2012	8.176	8.0077	1.0273	1.5111

Notes:

¹In the 4th quarter of 2012, all SWWS Plant effluent was pumped via a force main to TA-3 for reuse or discharge.

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

³The SCC cooling towers can use potable or SWWS Plant reuse water. Table 3.0 contains the estimated volume of SWWS Plant reuse water that the SCC cooling towers used during the 4th quarter of 2012.

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

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

Inspection Date	Basin	Inspection Results
10/23/2012	SW	Both standpipes are dry or contain de minimis amounts of water
10/23/2012	SE	Both standpipes contain approximately 36" of water
10/23/2012	NW	Both standpipes contain de minimis amounts of water
10/23/2012	NE	Both standpipes contain approximately 48" of water
11/19/2012	SW	Both standpipes are dry or contain de minimis amounts of water
11/19/2012	SE	Both standpipes are dry or contain de minimis amounts of water
11/19/2012	NW	Both standpipes contain de minimis amounts of water
11/19/2012	NE	Both standpipes contain approximately 45" - 47" of water
12/11/2012	SW	Both standpipes are dry or contain de minimis amounts of water
12/11/2012	SE	Both standpipes contain approximately 30" of water
12/11/2012	NW	Both standpipes are dry or contain de minimis amounts of water
12/11/2012	NE	Both standpipes contain approximately 3" to 7" of water

Table 5.0. Annual Effluent Quality Monitoring Data, SWWS Plant Reuse Wet Well: Metals, General Chemistry, Radiologicals

Sample ID	Date	Parameter	Value	Unit	U	N	Y	J	Field Prep Code
SWWS46-12-22932	8/15/12	Silver	0.2	ug/L	U	N			F
SWWS46-12-22932	8/15/12	Aluminum	68	ug/L	U	N			F
SWWS46-12-22932	8/15/12	Arsenic	1.9	ug/L	J	Y			F
SWWS46-12-22932	8/15/12	Boron	57.7	ug/L		Y			F
SWWS46-12-22932	8/15/12	Barium	14.5	ug/L		Y			F
SWWS46-12-22932	8/15/12	Beryllium	1	ug/L	U	N			F
SWWS46-12-22932	8/15/12	Cadmium	0.11	ug/L	U	N			F
SWWS46-12-10424	2/23/12	Chloride	90.3	mg/L		Y			UF
SWWS46-12-13876	5/1/12	Chloride	89.3	mg/L		Y			UF
SWWS46-12-22930	8/15/12	Chloride	63	mg/L		Y			UF
SWWS46-13-24778	11/15/12	Chloride	72.2	mg/L		Y			UF
SWWS46-12-22930	8/15/12	Perchlorate	0.05	ug/L	U	N			UF
SWWS46-12-22932	8/15/12	Cyanide (Total)	0.00169	mg/L	J	Y			F
SWWS46-12-22932	8/15/12	Cobalt	1	ug/L	U	N			F
SWWS46-12-22932	8/15/12	Chromium	2	ug/L	U	N			F
SWWS46-12-22932	8/15/12	Copper	4.2	ug/L	J	Y			F
SWWS46-12-22930	8/15/12	Fluoride	0.275	mg/L		Y			UF
SWWS46-12-22932	8/15/12	Iron	121	ug/L		Y			F
SWWS46-12-22930	8/15/12	Mercury	0.067	ug/L	U	N			UF
SWWS46-12-22932	8/15/12	Mercury	0.067	ug/L	U	N			F
SWWS46-12-22932	8/15/12	Manganese	18.7	ug/L		Y			F
SWWS46-12-22932	8/15/12	Molybdenum	10.3	ug/L		Y			F
SWWS46-12-10424	2/23/12	Ammonia as Nitrogen	0.071	mg/L		Y			UF
SWWS46-12-13876	5/1/12	Ammonia as Nitrogen	0.084	mg/L		N			UF
SWWS46-12-22930	8/15/12	Ammonia as Nitrogen	0.229	mg/L		Y			UF
SWWS46-13-24778	11/15/12	Ammonia as Nitrogen	0.0619	mg/L		Y			UF
SWWS46-12-22932	8/15/12	Nickel	1.36	ug/L	J	Y			F
SWWS46-12-10424	2/23/12	Nitrate-Nitrite as Nitrogen	0.81	mg/L		Y			UF
SWWS46-12-13876	5/1/12	Nitrate-Nitrite as Nitrogen	0.52	mg/L		Y			UF
SWWS46-12-22930	8/15/12	Nitrate-Nitrite as Nitrogen	1.33	mg/L		Y			UF
SWWS46-13-24778	11/15/12	Nitrate-Nitrite as Nitrogen	7.1	mg/L		Y			UF
SWWS46-12-22932	8/15/12	Lead	0.5	ug/L	U	N			F
SWWS46-12-22930	8/15/12	Gross alpha	1.66	pCi/L	U	N	2.63	0.909	UF
SWWS46-12-22930	8/15/12	Radium-226	0.116	pCi/L	U	N	0.354	0.101	UF
SWWS46-12-22930	8/15/12	Radium-228	0.402	pCi/L	U	N	0.561	0.181	UF
SWWS46-12-22932	8/15/12	Selenium	1.5	ug/L	U	N		1.5	F
SWWS46-12-22930	8/15/12	Sulfate	19.2	mg/L		Y		0.133	UF
SWWS46-12-10424	2/23/12	Total Dissolved Solids	421	mg/L		Y		3.4	UF
SWWS46-12-13876	5/1/12	Total Dissolved Solids	474	mg/L		Y		3.4	UF
SWWS46-12-22930	8/15/12	Total Dissolved Solids	441	mg/L		Y		3.4	UF
SWWS46-13-24778	11/15/12	Total Dissolved Solids	406	mg/L		Y		3.4	UF
SWWS46-12-10424	2/23/12	Total Kjeldahl Nitrogen	0.313	mg/L		Y		0.035	UF
SWWS46-12-13876	5/1/12	Total Kjeldahl Nitrogen	0.58	mg/L		Y		0.035	UF
SWWS46-12-22930	8/15/12	Total Kjeldahl Nitrogen	0.887	mg/L		Y		0.035	UF

Table 5.0. Annual Effluent Quality Monitoring Data, SWWS Plant Reuse Wet Well: Metals, General Chemistry, Radiologicals

Annual Effluent Quality Monitoring Data, SWWS Plant Reuse Wet Well: Metals, General Chemistry, Radiologicals										
SWWS46-13-24778	11/15/12	Total Kjeldahl Nitrogen	0.603	mg/L		Y		0.033		UF
SWWS46-12-22932	8/15/12	Uranium	0.55	ug/L		Y		0.067		F
SWWS46-12-22932	8/15/12	Zinc	41.7	ug/L		Y		3.3		F

Table 6.0. Annual Effluent Quality Monitoring Data, SWWS Plant Reuse Wet Well: VOCs, SVOCs, PCBs

Sample ID	Date	Location	Compound	Concentration	Unit	Method	Y/N	Range	UF	MDL
SWWS46-12-22930	8/15/2012	SW-846:8260B	Bromodichloromethane	15.7	ug/L		Y	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Chlorodibromomethane	5.52	ug/L		Y	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Chloroform	27.7	ug/L		Y	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Benzoic Acid	14	ug/L	J	Y	12-1502	UF	6
SWWS46-12-22930	8/15/2012	SW-846:8260B	Butanone[2-]	4.63	ug/L	J	Y	12-1502	UF	2
SWWS46-12-22930	8/15/2012	SW-846:8270C	Acenaphthene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Acenaphthylene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Acetone	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Acetonitrile	8	ug/L	U	N	12-1502	UF	8
SWWS46-12-22930	8/15/2012	SW-846:8260B	Acrolein	1.5	ug/L	U	N	12-1502	UF	1.5
SWWS46-12-22930	8/15/2012	SW-846:8260B	Acrylonitrile	1.5	ug/L	U	N	12-1502	UF	1.5
SWWS46-12-22930	8/15/2012	SW-846:8270C	Aniline	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Anthracene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8082	Aroclor-1016	0.0354	ug/L	U	N	12-1502	UF	0.0354
SWWS46-12-22930	8/15/2012	SW-846:8082	Aroclor-1221	0.0354	ug/L	U	N	12-1502	UF	0.0354
SWWS46-12-22930	8/15/2012	SW-846:8082	Aroclor-1232	0.0354	ug/L	U	N	12-1502	UF	0.0354
SWWS46-12-22930	8/15/2012	SW-846:8082	Aroclor-1242	0.0354	ug/L	U	N	12-1502	UF	0.0354
SWWS46-12-22930	8/15/2012	SW-846:8082	Aroclor-1248	0.0354	ug/L	U	N	12-1502	UF	0.0354
SWWS46-12-22930	8/15/2012	SW-846:8082	Aroclor-1254	0.0354	ug/L	U	N	12-1502	UF	0.0354
SWWS46-12-22930	8/15/2012	SW-846:8082	Aroclor-1260	0.0354	ug/L	U	N	12-1502	UF	0.0354
SWWS46-12-22930	8/15/2012	SW-846:8082	Aroclor-1262	0.0354	ug/L	U	N	12-1502	UF	0.0354
SWWS46-12-22930	8/15/2012	SW-846:8270C	Atrazine	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Azobenzene	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Benzene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Benzidine	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Benzo(a)anthracene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Benzo(a)pyrene	0.44	ug/L	U	N	12-1502	UF	0.44
SWWS46-12-22930	8/15/2012	SW-846:8270C	Benzo(b)fluoranthene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Benzo(g,h,i)perylene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Benzo(k)fluoranthene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Benzyl Alcohol	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Bis(2-chloroethoxy)methane	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Bis(2-chloroethyl)ether	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Bis(2-ethylhexyl)phthalate	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Bromobenzene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Bromochloromethane	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Bromoform	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Bromomethane	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Bromophenyl-phenylether[4-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Butanol[1-]	15	ug/L	U	N	12-1502	UF	15
SWWS46-12-22930	8/15/2012	SW-846:8260B	Butylbenzene[n-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Butylbenzene[sec-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Butylbenzene[tert-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Butylbenzylphthalate	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Carbon Disulfide	1.5	ug/L	U	N	12-1502	UF	1.5
SWWS46-12-22930	8/15/2012	SW-846:8260B	Carbon Tetrachloride	0.3	ug/L	U	N	12-1502	UF	0.3

Table 6.0. Annual Effluent Quality Monitoring Data, SWWS Plant Reuse Wet Well: VOCs, SVOCs, PCBs

Sample ID	Date	SWWS ID	Compound	Concentration	Unit	U	N	12-1502	Field Prep Code	Lab MDL
SWWS46-12-22930	8/15/2012	SW-846:8260B	Chloro-1,3-butadiene[2-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Chloro-1-propene[3-]	1.5	ug/L	U	N	12-1502	UF	1.5
SWWS46-12-22930	8/15/2012	SW-846:8270C	Chloro-3-methylphenol[4-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Chloroaniline[4-]	3.3	ug/L	U	N	12-1502	UF	3.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Chlorobenzene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Chloroethane	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Chloromethane	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Chloronaphthalene[2-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Chlorophenol[2-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Chlorophenyl-phenyl[4-] Ether	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Chlorotoluene[2-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Chlorotoluene[4-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Chrysene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Dibenz(a,h)anthracene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Dibenzofuran	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Dibromo-3-Chloropropane[1,2-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Dibromoethane[1,2-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Dibromomethane	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Dichlorobenzene[1,2-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Dichlorobenzene[1,2-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Dichlorobenzene[1,2-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Dichlorobenzene[1,2-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Dichlorobenzene[1,3-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Dichlorobenzene[1,3-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Dichlorobenzene[1,3-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Dichlorobenzene[1,3-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Dichlorobenzene[1,4-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Dichlorobenzene[1,4-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Dichlorobenzene[1,4-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Dichlorobenzene[1,4-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Dichlorobenzidine[3,3'-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Dichlorodifluoromethane	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Dichloroethane[1,1-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Dichloroethane[1,2-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Dichloroethene[1,1-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Dichloroethene[cis-1,2-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Dichloroethene[trans-1,2-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Dichlorophenol[2,4-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Dichloropropane[1,2-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Dichloropropane[1,3-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Dichloropropane[2,2-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Dichloropropene[1,1-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Dichloropropene[cis-1,3-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Dichloropropene[trans-1,3-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Diethyl Ether	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Diethylphthalate	3	ug/L	U	N	12-1502	UF	3

Table 6.0. Annual Effluent Quality Monitoring Data, SWWS Plant Reuse Wet Well: VOCs, SVOCs, PCBs

Sample ID	Date	Location	Compound	Concentration	Unit	U	N	12-1502	Field Prep Code	Lab MDL
SWWS46-12-22930	8/15/2012	SW-846:8270C	Dimethyl Phthalate	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Dimethylphenol[2,4-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Di-n-butylphthalate	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Dinitro-2-methylphenol[4,6-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Dinitrophenol[2,4-]	5	ug/L	U	N	12-1502	UF	5
SWWS46-12-22930	8/15/2012	SW-846:8270C	Dinitrotoluene[2,4-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Dinitrotoluene[2,6-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Di-n-octylphthalate	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Dinoseb	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Dioxane[1,4-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Dioxane[1,4-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Diphenylamine	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Ethyl Methacrylate	1.5	ug/L	U	N	12-1502	UF	1.5
SWWS46-12-22930	8/15/2012	SW-846:8260B	Ethylbenzene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Fluoranthene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Fluorene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Hexachlorobenzene	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Hexachlorobutadiene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Hexachlorobutadiene	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Hexachlorobutadiene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Hexachlorobutadiene	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Hexachlorocyclopentadiene	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Hexachloroethane	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Hexachloroethane	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Hexanone[2-]	2.2	ug/L	U	N	12-1502	UF	2.2
SWWS46-12-22930	8/15/2012	SW-846:8270C	Indeno(1,2,3-cd)pyrene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Iodomethane	1.5	ug/L	U	N	12-1502	UF	1.5
SWWS46-12-22930	8/15/2012	SW-846:8260B	Isobutyl alcohol	15	ug/L	U	N	12-1502	UF	15
SWWS46-12-22930	8/15/2012	SW-846:8270C	Isophorone	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Isopropylbenzene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Isopropyltoluene[4-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Methacrylonitrile	1.5	ug/L	U	N	12-1502	UF	1.5
SWWS46-12-22930	8/15/2012	SW-846:8260B	Methyl Methacrylate	1.5	ug/L	U	N	12-1502	UF	1.5
SWWS46-12-22930	8/15/2012	SW-846:8260B	Methyl tert-Butyl Ether	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Methyl-2-pentanone[4-]	1.5	ug/L	U	N	12-1502	UF	1.5
SWWS46-12-22930	8/15/2012	SW-846:8260B	Methyl-2-pentanone[4-]	1.5	ug/L	U	N	12-1502	UF	1.5
SWWS46-12-22930	8/15/2012	SW-846:8260B	Methylene Chloride	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Methylnaphthalene[1-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Methylnaphthalene[2-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Methylphenol[2-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Methylphenol[4-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Naphthalene	0.4	ug/L	U	N	12-1502	UF	0.4
SWWS46-12-22930	8/15/2012	SW-846:8270C	Naphthalene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Naphthalene	0.4	ug/L	U	N	12-1502	UF	0.4
SWWS46-12-22930	8/15/2012	SW-846:8270C	Naphthalene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Nitroaniline[2-]	3	ug/L	U	N	12-1502	UF	3

Table 6.0. Annual Effluent Quality Monitoring Data, SWWS Plant Reuse Wet Well: VOCs, SVOCs, PCBs

Sample ID	Date	Location	Compound	Concentration	Unit	U	N	12-1502	Field Trip	Lab/MDL
SWWS46-12-22930	8/15/2012	SW-846:8270C	Nitroaniline[3-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Nitroaniline[4-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Nitrobenzene	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Nitrophenol[2-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Nitrophenol[4-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Nitrosodiethylamine[N-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Nitrosodimethylamine[N-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Nitroso-di-n-butylamine[N-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Nitroso-di-n-propylamine[N-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Nitrosopyrrolidine[N-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Oxybis(1-chloropropane)[2,2'-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Pentachlorobenzene	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Pentachlorophenol	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Phenanthrene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Phenol	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Propionitrile	1.5	ug/L	U	N	12-1502	UF	1.5
SWWS46-12-22930	8/15/2012	SW-846:8260B	Propylbenzene[1-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Pyrene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Pyridine	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Styrene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Tetrachlorobenzene[1,2,4,5]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Tetrachloroethane[1,1,1,2-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Tetrachloroethane[1,1,2,2-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Tetrachloroethene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Tetrachlorophenol[2,3,4,6-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Toluene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Trichloro-1,2,2-trifluoroethane[1,1,2-]	1.5	ug/L	U	N	12-1502	UF	1.5
SWWS46-12-22930	8/15/2012	SW-846:8260B	Trichlorobenzene[1,2,3-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Trichlorobenzene[1,2,4-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Trichlorobenzene[1,2,4-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Trichlorobenzene[1,2,4-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Trichlorobenzene[1,2,4-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Trichloroethane[1,1,1-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Trichloroethane[1,1,2-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Trichloroethene	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Trichlorofluoromethane	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Trichlorophenol[2,4,5-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8270C	Trichlorophenol[2,4,6-]	3	ug/L	U	N	12-1502	UF	3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Trichloropropane[1,2,3-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Trimethylbenzene[1,2,4-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Trimethylbenzene[1,3,5-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Vinyl acetate	1.5	ug/L	U	N	12-1502	UF	1.5
SWWS46-12-22930	8/15/2012	SW-846:8260B	Vinyl Chloride	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Xylene[1,2-]	0.3	ug/L	U	N	12-1502	UF	0.3
SWWS46-12-22930	8/15/2012	SW-846:8260B	Xylene[1,3-]+Xylene[1,4-]	0.3	ug/L	U	N	12-1502	UF	0.3

ENCLOSURE 2

2012 Communications RE: DP-857

ENV-RCRA-13-0020

LAUR-13-20410

Date: JAN 30 2013

Beers, Bob

From: Beers, Robert S
Sent: Monday, February 06, 2012 10:54 AM
To: Knutson, Gerald, NMENV
Cc: George, Robert, NMENV; Pearson, Bill, NMENV; Saladen, Michael T; Bailey, Marc A
Subject: RE: SWWS, SEDRF and Outfalls
Attachments: Pages from NPDES Permit NM0028355 With 7-17-07 5-13-11 10-11-11 ModsALL PARTS.pdf - Adobe Acrobat.pdf

Mr. Knutson,

NPDES Outfalls 02A129 (TA-21 Steam Plant), 03A021 (CMR Air Washers), 03A130 (Vibration Laboratory Cooling Tower), and 03A185 (DARHT Cooling Tower) were deleted from Los Alamos National Laboratory's current NPDES Permit No. NM0028355.

Please see the attached confirmation letter from EPA Region 6 dated October 11, 2011.

Please let me know if you have additional questions.

Sincerely,

Bob Beers
Water Quality & RCRA Group
Los Alamos National Security, LLC
505-667-7969

From: Knutson, Gerald, NMENV [<mailto:Gerald.Knutson@state.nm.us>]
Sent: Thursday, February 02, 2012 12:06 PM
To: Beers, Robert S
Cc: George, Robert, NMENV; Pearson, Bill, NMENV
Subject: SWWS, SEDRF and Outfalls

Mr. Beers,

As per our phone conversation today-

I am close to completing the present draft revision of the Discharge Permit Renewal and Modification for SWWS, SERF, Sigma Mesa's evaporative basins and selected NPDES Outfalls, DP-857. Before I submit the draft for review, have there been any changes in the number of NPDES Outfalls since NMED received the Discharge Permit Renewal and Modification application dated June 30, 2010?

I would like to have all treatment systems, discharges and discharge locations updated and in the draft Discharge Permit while it is under review.

Sincerely,

Jake Knutson
NMED-GWQB
505-827-2996

Beers, Bob

From: Knutson, Gerald, NMENV <Gerald.Knutson@state.nm.us>
Sent: Monday, February 20, 2012 12:06 PM
To: Beers, Robert S
Subject: LANL inspection

Mr. Beers,

As discussed earlier, I would like to schedule an inspection at LANL on Tuesday, March 20, 2012. This will be an all day event. The inspection will include a general tour of SWWS/SERF and RLWTF/ZLD.

NMED staff will include Jerry Schoeppner, Clint Marshall, Robert George, Jennifer Fullam and Gerald Knutson. All are US citizens.

If you have any questions, please email back or call me at 505-827-2996.

Sincerely,

Jake Knutson
NMED-GWQB



*Environmental Safety & Health
Environmental Protection Division
P.O. Box 1663, K491
Los Alamos, New Mexico 87545
(505) 665-6592/FAX (505) 665-3811*

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

Date: March 13, 2012
Refer To: ENV-DO-12-0008
LAUR: 12-10463

Mr. Jerry Schoeppner, Acting 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: NOTICE OF CHANGED CONDITIONS, EXPANSION OF THE SANITARY EFFLUENT RECLAMATION FACILITY AND SIGMA MESA EVAPORATION BASINS, DP-857

In accordance with §20.6.2.3107 of the New Mexico Administrative Code (NMAC), the US Department of Energy (DOE) and Los Alamos National Security, LLC (LANS) are notifying you of a planned change in the operating conditions at the Sanitary Effluent Reclamation Facility (SERF) and the Sigma Mesa SERF Evaporation Basins. The New Mexico Environment Department (NMED) was previously notified of the planned expansion of the effluent reuse system at Los Alamos National Laboratory in the July 2010 Discharge Permit DP-857 Renewal Application (ENV-RCRA-10-127) and in the 2011 Annual Report for Discharge Permit DP-857 (ENV-DO-12-003). The expansion of the effluent reuse system at Los Alamos National Laboratory is a necessary project for conserving potable water, reducing wastewater discharges to the environment, and reducing NPDES permitted outfalls.

Enclosures 1, 2, and 3 contain copies of the construction drawings for the foundation, civil, and mechanical/electrical/process portions of the project's design, respectively. Because this project is being constructed under a design-build contract, a complete set of construction drawings will not be available until the final stages of the project. However, DOE/LANS will submit design drawings as they become available for release.

Mr. Jerry Schoeppner
ENV-DO-12-0008

- 2 -

March 13, 2012

Please contact Bob Beers at (505) 667-7969 of the Water Quality and RCRA Group (ENV-RCRA) if you have questions.

Sincerely,



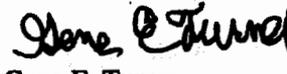
Alison M. Dorries
Division Leader
Environmental Protection Division
Los Alamos National Laboratory

AMD:GET:BB/lm

Enclosures: a/s

Cy: James Bearzi, NMED/SWQB, Santa Fe, NM, w/enc.
John E. Kieling, NMED/HWB, Santa Fe, NM, w/enc.
Hai Shen, LASO-EPO, w/enc., A316
Kevin W. Smith, LASO-OOM, w/o enc., A316
Gene Turner, LASO-EPO, w/enc., A316
Steve Yanicak, LASO-GOV, w/enc., M894
Carl A. Beard, PADOPS, w/o enc., A102
Michael T. Brandt, ADESH, w/o enc., K491, (E-File)
Alison M. Dorries, ENV-DO, w/o enc., K491, (E-File)
Andy Erickson, UI-DO, w/o enc., K760, (E-File)
Scotty Jones, ENV-DO, w/o enc., K491, (E-File)
Lawrence Chavez, UI-OPS, w/o enc., K760, (E-File)
Charles Barnett, UI-OPS, w/o enc., J972, (E-File)
Mark Trujillo, ES-UI, w/o enc., K718, (E-File)
Chris L. Quartieri, MNGRFCT-DO, w/o enc., J590
Mike Saladen, ENV-RCRA, w/enc., K490, (E-File)
Bob Beers, ENV-RCRA, w/enc., K490
ENV-RCRA File, (12-0059) w/enc., M704
IRM-RMMSO, w/enc., A150, (E-File)

Sincerely,



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

Beers, Bob

From: Fullam, Jennifer, NMENV <Jennifer.Fullam@state.nm.us>
Sent: Thursday, May 10, 2012 9:19 AM
To: Beers, Bob
Subject: RE: NMED-GWQB Inspection_March 20, 2012
Attachments: DP1132 InspRprt 032012.pdf

Bob,

Per your request, attached you will find NMED's inspection report for the RLWTF, conducted on March 20, 2012. Please contact me if you have any questions. Thank you.

*Jennifer Fullam
Environmental Scientist
Ground Water Quality Bureau
New Mexico Environment Department
505.827.2909
jennifer.fullam@state.nm.us*

From: Beers, Robert S [<mailto:bbeers@lanl.gov>]
Sent: Tuesday, March 27, 2012 11:19 AM
To: Fullam, Jennifer, NMENV
Cc: George, Robert, NMENV; Saladen, Michael T
Subject: NMED-GWQB Inspection_March 20, 2012

Dear Ms. Fullam,

Los Alamos National Security, LLC requests a copy of the inspection report from the March 20, 2012, inspection of the TA-50 Radioactive Liquid Waste Treatment Facility (RLWTF), the TA-52 ZLD Solar Evaporation Tanks, the TA-46 SWWS Plant, the TA-3 SERF, and the Sigma Mesa SERF Evaporation Basins by the NMED GWQB.

Sincerely,

Bob Beers
Water Quality & RCRA Group
Los Alamos National Security, LLC
505-667-7969



Environmental Protection Division
Water Quality & RCRA Group (ENV-RCRA)
P.O. Box 1663, K490
Los Alamos, New Mexico 87545
(505) 667-0866

National Nuclear Security Administration
Los Alamos Site Office, A318
3747 West Jemez Road
Los Alamos, New Mexico 87545
(505) 667-5794/FAX (505) 667-5948

Date: **JUL 17 2012**
Refer To: ENV-RCRA-12-0165
LAUR: 12-22929

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: NOTICE OF CHANGED CONDITIONS, EXPANSION OF THE SANITARY EFFLUENT RECLAMATION FACILITY AND SIGMA MESA EVAPORATION BASINS, DP-857

In accordance with §20.6.2.3107 of the New Mexico Administrative Code (NMAC), on March 13, 2012, the U.S. Department of Energy and Los Alamos National Security LLC (DOE/LANS) notified you of a planned change in the operating conditions at the Sanitary Effluent Reclamation Facility (SERF) and the Sigma Mesa SERF Evaporation Basins (ENV-DO-12-0008). The March 2012 notification provided the New Mexico Environment Department (NMED) with construction drawings for the planned expansion of the effluent reuse system at Los Alamos National Laboratory. Because this project is being constructed under a design-build contract, the construction drawings submitted in March 2012 were incomplete. This letter provides you with the remaining design drawings for the project.

Enclosures 1 and 2 are copies of the construction drawings for the civil/process and structural/architectural portions of the project's design, respectively. As-built drawings will be submitted to the NMED once they are available for release.

Mr. Jerry Schoeppner
ENV-RCRA-12-0165

- 2 -

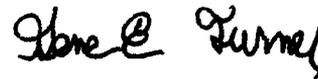
Please contact Robert S. Beers by telephone at (505) 667-7969 or by email at rbeers@lanl.gov if you have questions regarding this notification.

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 Site Office
U.S. Department of Energy

Enclosures:

1. SERF Expansion Project, Civil and Process Drawings
2. SERF Expansion Project, Structural and Architectural Drawings

AMD:GET:RSB/lm

Cy: James Hogan, NMED/SWQB, Santa Fe, NM, w/enc.
John E. Kieling, NMED/HWB, Santa Fe, NM, w/enc.
Steve W. Yanicak, NMED/DOE/OB, w/enc., M894, (E-File)
Hai Shen, LASO-EPO, A316, w/enc., (E-File)
Gene E. Turner, LASO-EPO, A316, w/enc., (E-File)
Carl A. Beard, PADOPS, w/o enc., A102,
Michael T. Brandt, ADESH, K491, w/o enc., (E-File)
Alison M. Dorries, ENV-DO, K491, w/o enc., (E-File)
Andrew W. Erickson, UI-DO, w/o enc., K760, (E-File)
Lawrence V. Chavez, UI-OPS, w/o enc., K760, (E-File)
Gary F. Blauert, ES-UI, w/o enc., K718, (E-File)
Mark Trujillo, ES-UI, w/o enc., K718, (E-File)
Chris L. Quartieri, MNGRFCT-DO, w/o enc., J590. (E-File)
Michael T. Saladen, ENV-RCRA, K490, w/o enc., (E-File)
Robert S. Beers, ENV-RCRA, w/enc., K490
IRM-RMMSO, w/enc., A150, (E-File)
ENV-RCRA Correspondence File, w/enc., K490



*Environmental Protection Division
Water Quality & RCRA Group (ENV-RCRA)*
P.O. Box 1663, Mail Stop K490
Los Alamos, New Mexico 87545
(505) 667-0666

Date: JUL 31 2012
Refer To: ENV-RCRA-12-0154
LAUR: 12-22609

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

Mr. James Hogan, Acting Bureau Chief
New Mexico Environment Department
Surface Water Quality Bureau
Harold Runnels Building, Room N2050
1190 St. Francis Drive
PO Box 5469
Santa Fe, New Mexico 87502-5469

Dear: Mr. Schoeppner and Mr. Hogan:

**SUBJECT: NOTICE OF INTENT OF PLANNED CHANGE IN SEWAGE SLUDGE DISPOSAL
PRACTICE AT THE LOS ALAMOS NATIONAL LABORATORY'S SANITARY
WASTE WATER SYSTEM FACILITY**

The purpose of this letter is to inform you of a planned change in the Laboratory's biosolids disposal practice. Beginning later this summer the Laboratory will begin composting biosolids at the Sanitary Waste Water System (SWWS) Facility. Enclosed is a Notice of Intent, submitted pursuant to 20.6.2 and 20.9.3 NMAC, conveying pertinent details of the project. Other supporting information is also enclosed for your information.

The composting of biosolids will take place on the SWWS sludge drying beds. These beds are equipped with an under drain system and all waters generated from the composting dewatering operation will return to head works of the plant.

The final composted soil amendment will be land applied and will meet the high quality pollutant concentrations in Table 3 of 40 CFR 503.13, the more stringent Class A pathogen requirements in 40 CFR 503.32(a); and one of the eight vector attraction reduction requirements in 40 CFR 503.33(b)(1)

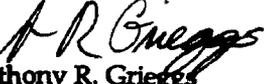
Mr. Jerry Schoeppner & Mr. James Hogan - 2 -
ENV-RCRA-12-0154

through (b)(8). Compost material derived from sewage sludge that does not meet the three exceptional quality requirements above will not be land applied.

The final soil amendment will be land applied on Laboratory property at the TA-60 Sigma Mesa Staging Area. The Staging Area is subject to the conditions of the TA-60 Roads and Ground Facility Multi-Sector General Permit (MSGP) - #NMR05GB21 - Storm Water Pollution Prevention Plan (SWPPP). An amendment to the SWPPP will include the addition of a 2.5-acre site consisting of shrub oak and dense grassland vegetation. The site is ideally suited for land application for beneficial use of the final soil amendment. Coverage of this site under the SWPPP ensures that a documented, implementable process is in place to reduce the possibility that compost materials will reach a watercourse. The application site will be subject to periodic inspections and corrective actions as specified in the SWPPP.

Please contact Mike Saladen at (505) 665-6085 of the Water Quality and RCRA Group (ENV-RCRA) if you have questions or need additional information.

Sincerely,


Anthony R. Grieggs
Group Leader
Water Quality & RCRA Group (ENV-RCRA)

ARG:RMG/lm

Enclosure:

1. GWQB Notice of Intent
2. TA-60 Roads and Grounds Facility MSGP SWPPP Map and Compost Application Site
3. Composting Facility Registration Form
4. Location of Sanitary Waste Water System (SWWS) at TA-46
5. Sanitary Waste Water Facility (additional view)
6. SWWS Facility Site Plan (traffic flow, electric transmission and storm water flows)
7. SWWS Sludge Drying Bed Return Water Flows
8. SWWS Process Schematic

Cy: Gene Turner, LASO-EPO, w/enc., A316, (E-File)
Carl A. Beard, PADOPS, w/o enc., A102
Michael T. Brandt, ADESH, w/o enc., (E-File)
Alison M. Dorries, ENV-DO, w/o enc., (E-File)
Michael T. Saladen, ENV-RCRA, w/enc., (E-File)
Robert M. Gallegos, ENV-RCRA, w/enc., (E-File)
IRM-RMMSO, A150, (E-File)
ENV-RCRA Correspondence File, w/enc., K490



*Environmental Protection Division
Water Quality & RCRA Group (ENV-RCRA)*
P.O. Box 1663, Mail Stop K460
Los Alamos, New Mexico 87545
(505) 887-0886

Date: **AUG 01 2012**
Refer To: ENV-RCRA-12-0155
LAUR: 12-22610

Mr. John Offersen
Environmental Specialist
New Mexico Environment Department
Solid Waste Bureau, Permit Section
1190 St. Francis Drive, Room S2050
PO Box 26110
Santa Fe, New Mexico 87502

Dear: Mr. Offersen:

**SUBJECT: REGISTRATION OF SANITARY WASTE WATER SYSTEM COMPOST FACILITY
AT LOS ALAMOS NATIONAL LABORATORY**

Attached for your review and approval is a completed Composting Facility Registration form. Beginning later this summer the Laboratory will begin composting biosolids at the Sanitary Waste Water System (SWWS) Facility. Pursuant to 20.6.2 NMAC a Notice of Intent has been filed with NMED's Ground Water Quality Bureau.

The composting of biosolids will take place on the SWWS sludge drying beds. These beds are equipped with an under drain system and all waters generated from the composting dewatering operation will return to head works of the plant.

The compostable soil amendment derived from sewage sludge will meet the high quality pollutant concentrations in Table 3 of 40 CFR 503.13, the more stringent Class A pathogen requirements in 40 CFR 503.32(a); and one of the eight vector attraction reduction requirements in 40 CFR 503.33(b)(1) through (b)(8). Compost material derived from sewage sludge that does not meet the three quality requirements above will not be land applied.

The final soil amendment will be land applied on Laboratory property at the TA-60 Sigma Mesa Staging Area. The Staging Area is subject to the conditions of the TA-60 Roads and Ground

Mr. John Offerson
ENV-RCRA-12-0155

- 2 -

Facility Multi-Sector General Permit (MSGP) - #NMR05GB21 - Storm Water Pollution Prevention Plan (SWPPP). An amendment to the SWPPP will include the addition of a 2.5-acre site consisting of shrub oak and dense grassland vegetation. The site is ideally suited for land application for beneficial use of the final soil amendment. Coverage of this site under the SWPPP ensures that a documented, implementable process is in place to reduce the possibility that compost materials will reach a watercourse. The application site will be subject to periodic inspections and corrective actions as specified in the SWPPP.

Please contact Mike Saladen at (505) 665-6085 of the Water Quality and RCRA Group (ENV-RCRA) if you have questions.

Sincerely,



Anthony R. Grieggs
Group Leader
Water Quality & RCRA Group (ENV-RCRA)

ARG:RMG/lm

Enclosure:

1. Composting Facility Registration Form
2. Location of Sanitary Waste Water System (SWWS) at TA-46
3. Sanitary Waste Water Facility (additional view)
4. SWWS Facility Site Plan (traffic flow, electric transmission and storm water flows)
5. SWWS Sludge Drying Bed Return Water Flows
6. SWWS Process Schematic
7. NOI to NMED GWQB
8. TA-60 Roads and Grounds Facility MSGP SWPPP Map and Compost Application Site

Cy: James Hogan, NMED/SWQB, Santa Fe, NM, w/enc.
Jerry Schoeppner, NMED/GWQB, Santa Fe, NM, w/enc.
Gene Turner, LASO-EPO, w/enc., (E-File)
Carl A. Beard, PADOPS, w/o enc., A102
Michael T. Brandt, ADESH, w/o enc., (E-File)
Alison M. Dorries, ENV-DO, w/o enc., (E-File)
Michael T. Saladen, ENV-RCRA, w/enc., (E-File)
Robert M. Gallegos, ENV-RCRA, w/enc., (E-File)
IRM-RMMSO, A150, (E-File)
ENV-RCRA Correspondence File, w/enc., K490



SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

NEW MEXICO
ENVIRONMENT DEPARTMENT

Ground Water Quality Bureau

Harold Runnels Building
1190 St. Francis Drive
P.O. Box 5469, Santa Fe, NM 87502-5469
Phone (505) 827-2918 Fax (505) 827-2965
www.nmenv.state.nm.us



DAVE MARTIN
Secretary
BUTCH LONGATE
Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

August 30, 2012

Robert Beers
Los Alamos National Laboratory
Environmental Protection Division
Water Quality & RCRA Group
P.O. Box 1663, Mail Stop K490
Los Alamos, NM 87545



**RE: Working Draft, Discharge Permit Renewal and Modification DP-857,
Los Alamos National Laboratory – Domestic and Industrial Wastewater Discharges**

Dear Mr. Beers:

The New Mexico Environment Department (NMED) is providing the enclosed *working draft* of Discharge Permit Renewal and Modification, DP-857, which proposes to renew and modify the authorization of domestic and industrial wastewater discharges at Los Alamos National Laboratory (LANL), for the Laboratory's review. The working draft discusses a number of complex technical details regarding LANL's wastewater treatment, disposal and reuse systems, and NMED is seeking to ensure that the technical details have been accurately captured. In the near future, NMED will formally publish notice of the availability of the (final) draft Renewal and Modification Permit for this facility and open a formal 30-day (at a minimum) comment period.

NMED requests a meeting with LANL's water quality/permitting technical staff to discuss this working draft. Please contact Robert George, Domestic Team Leader, at (505) 476-3648 or Gerald Knutson at (505) 827-2996 to arrange such a meeting.

Sincerely,

A handwritten signature in black ink, appearing to read "Clint Marshall".
Clint Marshall, Program Manager
Pollution Prevention Section

enc: Working Draft, Discharge Permit Renewal and Modification DP-857, w/Attachments 1, 2



Environmental Protection Division
Water Quality & RCRA Group (ENV-RCRA)
P.O. Box 1663, Mail Stop K490
Los Alamos, New Mexico 87545
(505) 667-0666

Date: **NOV 02 2012**
Refer To: ENV-RCRA-12-0242
LAUR: 12-25701

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: DP-857, SIGMA MESA EVAPORATION BASINS, LEAK COLLECTION SUMP ANALYTICAL RESULTS

In accordance with the terms and conditions of Discharge Permit DP-857 (modified October 1, 2002), Los Alamos National Security, LLC (LANS) is required to conduct monthly inspections of the leak collection sumps at the Sanitary Effluent Reclamation Facility's (SERF) Sigma Mesa evaporation basins. In the event that liquid is present in a sump, LANS is also required to sample the contents of the sump and submit the analytical results to the New Mexico Environment Department (NMED) Ground Water Quality Bureau. On August 29, 2012, water was discovered in the east leak collection sump of the southwest evaporation basin. Water quality samples were collected from the east leak collection sump on September 11, 2012. The following enclosures provide the NMED with the analytical results from this sampling event:

- Enclosure 1 contains a summary of detected organic compounds and all general inorganics and metals results.

Mr. Jerry Schoeppner
ENV-RCRA-12-0242

- 2 -

- Enclosure 2 contains copies the analytical data reports from GEL Laboratories LLC.

All results were less than the New Mexico Water Quality Commission (NMWQCC) Regulation 3103 standards for ground water with the exception of the following:

Regulation 3103 Contaminant	Result	Regulation 3103 Standard
Boron	1,260 µg/L	750 µg/L
Chloride	7,440 mg/L	250 mg/L
Total Dissolved Solids (TDS)	14,000 mg/L	1,000 mg/L

Field conductivity and pH measurements taken from water in both the east leak collection sump and the southwest evaporation basin were essentially identical.

Please contact Robert S. Beers by telephone at (505) 667-7969 or by email at bbeers@lanl.gov if you have questions regarding the enclosed water quality data.

Sincerely,



Michael T. Saladen
Group Leader, (Acting)
Water Quality & RCRA Group (ENV-RCRA)
Los Alamos National Security, LLC

MTS:RSB/lm

Enclosures:

1. Table 1. Summary of Water Quality Sampling Results, Southwest SERF Evaporation Basin, East Leak Collection Sump
2. Copies of Analytical Data Reports, GEL Laboratories LLC

Cy: James Hogan, NMED/SWQB, Santa Fe, NM, w/enc.
John E. Kieling, NMED/HWB, Santa Fe, NM, w/enc.
Stephen M. Yanicak, NMED/DOE/OB, w/enc., (E-File)
Gene E. Turner, LASO-EPO, w/enc., (E-File)
Hai Shen, LASO-EPO, w/enc., (E-File)
Carl A. Beard, PADOPS, w/o enc., A102
Michael T. Brandt, ADESH, w/o enc., (E-File)
Alison M. Dorries, ENV-DO, w/o enc., (E-File)
Andrew W. Erickson, UI-DO, w/enc., (E-File)

Mr. Jerry Schoeppner
ENV-RCRA-12-0242

- 3 -

Cy (continued):

Gary F. Blauert, ES-UI, w/enc., (E-File)

Mark Trujillo, ES-UI, w/enc., (E-File)

Robert S. Beers, ENV-RCRA, w/enc., K490

IRM-RMMSO, w/enc., (E-File)

ENV-RCRA, Correspondence File, w/enc., K490



Environmental Protection Division
Water Quality & RCRA Group (ENV-RCRA)
P.O. Box 1663, K490
Los Alamos, New Mexico 87545
(505) 687-0666

National Nuclear Security Administration
Los Alamos Site Office, A316
3747 West Jemez Road
Los Alamos, New Mexico 87545
(505) 687-5794/FAX (505) 687-5948

DEC 20 2012

Date:
Refer To: ENV-RCRA-12-0272
LAUR: 12-28859

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: DISCHARGE PERMIT DP-857 APPLICATION AMENDMENTS, DOMESTIC AND INDUSTRIAL WASTEWATER DISCHARGES

In accordance with direction from New Mexico Environment Department Ground Water Quality Bureau staff (personal communication, October 16, 2012), the US Department of Energy and Los Alamos National Security, LLC (DOE/LANS) are submitting the enclosed amendments to the June 30, 2010, application for renewal and modification of Discharge Permit DP-857 (ENV-RCRA-10-127). It is necessary for DOE/LANS to amend the June 2010 Discharge Permit application because of operational changes at Los Alamos National Laboratory since the application was submitted. The principal changes that have occurred since June 2010 are:

- Expansion of the Sanitary Effluent Reclamation Facility.
- Expansion of the Sigma Mesa Evaporation Basins.
- Commissioning of the effluent reuse system.

Mr. Jerry Schoeppner
ENV-RCRA-12-0272

-2-

The enclosed amendments to the June 2010 application are limited to the following portions of the original application: Parts A, B, and C of the NMED application form; and Appendix B. A copy of those portions of the June 30, 2010, Discharge Permit application—unamended—has been provided for your convenience in Enclosure 1. Amendments to the June 30, 2010, application are provided in Enclosure 2.

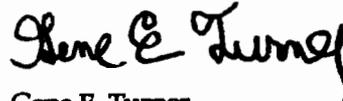
Please call Robert Beers at (505) 667-7969 if you have questions regarding this amended Discharge Permit application.

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 Site Office
National Nuclear Security Administration

Enclosures:

1. Copy the relevant portions of the June 30, 2010, Discharge Permit DP-857 Application
2. Amendments to the June 30, 2010, Discharge Permit DP-857 Application for Modification and Renewal

Cy: Bruce Yurdin, NMED/SWQB, Santa Fe, NM, w/enc.
John E. Kieling, NMED/HWB, Santa Fe, NM, w/enc.
Stephen M. Yanicak, NMED/DOE/OB, w/enc., (E-File)
Kevin W. Smith, LASO-OOM, w/enc., A316
Gene E. Turner, LASO-EPO, w/enc., (E-File)
Hai Shen, LASO-EPO, w/enc., (E-File)
Carl A. Beard, PADOPS, w/o enc., A102
Michael T. Brandt, ADESH, w/o enc., (E-File)
Alison M. Dorries, ENV-DO, w/o enc., (E-File)
Michael T. Saladen, ENV-RCRA, w/enc., (E-File)
Robert S. Beers, ENV-RCRA, w/enc., K490
Andrew W. Erickson, UI-DO, w/enc., (E-File)
Lawrence V. Chavez, UI-OPS, w/enc., (E-File)
Mell A. Smithour, ES-UI, w/enc., (E-File)
IRM-RMMSO, w/enc., (E-File)
ENV-RCRA Correspondence File, w/enc., K490



SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

NEW MEXICO
ENVIRONMENT DEPARTMENT

Ground Water Quality Bureau

Harold Runnels Building

1190 St. Francis Drive

PO Box 5469, Santa Fe, NM 87502-5469

Phone (505) 827-2918 Fax (505) 827-2965

www.nmenv.state.nm.us



DAVE MARTIN
Secretary

BUTCH TONGATE
Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

December 21, 2012

Anthony Grieggs, Group Leader
Los Alamos National Laboratory
Environmental Protection Division
Water Quality & RCRA Group
P.O. Box 1663, Mail Stop K490
Los Alamos, NM 87545



RE: Response to Notice of Intent to Discharge and Discharge Permit Required for Los Alamos National Laboratory Sewage Sludge Disposal, AI-856

Dear Mr. Grieggs:

The Ground Water Quality Bureau of the New Mexico Environment Department (NMED) received a Notice of Intent from you submitted on the behalf of Los Alamos National Laboratory (LANL) on August 2, 2012. The notice describes LANL's intent to compost biosolids at LANL's Sanitary Wastewater System (SWWS) Facility and to surface dispose the composted biosolids for beneficial use. The notice satisfies the requirements of Subsection A of 20.6.2.1201 NMAC of the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC. The composting facility at SWWS is located in Technical Area 46, approximately 2.5 miles south of Los Alamos, in Section 26, T19N, R06E, Los Alamos County. The proposed surface disposal area is located at the Technical Area 60 Sigma Mesa Staging Area, approximately 1.5 miles south of Los Alamos in Section 22, T19N, R06E, Los Alamos County.

NMED has reviewed the information provided in accordance with Subsection D of 20.6.2.1201 NMAC. You are hereby notified that a Discharge Permit is not required for the composting facility at SWWS provided the composting facility is registered with the Solid Waste Bureau of the NMED. You are also hereby notified that a Discharge Permit is required for surface disposal of composted biosolids as proposed for Technical Area 60.

Anthony Grieggs, AI-856
December 21, 2012
Page 2

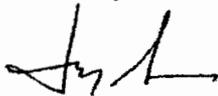
NMED recognizes that LANL is seeking to compost and beneficially reuse the biosolids generated at the SWWS facility, however the proposed surface disposal of composted biosolids at Technical Area 60 does not meet the United States Environmental Protection Agency's (USEPA) definition of "land application"; but rather fits the definition of "surface disposal" which is an activity carried out for the purpose of final disposal and without regard for the soil enhancing qualities of biosolids. NMED is supportive of beneficial reuse of biosolids at LANL, but suggests that composted biosolids material is more typically used in a deliberate manner to enhance soil by applying it at the agronomic uptake rate of vegetation actively growing at a site. If LANL wishes to submit an NOI for land application of composted biosolids from SWWS that proposes enhancement or reclamation at agronomic uptake rates, NMED is likely to not require a Discharge Permit.

To apply for a Discharge Permit, you must complete and submit three copies of the enclosed Discharge Permit application, along with the \$100 filing fee. Please be advised that any discharge from this facility without prior written approval from NMED would be a violation of the WQCC Regulations.

Any appeal of this determination that a Discharge Permit is required must be made to the New Mexico WQCC within 30 days of receipt of this letter, in accordance with Subsection B of 20.6.2.3112 NMAC. A copy of the WQCC Regulations, 20.6.2 NMAC, is available at <http://www.nmcpr.state.nm.us/nmac/title20/T20C006.htm>.

If you have any questions, please contact either Gerald Knutson at (505) 827-2996 or Clint Marshall, Program Manager of the Ground Water Pollution Prevention Section, at (505) 827-0027.

Sincerely,



Jerry Schoeppner, Chief
Ground Water Quality Bureau

JS:GK

- enc: Applying for a Discharge Permit: General Information
Discharge Permit Application, General Form
- cc: Robert Italiano, District Manager, NMED District II (via email at
robert.italiano@state.nm.us)
DP Required File
John Offersen, NMED SWB (via email at john.offersen@state.nm.us)
Richard Powell, NMED SWQB (via email at richard.powell@state.nm.us)
John Kieling, NMED HWB (via email at john.kieling@state.nm.us)

Anthony Grieggs, AI-856

December 21, 2012

Page 3

Steven Yanicak, NMED-DOE-Oversight Bureau (via email at
steven.yanicak@state.nm.us)
Erik Galloway, NMED-DOE-Oversight Bureau (via email at erik.galloway@state.nm.us)
Gene Turner, LASO-EO, Los Alamos National Laboratory, P.O. Box 1663, Mail Stop
A316, Los Alamos, NM 87545
Carl A. Beard, PADOPS, Los Alamos National Laboratory, P.O. Box 1663, Mail Stop
A102, Los Alamos, NM 87545
Michael T. Brandt, ADESHQ, Los Alamos National Laboratory, P.O. Box 1663, Mail
Stop K491, Los Alamos, NM 87545
Michael Saladen, ENV-RCRA, Los Alamos National Laboratory, P.O. Box 1663, Mail
Stop K490, Los Alamos, NM 87545
Robert M. Gallegos, ENV-RCRA, Los Alamos National Laboratory, P.O. Box 1663,
Mail Stop K490, Los Alamos, NM 87545
Robert Beers, ENV-RCRA, Los Alamos National Laboratory, P.O. Box 1663, Mail Stop
K490, Los Alamos, NM 87545
Alison Dories, ENV-DO, Los Alamos National Laboratory, P.O. Box 1663, Mail Stop
K491, Los Alamos, NM 87545

ENCLOSURE 3

**Monthly Inspection Photographs
SERF Evaporation Basins**

4th Quarter 2012

Note: No photographs available for December 2012

ENV-RCRA-13-0020

LAUR-13-20410

Date: JAN 3 0 2013



**Southwest basin, West
Inspection pipe (10-23-2012)**



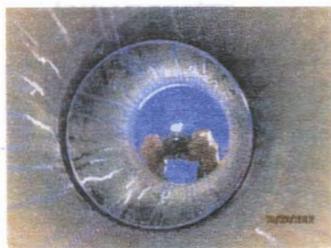
**Southwest basin, East
Inspection pipe (10-23-2012)**



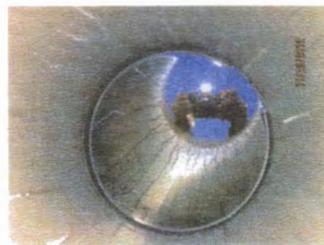
**Southwest basin , Influent
Pipe. (10-23-2012)**



**Southwest basin, Overflow
Pipe. (10-23-2012)**

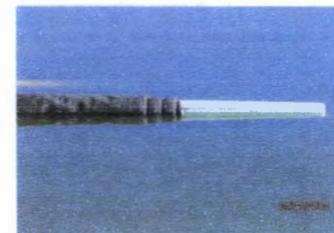


**Southeast basin, West
Inspection pipe (10-23-2012)**



**Southeast basin, East
Inspection pipe. (10-23-2012)**

**Southeast basin, Influent Pipe.
Pipe is under water.
No picture taken.**



**Southeast basin, Effluent
Pipe. (10-23-2012)**

South SERF Evaporation Basin Inspection Report October 23, 2012



Northwest basin, West inspection pipe, (10-23-2012)



Northwest basin, East inspection pipe. (10-23-2012)



Northwest basin, influent pipe. (10-23-2012)



Northwest basin, overflow pipe . (10-23-2012)



Northeast basin, West inspection pipe. (10-23-2012)



Northeast basin, East inspection pipe. (10-23-2012)



Northeast basin, influent pipe. (10-23-2012)



Northeast basin, overflow pipe. (10-23-2012)

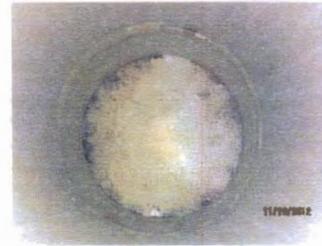
North SERF Evaporation Pond Inspection Report October 23, 2012



**Southwest basin, west inspection
Pipe. (11-19-2012)**



**Southwest basin east
Inspection pipe. (11-19-2012)**



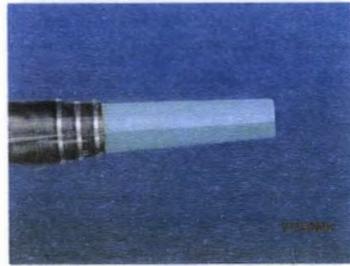
**Southeast basin, West
Inspection pipe (11-19-2012)**



**Southeast basin East
Inspection pipe (11-19-2012)**



**Southeast basin influent pipe
Under water (11-19-2012)**



**Southeast basin, overflow
Pipe (11-19-2012)**



**Southwest basin, overflow
Pipe. (11-19-2012)**



**Southwest basin, influent
Pipe (11-19-2012)**

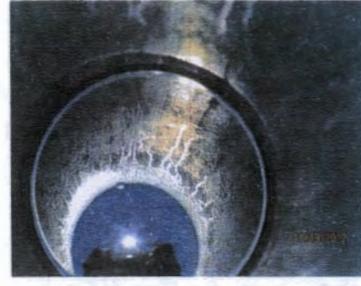
South SERF Evaporation Basin Inspection Report November 19, 2012



Northwest basin, West inspection Pipe. (11-19-2012)



Northwest basin, East inspection Pipe. (11-19-2012)



Northeast basin, West inspection Pipe. (11-19-2012)



Northeast basin, East inspection Pipe. (11-19-2012)



Northeast basin, influent pipe. (11-19-2012)



Northeast basin, overflow pipe. (11-19-2012)



Northwest basin, influent pipe. (11-19-2012)



Northwest basin, overflow pipe. (11-19-2012)

North SERF Evaporation Basin Inspection Report November 19, 2012

ENCLOSURE 4

**General Engineering Labs (GEL)
Analytical Laboratory Data Reports**

ENV-RCRA-13-0020

LAUR-13-20410

Date: JAN 30 2013

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 12-1502	Date Collected: 08/15/2012 11:15	Matrix: WATER
Lab Sample ID: 309791001	Date Received: 08/17/2012 09:00	
	Client: ARSL001	Project: ESHL00210
Client ID: SWWS46-12-22930	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Batch ID: 1241605	Inst: VOA3.I	Dilution: 1
Run Date: 08/28/2012 22:15	Analyst: CDS1	Purge Vol: 5 mL
Prep Date: 08/28/2012 22:15		
Data File: 082812V3\3Z233.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
67-64-1	Acetone	U	10.0	ug/L	3.00	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	3.00	10.0
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	J	4.63	ug/L	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform		27.7	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		15.7	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 12-1502	Date Collected: 08/15/2012 11:15	Matrix: WATER
Lab Sample ID: 309791001	Date Received: 08/17/2012 09:00	
Client ID: SWWS46-12-22930	Client: ARSL001	Project: ESHL00210
Batch ID: 1241605	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Run Date: 08/28/2012 22:15	Inst: VOA3.I	Dilution: 1
Prep Date: 08/28/2012 22:15	Analyst: CDS1	Purge Vol: 5 mL
Data File: 082812V3\3Z233.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		5.52	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	U	1.00	ug/L	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 12-1502	Date Collected: 08/15/2012 11:15	Matrix: WATER
Lab Sample ID: 309791001	Date Received: 08/17/2012 09:00	
Client ID: SWWS46-12-22930	Client: ARSL001	Project: ESHL00210
Batch ID: 1241605	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Run Date: 08/28/2012 22:15	Inst: VOA3.I	Dilution: 1
Prep Date: 08/28/2012 22:15	Analyst: CDS1	Purge Vol: 5 mL
Data File: 082812V3\3Z233.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	49.4	50.0	ug/L 98.8	(80%-123%)
Bromofluorobenzene	48.4	50.0	ug/L 96.7	(80%-120%)
Toluene-d8	51.1	50.0	ug/L 102	(80%-120%)

Tentatively Identified Compound Summary

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

**Semi-Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 12-1502	Date Collected: 08/15/2012 11:15	Matrix: WATER
Lab Sample ID: 309791001	Date Received: 08/17/2012 09:00	
Client ID: SWWS46-12-22930	Client: ARSL001	Project: ESHL00210
Batch ID: 1239741	Method: SW846 8270C	SOP Ref: GL-OA-E-009
Run Date: 08/22/2012 15:43	Inst: MSD3.1	Dilution: 1
Prep Date: 08/21/2012 17:24	Analyst: JLD1	Inj. Vol: 1 uL
Data File: S082212.B\3h2220.D	Aliquot: 1000 mL	Final Volume: 1 mL
	Column: DB-5ms	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
62-75-9	N-Methyl-N-nitrosomethylamine	U	10.0	ug/L	3.00	10.0
110-86-1	Pyridine	U	10.0	ug/L	3.00	10.0
62-53-3	Aniline	U	10.0	ug/L	3.00	10.0
108-95-2	Phenol	U	10.0	ug/L	3.00	10.0
111-44-4	bis(2-Chloroethyl) ether	U	10.0	ug/L	3.00	10.0
95-57-8	2-Chlorophenol	U	10.0	ug/L	3.00	10.0
541-73-1	1,3-Dichlorobenzene	U	10.0	ug/L	3.00	10.0
106-46-7	1,4-Dichlorobenzene	U	10.0	ug/L	3.00	10.0
95-50-1	1,2-Dichlorobenzene	U	10.0	ug/L	3.00	10.0
39638-32-9	bis(2-Chloroisopropyl)ether	U	10.0	ug/L	3.00	10.0
100-51-6	Benzyl alcohol	U	10.0	ug/L	3.00	10.0
95-48-7	o-Cresol	U	10.0	ug/L	3.00	10.0
65794-96-9	m,p-Cresols	U	10.0	ug/L	3.00	10.0
621-64-7	N-Nitrosodi-n-propylamine	U	10.0	ug/L	3.00	10.0
	<i>N-Nitrosodipropylamine</i>					
67-72-1	Hexachloroethane	U	10.0	ug/L	3.00	10.0
98-95-3	Nitrobenzene	U	10.0	ug/L	3.00	10.0
78-59-1	Isophorone	U	10.0	ug/L	3.00	10.0
88-75-5	2-Nitrophenol	U	10.0	ug/L	3.00	10.0
105-67-9	2,4-Dimethylphenol	U	10.0	ug/L	3.00	10.0
111-91-1	bis(2-Chloroethoxy)methane	U	10.0	ug/L	3.00	10.0
120-83-2	2,4-Dichlorophenol	U	10.0	ug/L	3.00	10.0
65-85-0	Benzoic acid	J	14.0	ug/L	6.00	20.0
106-47-8	4-Chloroaniline	U	10.0	ug/L	3.30	10.0
87-68-3	Hexachlorobutadiene	U	10.0	ug/L	3.00	10.0
59-50-7	Parachlorometa cresol	U	10.0	ug/L	3.00	10.0
	<i>4-Chloro-3-methylphenol</i>					
91-57-6	2-Methylnaphthalene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
90-12-0	1-Methylnaphthalene	U	1.00	ug/L	0.300	1.00
77-47-4	Hexachlorocyclopentadiene	U	10.0	ug/L	3.00	10.0
88-06-2	2,4,6-Trichlorophenol	U	10.0	ug/L	3.00	10.0
95-95-4	2,4,5-Trichlorophenol	U	10.0	ug/L	3.00	10.0
91-58-7	2-Chloronaphthalene	U	1.00	ug/L	0.300	1.00
88-74-4	2-Nitroaniline	U	10.0	ug/L	3.00	10.0
	<i>o-Nitroaniline</i>					
99-09-2	3-Nitroaniline	U	10.0	ug/L	3.00	10.0
	<i>m-Nitroaniline</i>					
131-11-3	Dimethylphthalate	U	10.0	ug/L	3.00	10.0
606-20-2	2,6-Dinitrotoluene	U	10.0	ug/L	3.00	10.0

**Semi-Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 12-1502	Date Collected: 08/15/2012 11:15	Matrix: WATER
Lab Sample ID: 309791001	Date Received: 08/17/2012 09:00	
Client ID: SWWS46-12-22930	Client: ARSL001	Project: ESHL00210
Batch ID: 1239741	Method: SW846 8270C	SOP Ref: GL-OA-E-009
Run Date: 08/22/2012 15:43	Inst: MSD3.I	Dilution: 1
Prep Date: 08/21/2012 17:24	Analyst: JLD1	Inj. Vol: 1 uL
Data File: S082212.B\3h2220.D	Aliquot: 1000 mL	Final Volume: 1 mL
	Column: DB-5ms	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
121-14-2	2,4-Dinitrotoluene	U	10.0	ug/L	3.00	10.0
208-96-8	Acenaphthylene	U	1.00	ug/L	0.300	1.00
83-32-9	Acenaphthene	U	1.00	ug/L	0.300	1.00
51-28-5	2,4-Dinitrophenol	U	20.0	ug/L	5.00	20.0
132-64-9	Dibenzofuran	U	10.0	ug/L	3.00	10.0
58-90-2	2,3,4,6-Tetrachlorophenol	U	10.0	ug/L	3.00	10.0
84-66-2	Diethylphthalate	U	10.0	ug/L	3.00	10.0
100-02-7	4-Nitrophenol	U	10.0	ug/L	3.00	10.0
86-73-7	Fluorene	U	1.00	ug/L	0.300	1.00
7005-72-3	4-Chlorophenylphenylether	U	10.0	ug/L	3.00	10.0
100-01-6	4-Nitroaniline	U	10.0	ug/L	3.00	10.0
	<i>p-Nitroaniline</i>					
534-52-1	2-Methyl-4,6-dinitrophenol	U	10.0	ug/L	3.00	10.0
122-39-4	Diphenylamine	U	10.0	ug/L	3.00	10.0
122-66-7	Azobenzene	U	10.0	ug/L	3.00	10.0
	<i>1,2-Diphenylhydrazine</i>					
101-55-3	4-Bromophenylphenylether	U	10.0	ug/L	3.00	10.0
118-74-1	Hexachlorobenzene	U	10.0	ug/L	3.00	10.0
87-86-5	Pentachlorophenol	U	10.0	ug/L	3.00	10.0
88-85-7	Dinoseb	U	10.0	ug/L	3.00	10.0
85-01-8	Phenanthrene	U	1.00	ug/L	0.300	1.00
120-12-7	Anthracene	U	1.00	ug/L	0.300	1.00
84-74-2	Di-n-butylphthalate	U	10.0	ug/L	3.00	10.0
206-44-0	Fluoranthene	U	1.00	ug/L	0.300	1.00
129-00-0	Pyrene	U	1.00	ug/L	0.300	1.00
85-68-7	Butylbenzylphthalate	U	10.0	ug/L	3.00	10.0
117-81-7	bis(2-Ethylhexyl)phthalate	U	10.0	ug/L	3.00	10.0
56-55-3	Benzo(a)anthracene	U	1.00	ug/L	0.300	1.00
218-01-9	Chrysene	U	1.00	ug/L	0.300	1.00
117-84-0	Di-n-octylphthalate	U	10.0	ug/L	3.00	10.0
205-99-2	Benzo(b)fluoranthene	U	1.00	ug/L	0.300	1.00
207-08-9	Benzo(k)fluoranthene	U	1.00	ug/L	0.300	1.00
50-32-8	Benzo(a)pyrene	U	1.00	ug/L	0.440	1.00
193-39-5	Indeno(1,2,3-cd)pyrene	U	1.00	ug/L	0.300	1.00
53-70-3	Dibenzo(a,h)anthracene	U	1.00	ug/L	0.300	1.00
191-24-2	Benzo(ghi)perylene	U	1.00	ug/L	0.300	1.00
123-91-1	1,4-Dioxane	U	10.0	ug/L	3.00	10.0
55-18-5	N-Nitrosodiethylamine	U	10.0	ug/L	3.00	10.0
930-55-2	N-Nitrosopyrrolidine	U	10.0	ug/L	3.00	10.0

**Semi-Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 12-1502	Date Collected: 08/15/2012 11:15	Matrix: WATER
Lab Sample ID: 309791001	Date Received: 08/17/2012 09:00	
Client ID: SWWS46-12-22930	Client: ARSL001	Project: ESHL00210
Batch ID: 1239741	Method: SW846 8270C	SOP Ref: GL-OA-E-009
Run Date: 08/22/2012 15:43	Inst: MSD3.1	Dilution: 1
Prep Date: 08/21/2012 17:24	Analyst: JLD1	Inj. Vol: 1 uL
Data File: S082212.B\3h2220.D	Aliquot: 1000 mL	Final Volume: 1 mL
	Column: DB-5ms	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
924-16-3	N-Nitrosodi-n-butylamine	U	10.0	ug/L	3.00	10.0
95-94-3	1,2,4,5-Tetrachlorobenzene	U	10.0	ug/L	3.00	10.0
608-93-5	Pentachlorobenzene	U	10.0	ug/L	3.00	10.0
1912-24-9	Atrazine	U	10.0	ug/L	3.00	10.0
92-87-5	Benzidine	U	10.0	ug/L	3.00	10.0
91-94-1	3,3'-Dichlorobenzidine	U	10.0	ug/L	3.00	10.0
120-82-1	1,2,4-Trichlorobenzene	U	10.0	ug/L	3.00	10.0

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
2,4,6-Tribromophenol	63.9	100	ug/L	63.9	(26%-131%)
2-Fluorobiphenyl	22.2	50.0	ug/L	44.5	(29%-102%)
2-Fluorophenol	32.3	100	ug/L	32.3	(15%-78%)
Nitrobenzene-d5	26.1	50.0	ug/L	52.1	(36%-125%)
Phenol-d5	17.4	100	ug/L	17.4	(10%-72%)
p-Terphenyl-d14	32.4	50.0	ug/L	64.7	(31%-133%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown	1.818	13.4	ug/L	0	J
000110-83-8	Cyclohexene	2.133	11.6	ug/L	97	NJ
	unknown	3.014	8.93	ug/L	0	J
	unknown	3.634	9.36	ug/L	0	J

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample No.

SWWS46-12-22930Lab Code: GELDate Received: 17-AUG-12Instrument: LCMSMSGEL Job No (SDG): 12-1502Method: SW846 6850 ModifiedGEL Sample ID: 309791001Matrix: WATERDate Filtered: 22-AUG-12Extraction Batch ID: 1238722Injection Volume (uL): 20Extraction Type: Filter/DAISample Volume/Weight: 10.0 mL

%Solids:

Concentrated Extract Volume: 10.0

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.050	ug/L	U	1	22-AUG-12 17:41	per0822033a
	Perchlorate Isotope Ratio						1	22-AUG-12 17:41	per0822033a
14797-73-0	Perchlorate-101	.05	.2	0.050	ug/L	U	1	22-AUG-12 17:41	per0822033a
	Perchlorate-O(18)			0.594	ug/L		1	22-AUG-12 17:41	per0822033a

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

*Concentration =

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

**PCB
Certificate of Analysis
Sample Summary**

SDG Number: 12-1502	Date Collected: 08/15/2012 11:15	Matrix: WATER
Lab Sample ID: 309791002	Date Received: 08/17/2012 09:00	
Client ID: SWWS46-12-22930	Client: ARSL001	Project: ESHL00210
Batch ID: 1242535	Method: SW846 3535A/8082	SOP Ref: GL-OA-E-040
Run Date: 09/04/2012 10:26	Inst: ECD8A.I	Dilution: 1
Prep Date: 08/31/2012 10:50	Analyst: JXM	Inj. Vol: 1 uL
Data File: 090412.B\8i0419.D	Aliquot: 940 mL	Final Volume: 1 mL
090412.B\8i0419.D	Column: 1 RTX-CLPEST1	
	2 RTX-CLPEST2	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	0.106	ug/L	0.0354	0.106	1
11104-28-2	Aroclor-1221	U	0.106	ug/L	0.0354	0.106	1
11141-16-5	Aroclor-1232	U	0.106	ug/L	0.0354	0.106	1
53469-21-9	Aroclor-1242	U	0.106	ug/L	0.0354	0.106	1
12672-29-6	Aroclor-1248	U	0.106	ug/L	0.0354	0.106	1
11097-69-1	Aroclor-1254	U	0.106	ug/L	0.0354	0.106	1
11096-82-5	Aroclor-1260	U	0.106	ug/L	0.0354	0.106	1
37324-23-5	Aroclor-1262	U	0.106	ug/L	0.0354	0.106	1

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
Decachlorobiphenyl	0.215	0.213	101	(33%-120%)
4cmx	0.191	0.213	89.9	(34%-120%)

GEL Laboratories LLC

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 12-1502

METHOD TYPE: EPA

SAMPLE ID: 309791001

CLIENT ID: SWWS46-12-22930

CONTRACT: ESHL00210

MATRIX:Water

DATE RECEIVED 17-AUG-12

LEVEL: Low **%SOLIDS:**

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7439-97-6	Mercury	0.067	ug/L	U		AV	0.067	1	MER536	083112W1-4

***Analytical Methods:**

AV EPA 245.1/245.2

ENCLOSURE 4

GEL Laboratories LLC

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 12-1502

METHOD TYPE: EPA

SAMPLE ID: 309791003

CLIENT ID: SWWS46-12-22932

CONTRACT: ESHL00210

MATRIX: Water

DATE RECEIVED 17-AUG-12

LEVEL: Low %SOLIDS:

CAS No	Analyte	Result	Units	C	Qual	M*	MDL	DF	Inst ID	Analytical Run
7439-97-6	Mercury	0.067	ug/L	U		AV	0.067	1	MER536	083112W1-4
7429-90-5	Aluminum	68	ug/L	U		P	68	1	OPTIMA3	082412A-1
7440-36-0	Antimony	1	ug/L	U		MS	1	1	ICPMS5	120905-2
7440-38-2	Arsenic	1.9	ug/L	J		MS	1.7	1	ICPMS5	120906-3
7440-39-3	Barium	14.5	ug/L			P	1	1	OPTIMA3	082412A-1
7440-41-7	Beryllium	1	ug/L	U		P	1	1	OPTIMA3	082412A-1
7440-42-8	Boron	57.7	ug/L			P	15	1	OPTIMA3	082412A-1
7440-43-9	Cadmium	0.11	ug/L	U		MS	0.11	1	ICPMS5	120906-3
7440-70-2	Calcium	23200	ug/L			P	50	1	OPTIMA3	082412A-1
7440-47-3	Chromium	2	ug/L	U		MS	2	1	ICPMS5	120905-2
7440-48-4	Cobalt	1	ug/L	U		P	1	1	OPTIMA3	082412A-1
7440-50-8	Copper	4.2	ug/L	J		P	3	1	OPTIMA3	082412A-1
7439-89-6	Iron	121	ug/L			P	30	1	OPTIMA3	082412A-1
7439-92-1	Lead	0.5	ug/L	U		MS	0.5	1	ICPMS5	120906-3
7439-95-4	Magnesium	7090	ug/L			P	110	1	OPTIMA3	082412A-1
7439-96-5	Manganese	18.7	ug/L			P	2	1	OPTIMA3	082412A-1
7439-98-7	Molybdenum	10.3	ug/L			MS	0.165	1	ICPMS5	120906-3
7440-02-0	Nickel	1.36	ug/L	J		MS	0.5	1	ICPMS5	120905-2
7440-09-7	Potassium	17800	ug/L			P	50	1	OPTIMA3	082412A-1
7782-49-2	Selenium	1.5	ug/L	U		MS	1.5	1	ICPMS5	120906-3
7440-22-4	Silver	0.2	ug/L	U		MS	0.2	1	ICPMS5	120905-2
7440-23-5	Sodium	92500	ug/L			P	100	1	OPTIMA3	082412A-1
7440-24-6	Strontium	36.7	ug/L			P	1	1	OPTIMA3	082412A-1
7440-28-0	Thallium	0.45	ug/L	U		MS	0.45	1	ICPMS5	120905-2
7440-31-5	Tin	25	ug/L	U		P	25	10	OPTIMA3	082412A-1
7440-61-1	Uranium	0.55	ug/L			MS	0.067	1	ICPMS5	120906-3

GEL Laboratories LLC

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 12-1502

METHOD TYPE: EPA

SAMPLE ID: 309791003

CLIENT ID: SWWS46-12-22932

CONTRACT: ESHL00210

MATRIX: Water

DATE RECEIVED 17-AUG-12

LEVEL: Low %SOLIDS:

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7440-62-2	Vanadium	12.1	ug/L			P	1	1	OPTIMA3	082412A-1
7440-66-6	Zinc	41.7	ug/L			P	3.3	1	OPTIMA3	082412A-1
	Hardness as CaCO3	87.1	mg/L				0.453	1	CALC001	

***Analytical Methods:**

MS SW846 3005/6020 DOE-AL
P SW846 3005/6010B
AV EPA 245.1/245.2
SM 2340 B

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: September 13, 2012

Company : Los Alamos National Laboratory
 Address : PO Box 1663
 TA-03, SM271, Drop Pt. 02U, Rm111
 Los Alamos, New Mexico 87545

Contact: Keith Greene
 Project: LANL-WQH Water Samples

Client SDG: 12-1502

Client Sample ID: SWWS46-12-22930
 Sample ID: 309791001
 Matrix: Water
 Collect Date: 15-AUG-12 11:15
 Receive Date: 17-AUG-12
 Collector: Client

Project: ESHL00210
 Client ID: ARSL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
EPA 300.0 Chloride in Liquid "As Received"											
Bromide	U	ND	0.067	0.200	mg/L	1	VH1	08/22/12	0024	1239339	1
Fluoride		0.275	0.033	0.100	mg/L	1					
Sulfate		19.2	0.133	0.400	mg/L	1					
Chloride		63.0	0.670	2.00	mg/L	10	VH1	08/22/12	1618	1239339	2
Nutrient Analysis											
EPA 350.1 Nitrogen, Ammonia L "As Received"											
Nitrogen, Ammonia		0.229	0.017	0.050	mg/L	1	KLP1	09/05/12	1632	1243075	3
EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"											
Nitrogen, Nitrate/Nitrite		1.33	0.085	0.250	mg/L	5	AXH3	08/21/12	1412	1239601	4
Nitrogen, Total Kjeldahl (TKN) "As Received"											
Nitrogen, Total Kjeldahl		0.887	0.035	0.100	mg/L	1	KLP1	09/05/12	1429	1240586	5
Solids Analysis											
EPA 160.1 Solids, Dissolved-F "As Received"											
Total Dissolved Solids		441	3.40	14.3	mg/L		LYG1	08/22/12	0819	1240118	6

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	KLP1	08/21/12	1245	1239585
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	KLP1	09/05/12	1315	1243073
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	KLP1	09/04/12	1700	1240585

The following Analytical Methods were performed:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: September 13, 2012

Company : Los Alamos National Laboratory
 Address : PO Box 1663
 TA-03, SM271, Drop Pt. 02U, Rm111
 Los Alamos, New Mexico 87545

Contact: Keith Greene
 Project: LANL-WQH Water Samples

Client SDG: 12-1502

Client Sample ID: SWWS46-12-22932
 Sample ID: 309791003
 Matrix: Water
 Collect Date: 15-AUG-12 11:15
 Receive Date: 17-AUG-12
 Collector: Client

Project: ESHL00210
 Client ID: ARSL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Flow Injection Analysis											
WSP-CN(T) "As Received"											
Cyanide, Total	J	1.69	1.67	5.00	ug/L	1	AXH3	08/22/12	1426	1240018	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 335.4	EPA 335.4 Total Cyanide	AXH3	08/22/12	1058	1240017

The following Analytical Methods were performed:

Method	Description	Analyst	Comments
1	EPA 335.4		

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: Keith Greene
 Project: LANL-WQH Water Samples

Report Date: September 11, 2012

Client Sample ID: SWWS46-12-22930
 Sample ID: 309791001
 Matrix: Water
 Collect Date: 15-AUG-12
 Receive Date: 17-AUG-12
 Collector: Client

Project: ESHL00210
 Client ID: ARSL001

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting													
<i>GFPC, Gross Alpha Liquid "As Received"</i>													
Alpha	U	1.66	+/-0.909	2.63	+/-0.920	3.00	pCi/L		DYT1	09/01/12	1927	1239941	1
<i>GFPC, Ra228, Liquid "As Received"</i>													
Radium-228	U	0.402	+/-0.181	0.561	+/-0.189	1.00	pCi/L		KDF1	08/31/12	0912	1239954	2
Rad Radium-226													
<i>Lucas Cell, Ra226, liquid "As Received"</i>													
Radium-226	U	0.116	+/-0.101	0.354	+/-0.101	1.00	pCi/L		KSD1	09/07/12	1310	1241249	3

The following Analytical Methods were performed

Method	Description
1	EPA 900.0/SW846 9310
2	EPA 904.0/SW846 9320 Modified
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"	1239954	72.8	(50%-105%)

Notes:

TPU and Uncertainty are calculated at the 67% confidence level (1-sigma).

Certificate of Analysis

Report Date: November 23, 2012

Company : Los Alamos National Laboratory
 Address : PO Box 1663
 TA-03, SM271, Drop Pt. 02U, Rm111
 Los Alamos, New Mexico 87545
 Contact: Keith Greene
 Project: LANL WQH WQCC Regs
 Client SDG: 2013-333

Client Sample ID: SWWS46-13-24778
 Sample ID: 315362001
 Matrix: Waste Water
 Collect Date: 15-NOV-12 13:20
 Receive Date: 16-NOV-12
 Collector: Client
 Project: ESHL00110
 Client ID: ARSL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
EPA 300.0 Chloride in Liquid "As Received"											
Chloride		72.2	0.670	2.00	mg/L	10	MAR1	11/20/12	1435	1264550	1
Nutrient Analysis											
EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"											
Nitrogen, Nitrate/Nitrite		7.10	0.085	0.250	mg/L	5	KLP1	11/19/12	1207	1263016	2
Nitrogen as Ammonia "As Received"											
Nitrogen, Ammonia		0.0619	0.017	0.050	mg/L	1	KLP1	11/19/12	1324	1263572	3
Nitrogen, Total Kjeldahl (TKN) "As Received"											
Nitrogen, Total Kjeldahl		0.603	0.033	0.100	mg/L	1	KLP1	11/20/12	1335	1264326	4
Solids Analysis											
EPA 160.1 Solids, Dissolved-F "As Received"											
Total Dissolved Solids		406	3.40	14.3	mg/L		LYG1	11/19/12	0819	1264462	5

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	KLP1	11/19/12	1045	1263571
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	KLP1	11/19/12	1600	1264325

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	

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: November 23, 2012

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

Client SDG: 2013-331

Client Sample ID: SWWS46-13-24772
 Sample ID: 315361001
 Matrix: Waste Water
 Collect Date: 15-NOV-12 10:19
 Receive Date: 16-NOV-12
 Collector: Client

Project: ESHL00110
 Client ID: ARSL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
EPA 300.0 Chloride in Liquid "As Received"											
Chloride		38.1	0.335	1.00	mg/L	5	MAR1	11/20/12	1308	1264550	1
Nutrient Analysis											
EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"											
Nitrogen, Nitrate/Nitrite		2.18	0.085	0.250	mg/L	5	KLP1	11/19/12	1203	1263016	2
Nitrogen as Ammonia "As Received"											
Nitrogen, Ammonia		0.257	0.017	0.050	mg/L	1	KLP1	11/19/12	1247	1263572	3
Nitrogen, Total Kjeldahl (TKN) "As Received"											
Nitrogen, Total Kjeldahl		0.453	0.033	0.100	mg/L	1	KLP1	11/20/12	1330	1264326	4
Solids Analysis											
EPA 160.1 Solids, Dissolved-F "As Received"											
Total Dissolved Solids		231	3.40	14.3	mg/L		LYG1	11/19/12	0819	1264462	5

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	KLP1	11/19/12	1045	1263571
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	KLP1	11/19/12	1600	1264325

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	

ENCLOSURE 4
GEL LABORATORIES LLC
 2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: November 23, 2012

Company : Los Alamos National Laboratory
 Address : PO Box 1663
 TA-03, SM271, Drop Pt. 02U, Rm111
 Los Alamos, New Mexico 87545

Contact: Keith Greene
 Project: LANL WQH WQCC Regs

Client SDG: 2013-331

Client Sample ID: SWWS46-13-24773
 Sample ID: 315361002
 Matrix: Waste Water
 Collect Date: 15-NOV-12 10:30
 Receive Date: 16-NOV-12
 Collector: Client

Project: ESHL00110
 Client ID: ARSL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
EPA 300.0 Chloride in Liquid "As Received"											
Chloride		11.5	0.067	0.200	mg/L	1	MAR1	11/20/12	0505	1264550	1
Nutrient Analysis											
EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"											
Nitrogen, Nitrate/Nitrite		1.06	0.085	0.250	mg/L	5	KLP1	11/19/12	1206	1263016	2
Nitrogen as Ammonia "As Received"											
Nitrogen, Ammonia		0.209	0.017	0.050	mg/L	1	KLP1	11/19/12	1324	1263572	3
Nitrogen, Total Kjeldahl (TKN) "As Received"											
Nitrogen, Total Kjeldahl		1.47	0.033	0.100	mg/L	1	KLP1	11/20/12	1331	1264326	4
Solids Analysis											
EPA 160.1 Solids, Dissolved-F "As Received"											
Total Dissolved Solids		390	3.40	14.3	mg/L		LYG1	11/19/12	0819	1264462	5

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	KLP1	11/19/12	1045	1263571
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	KLP1	11/19/12	1600	1264325

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	