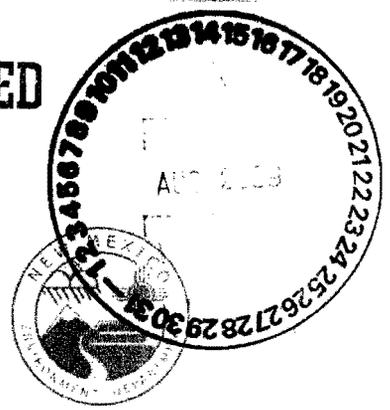


Permit  ENTERED



NEW MEXICO
ENVIRONMENT DEPARTMENT

Surface Water Quality Bureau

Harold Runnels Building, N2050
1190 South St. Francis Drive (87505)
P.O. Box 5469, Santa Fe, NM 87502-5469
Phone (505) 827-0187 Fax (505) 827-0160
www.nmenv.state.nm.us

BILL RICHARDSON
Governor
DIANE DENISH
Lientenant Governor

RON CURRY
Secretary
JON GOLDSTEIN
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

August 14, 2009

Mr. Donald L. Winchell Jr., Manager
National Nuclear Security Administration
Los Alamos Site Office, MS A316
528 35th Street
Los Alamos, New Mexico 87545

Mr. Chris Cantwell, Associate Director
Environment, Safety, Health & Quality MS K491
Los Alamos National Security, LLC
P.O. Box 1663
Los Alamos, New Mexico 87545

RE: Compliance Evaluation Inspection of the Los Alamos National Laboratory (NM0028355), Los Alamos County, New Mexico, July 13 to 15, 2009

Dear Mr. Winchell and Mr. Cantwell,

Enclosed, please find a copy of the report for the referenced inspection that the New Mexico Environment Department (NMED) conducted at your facility on behalf of the U.S. Environmental Protection Agency (USEPA). This inspection report will be sent to the USEPA in Dallas for their review. These inspections are used by USEPA to determine compliance with the National Pollutant Discharge Elimination System (NPDES) permitting program in accordance with requirements of the federal Clean Water Act.

Introduction, treatment scheme, solid maintenance and problems noted during this inspection are discussed in the Further Explanations section of the inspection report. Problems were found in the areas of recordkeeping and reporting, operations and maintenance, self-monitoring, flow measurement, and laboratory.

You are encouraged to review the inspection report, required to correct any problems noted during the inspection, and to modify your operational and/or administrative procedures, as appropriate. Further, you are encouraged to notify in writing, both the USEPA and NMED regarding modifications and compliance schedules at the addresses below:

Regional Administrator
US Environmental Protection Agency
Allied Bank Tower
Region VI Enforcement Branch (6W-E)
1445 Ross Avenue
Dallas, Texas 75202-2733

Program Manager
New Mexico Environment Department
Surface Water Quality Bureau
Point Source Regulation Section
P.O. Box 5469
Santa Fe, New Mexico 87502

34384



We appreciate the cooperation of DOE and LANS staff, especially Marc Bailey and Mike Saladen of LANS ENV-RCRA, during the inspection. If you have any questions about this inspection report, please contact us at 505-827-0418 (Erin) or 505-827-1041 (Sandra).

Sincerely,



Erin S. Trujillo
Surface Water Quality Bureau



Sandra Gabaldón
Surface Water Quality Bureau

- cc: -Marcia Gail Bohling, USEPA (6EN-AS) by e-mail
-Stacey Bennett-Dwyer, USEPA (6EN-AS) by e-mail
-Carol Peters-Wagnon, USEPA (6EN-WM) by e-mail
-Diana McDonald, USEPA (6EN-WM) by e-mail
-Willie Lane, USEPA NPDES Permits Section Chief (6WQPP) by e-mail
-Robert Italiano, NMED District II, District Manager (Santa Fe) by e-mail
-Gene Turner, Environmental Permitting Manager, U.S. Department of Energy, National Nuclear Security Administration, Los Alamos Site Office, MS A316, 528 35th Street, Los Alamos, New Mexico 87545
-Victoria (Tori) George, Division Leader, Environmental Protection, MS J978, Los Alamos National Security, LLC, P.O. Box 1663, Los Alamos, New Mexico 87545
-Anthony R. Grieggs, Group Leader, ENV-RCRA, MS K490, Los Alamos National Security, LLC, P.O. Box 1663, Los Alamos, New Mexico 87545
-Mike Saladen, Team Leader, LANS ENV-RCRA by e-mail



Form Approved
OMB No. 2040-0003
Approval Expires 7-31-85

NPDES Compliance Inspection Report

Section A: National Data System Coding

Transaction Code			NPDES										yr/mo/day			Inspec. Type		Inspector		Fac Type								
1	N	2	5	3	N	M	0	0	2	8	3	5	5	11	12	0	9	0	7	1	3	17	18	C	19	S	20	4
Remarks																												
N A T I O N A L R E S E A R C H L A B O R A T O R Y																												
Inspection Work Days						Facility Evaluation Rating						BI		QA		Reserved												
67						70						71		72		73 74 75 M A J O R 80												

Section B: Facility Data

Name and Location of Facility Inspected (For industrial users discharging to POTW, also include POTW name and NPDES permit number)		Entry Time /Date		Permit Effective Date	
Los Alamos National Laboratory (LANL), Los Alamos County, New Mexico. LANL is jointly operated by the U.S. Department of Energy (DOE), National Nuclear Security Administration (NNSA), Los Alamos Site Office (LASO) and Los Alamos National Security, LLC (LANS).		0758 hours / July 13, 2009		August 1, 2007	
		Exit Time/Date		Permit Expiration Date	
		1727 hours / July 15, 2009		July 31, 2012	
Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s)				Other Facility Data	
-Gene Turner/Environmental Permitting Manager, U.S. DOE NNSA LASO/505-667-5794; -Victoria (Toni) George/Division Leader, LANS-EP/505-667-2211; -Tina Marie Sandoval/Deputy Group Leader, LANS ENV-RCRA/505-665-2288; -Mike Saladen/ Team Leader, LANS ENV-RCRA/505-665-6085; and -Marc Bailey/ Environmental Professional, LANS ENV-RCRA/505-665-8135				See report for outfall location information	
Name, Address of Responsible Official/Title/Phone and Fax Number				SIC 9922, 9711, 9661, and 9611	
-Donald L. Winchell Jr./U.S. Department of Energy, National Nuclear Security Administration/Los Alamos Site Office, MS A316, 528 35 th Street, Los Alamos, New Mexico 87545/Manager/505-667-5105 and fax 505-665-1718 -Chris Cantwell, Environment, Safety, Health & Quality MS K491, Los Alamos National Security, LLC, P.O. Box 1663, Los Alamos, New Mexico 87545/ Associate Director				Contacted Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Section C: Areas Evaluated During Inspection
(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)

S	Permit	M	Flow Measurement	M	Operations & Maintenance	N	CSO/SSO
M	Records/Reports	M	Self-Monitoring Program	N	Sludge Handling/Disposal	N	Pollution Prevention
S	Facility Site Review	S	Compliance Schedules	N	Pretreatment	N	Multimedia
M	Effluent/Receiving Waters	M	Laboratory	N	Storm Water	N	Other:

Section D: Summary of Findings/Comments (Attach additional sheets if necessary)

- This section of the report covers the inspection of outfalls: 001, 051, 02A129, 03A021, 03A022, 03A027, 03A048, 03A113, 03A130, 03A160, 03A181, 03A185, 03A199 and 05A055. Outfall 13S was evaluated separately and is attached with a separate Form 3560-3.
- See attached checklist reports with further explanations.

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Telephone/Fax	Date
Erin S. Trujillo	NMED/SWQB/505-827-0418	08/14/2009
Signature of Management QA Reviewer	Agency/Office/Phone and Fax Numbers	Date
Richard E. Powell	NMED/SWQB/505-827-2798	08/14/2009

SECTION A - PERMIT VERIFICATION

PERMIT SATISFACTORILY ADDRESSES OBSERVATIONS S M U NA (FURTHER EXPLANATION ATTACHED No)
 DETAILS: **On-site representatives stated that copy of permit modification dated July 17, 2007 will be sent to facility outfall contacts.**

- 1. CORRECT NAME AND MAILING ADDRESS OF PERMITTEE Y N NA
- 2. NOTIFICATION GIVEN TO EPA/STATE OF NEW DIFFERENT OR INCREASED DISCHARGES. **Added tower at LDCC pending** Y N NA
- 3. NUMBER AND LOCATION OF DISCHARGE POINTS AS DESCRIBED IN PERMIT Y N NA
- 4. ALL DISCHARGES ARE PERMITTED Y N NA

SECTION B - RECORDKEEPING AND REPORTING EVALUATION

RECORDS AND REPORTS MAINTAINED AS REQUIRED BY PERMIT. S M U NA (FURTHER EXPLANATION ATTACHED Yes)
 DETAILS: **Reviewed DMRs since last inspection from July 2008 to June 2009 and associated data for July 2008.**

- 1. ANALYTICAL RESULTS CONSISTENT WITH DATA REPORTED ON DMRs Y N NA
- 2. SAMPLING AND ANALYSES DATA ADEQUATE AND INCLUDE. **See discussion for pH and TRC** S M U NA
 - a) DATES, TIME(S) AND LOCATION(S) OF SAMPLING **Documentation not provided for pH and TRC (outfall 051)** Y N NA
 - b) NAME OF INDIVIDUAL PERFORMING SAMPLING **Documentation not provided for pH and TRC (outfall 051)** Y N NA
 - c) ANALYTICAL METHODS AND TECHNIQUES. **Documentation not provided pH and TRC** Y N NA
 - d) RESULTS OF ANALYSES AND CALIBRATIONS. Y N NA
 - e) DATES AND TIMES OF ANALYSES. **Time documentation not provided for pH and TRC (outfall 051)** Y N NA
 - f) NAME OF PERSON(S) PERFORMING ANALYSES. **Documentation not provided (outfall 051)** Y N NA
- 3. LABORATORY EQUIPMENT CALIBRATION AND MAINTENANCE RECORDS ADEQUATE. S M U NA
- 4. PLANT RECORDS INCLUDE SCHEDULES, DATES OF EQUIPMENT MAINTENANCE AND REPAIR. S M U NA
- 5. EFFLUENT LOADINGS CALCULATED USING DAILY EFFLUENT FLOW AND DAILY ANALYTICAL DATA. Y N NA

SECTION C - OPERATIONS AND MAINTENANCE

TREATMENT FACILITY PROPERLY OPERATED AND MAINTAINED. S M U NA (FURTHER EXPLANATION ATTACHED Yes)
 DETAILS: **At Sigma Facility (outfall 022) de-chlorination system not installed for emergency once through cooling system.**

- 1. TREATMENT UNITS PROPERLY OPERATED. S M U NA
- 2. TREATMENT UNITS PROPERLY MAINTAINED. S M U NA
- 3. STANDBY POWER OR OTHER EQUIVALENT PROVIDED. S M U NA
- 4. ADEQUATE ALARM SYSTEM FOR POWER OR EQUIPMENT FAILURES AVAILABLE. S M U NA
- 5. ALL NEEDED TREATMENT UNITS IN SERVICE **Except at outfall 022** S M U NA
- 6. ADEQUATE NUMBER OF QUALIFIED OPERATORS PROVIDED. **Except marginal at RLWTF** S M U NA
- 7. SPARE PARTS AND SUPPLIES INVENTORY MAINTAINED. S M U NA
- 8. OPERATION AND MAINTENANCE MANUAL AVAILABLE. Y N NA
 STANDARD OPERATING PROCEDURES AND SCHEDULES ESTABLISHED. **Except Power Plant (outfall 001)** Y N NA
 PROCEDURES FOR EMERGENCY TREATMENT CONTROL ESTABLISHED. **Except Sigma (outfall 022)** Y N NA

SECTION C - OPERATIONS AND MAINTENANCE (CONT'D)

9. HAVE BYPASSES/OVERFLOWS OCCURRED AT THE PLANT OR IN THE COLLECTION SYSTEM IN THE LAST YEAR? Y N NA
 IF SO, HAS THE REGULATORY AGENCY BEEN NOTIFIED? Y N NA
 HAS CORRECTIVE ACTION BEEN TAKEN TO PREVENT ADDITIONAL BYPASSES/OVERFLOWS? Y N NA

10. HAVE ANY HYDRAULIC OVERLOADS OCCURRED AT THE TREATMENT PLANT? Y N NA
 IF SO, DID PERMIT VIOLATIONS OCCUR AS A RESULT? Y N NA

SECTION D - SELF-MONITORING

PERMITTEE SELF-MONITORING MEETS PERMIT REQUIREMENTS. S M U NA (FURTHER EXPLANATION ATTACHED Yes)
 DETAILS:

1. SAMPLES TAKEN AT SITE(S) SPECIFIED IN PERMIT. Y N NA

2. LOCATIONS ADEQUATE FOR REPRESENTATIVE SAMPLES. **Sampling procedures compensate for comingled locations.** Y N NA

3. FLOW PROPORTIONED SAMPLES OBTAINED WHEN REQUIRED BY PERMIT. Y N NA

4. SAMPLING AND ANALYSES COMPLETED ON PARAMETERS SPECIFIED IN PERMIT. Y N NA

5. SAMPLING AND ANALYSES PERFORMED AT FREQUENCY SPECIFIED IN PERMIT. **June 2009 DMR (outfall 051)** Y N NA

6. SAMPLE COLLECTION PROCEDURES ADEQUATE Y N NA

a) SAMPLES REFRIGERATED DURING COMPOSITING. Y N NA

b) PROPER PRESERVATION TECHNIQUES USED. Y N NA

c) CONTAINERS AND SAMPLE HOLDING TIMES CONFORM TO 40 CFR 136.3. **See discussion for PCBs** Y N NA

7. IF MONITORING AND ANALYSES ARE PERFORMED MORE OFTEN THAN REQUIRED BY PERMIT, ARE THE RESULTS REPORTED IN PERMITTEE'S SELF-MONITORING REPORT? Y N NA

SECTION E - FLOW MEASUREMENT

PERMITTEE FLOW MEASUREMENT MEETS PERMIT REQUIREMENTS. S M U NA (FURTHER EXPLANATION ATTACHED Yes)
 DETAILS: **Except at outfalls 001, 051 and 13S, flow measurements are "estimates" not subject to accuracy provisions.**

1. PRIMARY FLOW MEASUREMENT DEVICE PROPERLY INSTALLED AND MAINTAINED. Y N NA
 TYPE OF DEVICE **Outfall 001 9" Parshall flume**

2. FLOW MEASURED AT EACH OUTFALL AS REQUIRED. Y N NA

3. SECONDARY INSTRUMENTS (TOTALIZERS, RECORDERS, ETC.) PROPERLY OPERATED AND MAINTAINED. Y N NA

4. CALIBRATION FREQUENCY ADEQUATE. Y N NA
 RECORDS MAINTAINED OF CALIBRATION PROCEDURES. Y N NA
 CALIBRATION CHECKS DONE TO ASSURE CONTINUED COMPLIANCE. **Detailed verification check done every 6 mo to 1 yr** Y N NA

5. FLOW ENTERING DEVICE WELL DISTRIBUTED ACROSS THE CHANNEL AND FREE OF TURBULENCE. Y N NA

6. HEAD MEASURED AT PROPER LOCATION. Y N NA

7. FLOW MEASUREMENT EQUIPMENT ADEQUATE TO HANDLE EXPECTED RANGE OF FLOW RATES. Y N NA

SECTION F - LABORATORY

PERMITTEE LABORATORY PROCEDURES MEET PERMIT REQUIREMENTS. S M U NA (FURTHER EXPLANATION ATTACHED Yes)
 DETAILS: **Permittee conducts pH and TRC. Contract laboratories were not evaluated.**

1. EPA APPROVED ANALYTICAL PROCEDURES USED (40 CFR 136.3 FOR LIQUIDS, 503.5(b) FOR SLUDGES). **See discussion for total Cyanide** Y N NA

SECTION F - LABORATORY (CONT'D)

- 2. IF ALTERNATIVE ANALYTICAL PROCEDURES ARE USED, PROPER APPROVAL HAS BEEN OBTAINED Y N NA
- 3. SATISFACTORY CALIBRATION AND MAINTENANCE OF INSTRUMENTS AND EQUIPMENT. S M U NA
- 4. QUALITY CONTROL PROCEDURES ADEQUATE. S M U NA
- 5. DUPLICATE SAMPLES ARE ANALYZED. ____% OF THE TIME Y N NA
- 6. SPIKED SAMPLES ARE ANALYZED. ____% OF THE TIME. Y N NA
- 7. COMMERCIAL LABORATORY USED. Y N NA

LAB NAME/LAB ADDRESS/PARAMETERS PERFORMED

-Eberline Services Laboratory, formerly KSL/1900 Diamond Drive, Room 203, Los Alamos, NM 87544/pH, TRC, e.Coli, BOD5, TSS
 -General Engineering Laboratories LLC (GEL)/2040 Savage Road, Charleston, SC 29407/metals, TSS, COD, TTO
 -Vista Analytical Laboratory, formerly Alta Analytical, 5070 Robert J. Mathews Parkway, El Dorado Hills, CA 95762/Total PCBs congeners
 -Southwest Research Institute/PO Drawer 28510, San Antonio, TX 78228-0510/Selenium
 -Pacific EcoRisk Laboratories/2250 Cordellia Road, Fairfield, CA 94534/WET

SECTION G - EFFLUENT/RECEIVING WATERS OBSERVATIONS. S M U NA (FURTHER EXPLANATION ATTACHED **Yes**.)

OUTFALL NO.	OIL SHEEN	GREASE	TURBIDITY	VISIBLE FOAM	FLOAT SOL.	COLOR	OTHER

RECEIVING WATER OBSERVATIONS. **See further explanations for permit limit exceedances and observations on visible foam.**

SECTION H - SLUDGE DISPOSAL

SLUDGE DISPOSAL MEETS PERMIT REQUIREMENTS. S M U NA (FURTHER EXPLANATION ATTACHED **No**.)

DETAILS:

- 1. SLUDGE MANAGEMENT ADEQUATE TO MAINTAIN EFFLUENT QUALITY. S M U NA
- 2. SLUDGE RECORDS MAINTAINED AS REQUIRED BY 40 CFR 503. S M U NA
- 3. FOR LAND APPLIED SLUDGE, TYPE OF LAND APPLIED TO: _____ (e.g., FOREST, AGRICULTURAL, PUBLIC CONTACT SITE)

SECTION I - SAMPLING INSPECTION PROCEDURES (FURTHER EXPLANATION ATTACHED **No**.)

- 1. SAMPLES OBTAINED THIS INSPECTION. Y N NA
- 2. TYPE OF SAMPLE OBTAINED
 GRAB _____ COMPOSITE SAMPLE _____ METHOD _____ FREQUENCY _____
- 3. SAMPLES PRESERVED. Y N NA
- 4. FLOW PROPORTIONED SAMPLES OBTAINED. Y N NA
- 5. SAMPLE OBTAINED FROM FACILITY'S SAMPLING DEVICE. Y N NA
- 6. SAMPLE REPRESENTATIVE OF VOLUME AND MATURE OF DISCHARGE. Y N NA
- 7. SAMPLE SPLIT WITH PERMITTEE. Y N NA
- 8. CHAIN-OF-CUSTODY PROCEDURES EMPLOYED. Y N NA
- 9. SAMPLES COLLECTED IN ACCORDANCE WITH PERMIT. Y N NA

**Los Alamos National Laboratory
NPDES Permit No NM0028355
Compliance Evaluation Inspection (All Outfalls Except 13S)
July 13 to 15, 2009**

FURTHER EXPLANATIONS

Introduction

On July 13 to 15, 2009, a Compliance Evaluation Inspection (CEI) was conducted at the U.S. Department of Energy/Los Alamos National Laboratory (DOE/LANL), jointly operated by Los Alamos National Security, LLC (LANS) and the U.S. Department of Energy/National Nuclear Security Administration/Los Alamos Site Office (DOE) by Erin Trujillo and Sandra Gabaldón, both of the New Mexico Environment Department (NMED), Surface Water Quality Bureau (SWQB).

LANL is classified as a major discharger under the federal Clean Water Act, Section 402 National Pollutant Discharge Elimination System (NPDES) permit program and is assigned permit #NM0028355. The permit authorizes the discharge from 15 outfalls. This permit allows discharges to several tributaries, 20.6.4.126 and 20.6.4.128 NMAC, thence to the Rio Grande of the Rio Grande Basin.

The NMED performs a certain number of CEI's for the U.S. Environmental Protection Agency (USEPA) each year. The purpose of this inspection is to provide USEPA with information to evaluate the permittees' compliance with the NPDES permit. This report is based on review of files maintained by the permittee and NMED, on-site observation by NMED personnel, and verbal information provided by the permittees' representatives.

An entrance interview was conducted with LANS staff at approximately 0758 hours on July 13, 2009. The inspectors made introductions, presented credentials and discussed the purpose of the inspection. A tour of outfalls and associated treatment facilities took place with the Permittee's on-site representatives each day from July 13 to July 15, 2009. An exit interview to discuss the preliminary findings of this inspection was conducted from approximately 1600 to 1727 hours on July 15, 2009 with LANS and DOE staff at the site.

Table 1 provides a summary of the permitted outfalls. This part of the report covers the following 14 of the 15 permitted outfalls, some of which discharge only periodically: 001, 051, 02A129, 03A021, 03A022, 03A027, 03A048, 03A113, 03A130, 03A160, 03A181, 03A185, 03A199 and 05A055. Outfall 13S at the Sanitary Wastewater System (SWWS) TA-46 was evaluated separately and is discussed in the next part of the report. Outfall 03A158 was authorized to discharge cooling tower blowdown and other wastewater in the permit issued on June 8, 2007, but was later removed in a permit modification dated July 17, 2007.

Table 1 NM0028355 Outfall Summary

Outfall	DMR Label	Permit Location	Permit Lat/Long	Receiving Water	Segment in Rio Grande Basin
001	001	TA-3-22	35°52'26"N, 106°19'09"W	a tributary to Sandia Canyon	20.6.4.126
13S	13S	TA-46	35°51'08"N, 106°16'33"W	Sandia Canyon (as specified in Outfall 001 and Category 03A), or to Canada del Buey	20.6.4.126 20.6.4.128
051	051	TA-50	35°51'54"N, 106°17'52"W	Mortandad Canyon	20.6.4.128
02A129	129	TA-21-357	35°52'32"N, 106°16'31"W	Los Alamos Canyon	20.6.4.128
03A021	021	TA-3-29	35°52'14"N, 106°19'11"W	Mortandad Canyon	20.6.5.128
03A022	022	TA-3-2274	35°52'14"N, 106°19'01"W	Mortandad Canyon	20.6.5.128

**Los Alamos National Laboratory
NPDES Permit No NM0028355
Compliance Evaluation Inspection (All Outfalls Except 13S)
July 13 to 15, 2009**

03A027	027	TA-3-285 TA-3-2327	35°52'26"N, 106°19'08"W	Sandia Canyon	20.6.4.126
03A048	048	TA-53-964 TA-53-979	35°52'11"N, 106°15'45"W	Los Alamos Canyon	20.6.4.128
03A113	113	TA-53-293 TA-53-294 TA-53-952 TA-53-1032 TA-53-1038	35°52'03"N, 106°15'43"W	Sandia Canyon	20.6.4.128
03A130	130	TA-11-30	35°50'19"N, 106°19'33"W	Water Canyon	20.6.4.128
03A160	160	TA-35-124	35°51'47"N, 106°17'49"W	Ten Site Canyon	20.6.4.128
03A181	181	TA-55-6	35°51'50.8"N, 106°18'05"W	Mortandad Canyon	20.6.5.128
03A185	185	TA-15-625 TA-15-626	35°50'00"N, 106°18'40"W	Water Canyon	20.6.4.128
03A199	199	TA-3-1837	35°52'33"N, 106°19'19"W	Sandia Canyon	20.6.4.126
05A055	055	TA-16-1508	35°50'49"N, 106°19'51"W	a tributary to Canon de Valle	20.6.4.128
DMR = Discharge Monitoring Report					

Treatment Scheme

Outfall 001, TA-3, Power Plant

Outfall 001 is authorized to discharge power plant waste water from cooling towers, boiler blowdown drains, demineralizer backwash, reverse osmosis (RO) reject, floor and sink drains, and treated sanitary re-use to Sandia Canyon. TA-3-22 is a natural gas (diesel fuel back-up) fired steam electric generating station that can provide steam and back-up electricity to various LANL technical areas. Make-up water for the cooling towers can be from either municipal water supply and/or sanitary effluent from the SWWS. Effluent from the SWWS is directed to the SWWS Recycle Tank (296K gallons) located adjacent to the power plant. Recycle tank overflow discharges to manhole "A" and is de-chlorinated with NALCO® 7408, a sodium sulfite based oxygen scavenger. Discharge from manhole "A" continues to manhole "B," where tank overflow is combined with the above wastewater flows and discharged to outfall 001. Make-up water for the boilers is from municipal water supply. Municipal water is treated with a water softener, an RO unit, and demineralizers before use in the boilers. Boiler blowdown is first sent to a dedicated flash tank, then to collection and blow down tanks where carbon dioxide is used to adjust pH, then to the primary environmental tank prior to discharge via manhole 'B' to outfall 001. The oil water separator shown on flow diagrams for the facility is not used. In the event that secondary containment of oil tanks for equipment in the power plant basement fail, the plant's spill response procedures would be used to prevent or minimize oil from entering drains that lead to the primary environmental tank. Laboratory wastewater is disposed in a sink in the plant's basement, called a "trough" by on-site representatives, which discharges to the primary environmental tank. All other sinks at the power plant are reported to discharge to the sanitary sewer to the SWWS. Reject water from the water softener is sent to the SWWS plant while reject water from the RO unit and de-mineralizers is sent to either the primary or secondary environmental tanks where pH, conductivity and TSS are checked prior to discharge via manhole "B" to outfall 001. Primary flow measurement is conducted using a 9-inch Parshall flume and secondary instrument to measure head and totalized which is monitored by power plant operators using a supervisory control and data acquisition system. The Permittee does a thorough verification check of the secondary measurement device and

Los Alamos National Laboratory
NPDES Permit No NM0028355
Compliance Evaluation Inspection (All Outfalls Except 13S)
July 13 to 15, 2009

primary device head gage using a calibrated block for three flows (0%, 50% and full range) through the flume every 6 months to a year. Comparison of the primary and secondary devices are within 5% to pass the verification check.

Outfall 051, TA-50, Radioactive Liquid Waste Treatment Facility (RLWTF)

Outfall 051 is authorized to discharge treated radioactive liquid waste. The TA-50 Radioactive Liquid Waste Treatment Facility (RLWTF) treats both low-level radioactive liquid waste (RLW) and transuranic (TRU) waste. These wastes are treated in separate processes and only the low-level RLW process was reviewed on the date of this inspection. TRU processing is expected back online with discharge of low-level RLW wastewater to outfall 051 in the fall of 2009.

The RLWTF receives the majority of industrial liquid waste via gravity flow through a double-walled Radioactive Liquid Waste Collection System (RLWCS). Approximately 1,600 generating points discharge to TA-50 via this collection system. In addition, some waste is trucked to the facility. A Waste Acceptance Criteria (WAC) and Waste Profile Form (WPF) filled out by the generator are reviewed and if the waste meets the WAC, the generator receives approval from TA-50 staff to ship the waste to TA-50. The WPF is re-submitted and re-approved at least annually, and anytime the characteristics of the waste change.

Wastewater entering the facility is initially held in a 75K gallon influent tank and, if necessary, an additional 17K gallon tank to control the flow rate through the treatment system. From the holding tank, influent is directed to one of two clarifiers (alternated, one in standby). Internal recycle streams such as the daily purge of ultrafilter feed tanks, decant and filtrate from sludge treatment, and membrane cleaning solutions are also directed to the clarifier. Clarifier treatment consists of chemical addition to precipitate impurities, settling to remove most of these impurities, and gravity filtration of overflow waters through a mixed bed of sand and anthracite to remove additional solids. The RLWTF plans to change calcium chemical feeding for the clarifiers to magnesium liquid feeding, which is not anticipated to significantly change the effluent. The flow is then passed through a tubular ultrafilter (TUF) that removes most of the remaining solids. Filtrate from the TUF is then directed to ion-exchange columns for removal of perchlorate. Flow from the ion-exchange unit is directed to an RO unit for final treatment. The RO unit removes remaining suspended solids and almost all of the dissolved solids. RO permeate that meets NPDES permit limits goes to two FRAC tanks, and is then discharged to outfall 051. Reject from the RO process is conveyed to one of the two clarifiers. Following chemical precipitation and gravity clarification, effluent from the clarifier is discharged to an evaporator. The evaporator distillate is routed back to the influent tanks while the solids are shipped offsite (Bear Creek, Tennessee) for drying. Dried solids are shipped back to TA-54 at LANL for storage and eventual disposal.

Sludge from the clarifiers is wasted into an 8K gallon holding tank where it is allowed to settle, then is pumped to a rotary vacuum filter (RVF), the standby clarifier contains the wasted sludge. The RVF is designed to concentrate the clarifier sludge. At the RVF, sludge collects on the filter surface. This sludge is removed and placed into 55-gallon drums, then transported to TA-54 for storage and disposal. Concentrating the clarifier sludge and disposal is anticipated to start back up in the fall of 2009. Liquids extracted from the RVF are decanted back into the influent tanks.

Outfall 02A129, TA-21-357, Steam Plant

Outfall 02A129 (129) is authorized to discharge boiler blowdown, water softener waste water, and once through cooling tower. The TA-21 steam plant facility is being dismantled. The outfall no longer discharges.

Los Alamos National Laboratory
NPDES Permit No NM0028355
Compliance Evaluation Inspection (All Outfalls Except 13S)
July 13 to 15, 2009

The permittee's on-site representatives stated that there has been no change, plugging or capping of the outfall since the last inspection. The outfall was not inspected.

Outfalls 03A048, TA-53, Los Alamos Neutron Science Center (LANSCE) Cooling Towers

Outfall 03A048 (048) is authorized to discharge cooling tower blowdown and other wastewater. These discharges are cooling tower blowdown from two sets of cooling towers at TA-53 Los Alamos Neutron Science Center (LANSCE). Bromicide for microbiological control is added to the cooling waters. Blowdown from cooling towers TA-53-963 and TA-53-979 is de-chlorinated using sodium/potassium sulfite prior to discharge.

Outfall 03A021, TA-3-29, Chemistry & Metallurgy Research (CMR) Cooling Air Washers

Outfall 03A021 (021) is authorized to discharge cooling tower blowdown and other wastewater. This discharge is combined blowdown from cooling air washer systems at TA-3-29 Chemistry & Metallurgy Research (CMR) facility. The air washers were configured in a closed loop manner such that valves for the blow down mechanisms prevent discharge to outfall 021. CW-7618 poly(maleic) acid, a corrosion and scale inhibitor, and microbiocide for open cooling water systems is added to the cooling waters of the washers. If the systems' valve configurations to outfall 021 are changed, blowdown would be de-chlorinated prior to discharge. Discharges from CMR cooling washers are comingled with stormwater from roof drains at TA-3-29 CMR and landscape irrigation at outfall 021.

Outfall 03A022, TA-3-127, Sigma Cooling Towers and Emergency Cooling System

Outfall 03A022 (022) is authorized to discharge cooling tower blowdown and other wastewater. This discharge is cooling tower blowdown from the Sigma Cooling Tower at TA-3-127 and once through cooling water from an emergency cooling system. Blowdown from the cooling towers is de-chlorinated using Formula 159, an oxygen scavenger of potassium/sodium/bisulfite, prior to discharge. There was no system for de-chlorination of the once through emergency cooling system. A design for a de-chlorination system is to be installed by the end of September 2009.

Outfall 03A027, TA-3-2327, Strategic Computing Complex (SCC) Cooling Towers

Outfall 03A027 (027) is authorized to discharge cooling tower blowdown and other wastewater. This discharge is cooling tower blowdown at TA-3-2327. The Sanitary Effluent Recovery or Reclamation Facility (SERF) and the reuse of sanitary effluent at the SCC Cooling Towers was not on-line during this inspection. Blowdown from cooling towers is de-chlorinated prior to discharge.

Outfall 03A113, TA-53, LANSCE Low Energy Demonstration Accelerator (LEDA) Cooling Towers

Outfall 03A113 (113) is authorized to discharge cooling tower blowdown and other wastewater. This discharge is cooling tower blowdown from two sets of cooling towers at TA-53 Low Energy Demonstration Accelerator (LEDA). On the day of the inspection, the towers associated with TA-53-952 were not operating due to a filter leak and repair. The discharge from cooling towers TA-53-293 and TA-53-952 blowdown is de-chlorinated using West R-630, a sodium and potassium sulfite, prior to discharge. Discharge from the cooling towers at the LANSCE LEDA is co-mingled with stormwater prior to discharge at outfall 113.

Los Alamos National Laboratory
NPDES Permit No NM0028355
Compliance Evaluation Inspection (All Outfalls Except 13S)
July 13 to 15, 2009

Outfall 03A130, TA-11-30 Testing Facility Cooling Tower

Outfall 03A130 (130) is authorized to discharge cooling tower blowdown and other wastewater. This discharge is from periodic cooling tower blowdown at TA-11-30. Formula 2011, a corrosion inhibitor to protect steel and copper metal from oxygen corrosion is added to the cooling water. Blowdown is de-chlorinated with an oxygen scavenger of potassium/sodium/bisulfite prior to discharge.

Outfall 03A160, TA-35-124, National High Magnetic Field Lab Cooling Towers

Outfall 03A160 (160) is authorized to discharge cooling tower blowdown and other wastewater. This discharge is blowdown from a rooftop cooling tower (for cooling electrical switch equipment) at TA-35-124 National High Magnetic Field Lab. No biocide is used and the discharge is not de-chlorinated. Discharge of blowdown enters a storm water drainage pipe to Ten Site Canyon, which is tributary to Mortandad Canyon. The receiving water was not inspected.

Outfall 03A181, TA-55, Plutonium Facility, Cooling Towers

Outfall 03A181 (181) is authorized to discharge cooling tower blowdown and other wastewater. This discharge is blowdown from three cooling towers at TA-55-6. NALCO® 7408 sodium bisulfate, also noted as a sodium sulfite in literature, and STA•BR•EX® ST20 (anti-scaler), a liquid bromine-based antimicrobial, is added to cooling water. Blowdown is de-chlorinated prior to discharge. Discharge from cooling towers are co-mingled with storm water, including roof drain sources and paved surfaces from approximately one-fourth of the Plutonium Facility at outfall 181. Monitoring samples are obtained outside the security fence at the Plutonium Facility.

Outfall 03A185, TA-15, Dual Axis Radiographic Hydrodynamic Test (DARHT) Cooling Towers

Outfall 03A185 (185) is authorized to discharge cooling tower blowdown and other wastewater. This discharge is from cooling tower blowdown at the Dual-Axis Radiographic Hydrodynamic Test (DARHT) facility at TA-15-626. Formula 2011, a corrosion inhibitor to protect steel and copper metal from oxygen corrosion, is added to the cooling tower waters. Blowdown is de-chlorinated using Formula 159 prior to discharge.

Outfall 03A199, TA-3, Laboratory Data Communications Center (LDCC) Cooling Tower

Outfall 03A199 (199) is authorized to discharge cooling tower blowdown and other wastewater. This discharge is blowdown from two cooling towers at TA-3-1498. Formula 2011 is added to the cooling tower waters. Blow down is de-chlorinated using Formula 159 prior to discharge. LDCC is adding a cooling tower to the existing four that may increase the discharge flow.

Outfall 05A055, TA-16-1508, High Explosives Waste Water Treatment Facility (HEWTF)

Outfall 05A055 (055) is authorized to discharge treated waste water from the high explosives waste water treatment facility. TA-16-1508 treats wastewater from high explosives (HE) research and development, decontamination and decommissioning activities, and various other activities. The facility has a Waste Acceptance Criteria (WAC) and waste is characterized by the generator and documented on a Waste Profile Form (WPF) filled out by the generator for approval before being sent to the facility. An HEWTF operator picks up HE wastewater from LANL generators in 55-gallon drums or by dedicated vacuum truck. All wastewater is received at two small sand filter tanks that discharge into an approximately 500 gallon transfer

Los Alamos National Laboratory
NPDES Permit No NM0028355
Compliance Evaluation Inspection (All Outfalls Except 13S)
July 13 to 15, 2009

sump. Wastewater is pumped from the sump to an approximately 3000-gallon equalization holding tank to provide uniform flow through the plant. Wastewater passes through coalescing particulate filters then a series of two (four total used alternatively) activated carbon filters. Following the carbon filters, wastewater is conveyed through an ion-exchange system to remove ammonium, perchlorate and barium then is directed into two post-treatment holding tanks. From the post-treatment tanks, treated waste is routed to a mechanical evaporator system that evaporates all, approximately 200 gallons per day, of the liquid waste. Occasionally, operational samples of the treated wastewater are collected to determine if quality meets effluent limits should it be required to batch discharge wastewater from the ion-exchange tanks.

Section B - Recordkeeping and Reporting Evaluation – Overall Rating of “Marginal”

Permit Requirements for Recordkeeping and Reporting Evaluation

Part III.C.4 (Standard Conditions, Record Contents) of the permit states:

Records of monitoring information shall include:

- a. The date, exact place, and time of sampling or measurements;*
- b. The individual(s) who performed the sampling or measurements;*
- c. The date(s) and time(s) analyses were performed;*
- d. The individual(s) who performed the analyses;*
- e. The analytical techniques or methods used; and*
- f. The results of such analyses.*

Findings for Recordkeeping and Reporting

The Permittee's records of monitoring information did not include the analytical techniques or methods used for pH and TRC, times of sampling or analyses; and name of individual who performed the sampling and analyses. The Permittee did not provide documentation that the RLWTF recordkeeping for outfall 051 for pH and TRC was adequate. Copies from the Permittee's RLWTF bench sheet book for outfall 051 from December 2008 to June 15, 2009 did not include the analytical methods and techniques, the time and name of the individual performing sampling, and the time and name of the individual performing the analysis. Both the sampling and analysis times are important to verify that samples are analyzed within the maximum holding times approved in 40 CFR 136.3. The Permittee's completed Water Quality Database Reports/Field Parameter Sheets did not include the analytical methods and techniques for pH and TRC. The sheets did not provide or refer to additional information on the date, time and individual performing sampling from field notebooks.

Section C - Operations and Maintenance – Overall Rating of “Marginal”

Permit Requirements for Operations and Maintenance

Part III.B.3 (Standard Conditions, Proper Operation and Maintenance) of the permit requires:

- a. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by permittee as efficiently as possible and in a manner which will minimize upsets and discharges of excessive pollutants and will achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of this permit. b. The permittee shall provide an adequate*

Los Alamos National Laboratory
NPDES Permit No NM0028355
Compliance Evaluation Inspection (All Outfalls Except 13S)
July 13 to 15, 2009

operating staff which is duly qualified to carry out operation, maintenance and testing functions required to insure compliance with the conditions of this permit.

Findings for Operation and Maintenance

The Permittee did not properly operate treatment systems according to established procedures or following treatment system maintenance causing effluent permit limits to be exceeded as further discussed in Section G. Following the exceedances at the Power Plant (outfall 001), NHMFL (outfall 160), RLWTF (outfall 051), SCC (outfall 027) and LANSCE (outfall 048), procedures were reviewed and updated, additional staff training was conducted, operational checks increased, and/or equipment was re-calibrated. However, the Permittee has not updated procedures at the RLWTF for a pH meter calibration program identified as a result of the effluent permit exceedance at outfall 051 to ensure future compliance with permit conditions.

The Permittee has not installed necessary treatment works for de-chlorination treatment for the Sigma Emergency Cooling System prior to discharge to outfall 022. The Permittee also did not provide documentation of procedures to ensure that representative sampling would be conducted in the event that the Sigma Emergency Cooling System discharges to outfall 001.

At the TA-55 Plutonium Facility (outfall 181), draft Cooling Tower Operation Procedures have not been finalized and there was no documented on-the-job or other training program for staff responsible for blowdown or treatment system maintenance.

At the RLWTF (outfall 051), there are currently only three operators for the treatment works. Some treatment works are temporarily shut down/delayed while operators perform other tasks. The number of qualified staff at the RLWTF will be even more important when TRU processing is online to ensure treatment systems are properly operated.

At the Power Plant (outfall 001), an approximate 5-gallon container of defoamer was located in the chemical storage building of the power plant. The plant maintains an MSDS for the Formula 60 cooling tower antifoam product, but specifics on the contents or written procedures on the quantity and rate of application was not provided. The defoamer needs to be properly characterized and written application procedures developed to ensure compliance with permit requirements; or if not needed, then the defoamer should be properly disposed.

At the TA-11-30 Cooling Towers (outfall 130), the container for Formula 159 was also marked as Formula 1265. The contents of the container need to be confirmed and labeling corrected to ensure compliance with permit requirements.

Section D - Self-Monitoring and Section F – Laboratory – Overall Ratings of “Marginal”

Permit Requirements for Self-Monitoring and Laboratory

Part I.A of the permit provides requirements, limitations and monitoring requirements for each outfall.

Part I.A for outfall 001 includes a footnote for outfall 001 that states, “EPA published Method 1668 Revision A shall be used for total PCBs analysis.”

Los Alamos National Laboratory
NPDES Permit No NM0028355
Compliance Evaluation Inspection (All Outfalls Except 13S)
July 13 to 15, 2009

Part II.D (Cyanide Effluent Test Procedures) of the permit states:

To comply with the sampling and analysis requirements for total cyanide and cyanide amenable to chlorination, the permittee shall use an approved test procedure at 40CFR136. If the analysis of cyanide amenable to chlorination is subject to matrix interferences, the weak acid dissociable cyanide method (Method 4500 CN I - Standard Methods, latest edition approved in 40CFR136) may be substituted for this parameter. The permittee may use ion chromatographic separation - amperometric detection (IC method) as a substitute for the colorimetric detection steps in any of the above cyanide methods. No other modifications of the above methods are authorized by this provision unless such modifications are approved in writing by the permitting authority.

Part III.C.2 (Standard Conditions, Representative Sampling) of the permit states:

Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

Part III.C.5 (Standard Conditions, Monitoring Procedures) of the permit states:

a. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit or approved by the Regional Administrator. b. The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instruments at intervals frequent enough to insure accuracy of measurements and shall maintain appropriate records of such activities. c. An adequate analytical quality control program, including the analyses of sufficient standards, spikes, and duplicate samples to insure the accuracy of all required analytical results shall be maintained by the permittee or designated commercial laboratory. c. An adequate analytical quality control program, including the analyses of sufficient standards, spikes and duplicate samples to insure the accuracy of all required analytical results shall be maintained by the permittee or designated commercial laboratory.

Findings for Self-Monitoring and Laboratory

The Permittee did not monitor at a frequency specified in permit on one occasion. Sampling and analyses for COD, TSS, Cu, Zn, and TTO at outfall 051 in June of 2009 was not performed once per month as required by the permit.

The Permittee did not provide documentation that proper containers were used for PCB monitoring. Amber glass sample containers are required for PCB monitoring in accordance with EPA Method 1668A (see Section 8.0 Sample Collection, Preservation, Storage, and Holding Times). Vista Analytical Laboratory sample log checklist and LANL Request for Analytical Services dated July 24, 2008, for a sample collected from outfall 001 for total PCBs state that "1.0 L glass" as the container description. The color of glass is not specified.

The Permittee did not provide documentation that pH analysis for outfall 051 is conducted according to approved methods in 40 CFR 136.3. The Permittee only used two buffers for the pH calibration checks prior to June 9, 2009, but approved Standard Methods in 40 CFR 136.3 require three.

The Permittee did not use an approved test procedure at 40 CFR 136 for total Cyanide monitoring of outfalls 130 and 185 as required by the permit. The permittee used EPA Method 335.3 (Colorimetric, Automated UV) for total Cyanide which is not approved in 40 CFR 136.3 or Part II.D of the Permit.

Los Alamos National Laboratory
NPDES Permit No NM0028355
Compliance Evaluation Inspection (All Outfalls Except 13S)
July 13 to 15, 2009

Chain of Custody (COC) documentation was not sent with samples to contract laboratories on one occasion. COC forms to GEL Laboratories LLC for samples from outfall 001 and 0160 sampled on July 9, 2008, outfall 051 sampled on July 8, 2008, and outfall 185 sampled July 10, 2008, all received at the laboratory on July 11, 2008 were not sent with the samples. The COC were received the following day on July 12, 2009. Chain-of-Custody procedures are used to protect samples from tampering and to document such protection. The Permittee needs to review established quality assurance and control procedures to avoid this omission in the future.

The frequency of analytical data that is qualified due to blank contamination, spike recovery and replicate precision indicates that quality control procedures are not adequate or maintenance of instruments and equipment is unsatisfactory. For example, Analytical Quality Associates, Inc. (AQA) review and validation report dated August 4, 2008 for monitoring of Copper from outfall 048 states, "*The result for CU should be qualified 3.3U, 14a due to blank contamination.*" Analytical data for SVOCs monitoring of outfall 051 on the July 2008 DMR is qualified as having low matrix spike recover and poor replicate precision. Poor replicate precision is also noted for AQA total cyanide results of outfall 185 reported on the July 2008 DMR. The Permittee needs to follow up with the contracted commercial laboratory to ensure that quality assurance and control procedures, including any necessary corrective actions, are taken to ensure compliance with permit conditions.

Sampling locations at outfalls 021, 113, are 181 would not be representative of the monitored activity during or immediately following a rain event. Loose roof material aggregate observed in the open stormwater drains leading to outfall 181 could also affect obtaining a representative sample of discharges of cooling towers at the Plutonium Facility. The Permittee's sampling procedures reduce or minimize stormwater influences. However, removing potential sources of pollutants in storm drains that lead into co-mingled outfalls is needed to ensure representative sampling and measurements. The Permittee's future construction plans at the Plutonium Facility need to provide for the collection of an end of the pipe sample and if possible elimination of co-mingled discharges at outfall 181.

Section E - Flow Measurement – Overall Rating of “Marginal”

Permit Requirements for Flow Measurement

Part III, Section C.6 of the permit states:

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to insure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than 10% from true discharge rates throughout the range of expected discharge volumes.

Findings for Flow Measurement

The Permittee's flow measurement calibration of the flow measurement system was not adequate at outfall 001. According to EPA's NPDES Inspection Manual, Chapter 6, "The facility must ensure that their flow measurement systems are calibrated by a qualified source at least once a year to ensure their accuracy." Yearly calibration documentation that the primary flume still meets all specifications and installation requirements, the basic accuracy of the primary is satisfactory, and that the totalizer is accurately recording flow was not provided by the Permittee.

**Los Alamos National Laboratory
NPDES Permit No NM0028355
Compliance Evaluation Inspection (All Outfalls Except 13S)
July 13 to 15, 2009**

Section G - Effluent/Receiving Waters Observations – Overall Rating of “Marginal”

Permit Requirements for Effluent/Receiving Waters

For each outfall, Part I, Section A (Floating Solids, Oil and Grease) of the permit states:

There shall be no discharge of oils, scum, grease and other floating materials that would cause the formation of a visible sheen or visible deposits on the bottom or shoreline, or would damage or impair the normal growth, function or reproduction of human, animal, plant or aquatic life.

Findings for Effluent/Receiving Waters

Table 2 summarizes effluent/receiving water observations on the day of the inspection.

Table 2 Effluent/Receiving Waters Observations

Outfall No.	Oil Sheen	Grease	Turbidity	Visible Foam	Float Solids	Color	Other
001	No	No	No	No	No	No	See below
051	No	No	No	No	No	No	See below
02A129	--	--	--	--	--	--	Not inspected
03A021	No	No	No	No	No	No	See below
03A022	No	No	No	No	No	No	See below
03A027	No	No	No	No	No	No	See below
03A048	No	No	No	No	No	No	High or peak flow
03A113	No	No	No	No	No	No	TA-53-293
03A130	No	No	No	No	No	No	Low flow/drip
03A185	--	--	--	--	--	--	No discharge
03A160	--	--	--	--	--	--	No discharge
03A181	No	No	No	No	No	No	
03A199	No	No	No	Yes	No	No	See below
05A055	--	--	--	--	--	--	No discharge

Note: A low volume discharge from outfall 021 was observed approximately 2 days after a reported rain event, but there was discharge from the monitored activity.

A small amount of visible white foam had collected in small pools of the tributary downstream of outfalls 001 (power plant) and 027 (SCC), and downstream of outfall 022 (Sigma). There was also visible white foam in the effluent immediately below outfall 199 and collected in a pool of the tributary downstream of outfall 199. Light tan foam had also collected at the edge of the receiving water/tributary downstream of outfall 051. It was not determined if the collected foam was man-made or naturally occurring. The Permittee needs to continue to monitor the effluent, tributaries and receiving waters for foam. Further investigation or action may be needed to eliminate possible man-made sources if foam is observed to be white in color, fragrant with chemicals, perfume or soapy, or persists for a longer period of time than observed during this inspection to ensure compliance with permit conditions.

Los Alamos National Laboratory
NPDES Permit No NM0028355
Compliance Evaluation Inspection (All Outfalls Except 13S)
July 13 to 15, 2009

The Permittee exceeded the following permit effluent limitations six times since the last inspection (DMRs reviewed through June 2009) to the following receiving waters:

- Mortandand Canyon (pH at outfall 051 on February 4, 2009);
- Los Alamos Canyon (TRC at outfall 048 on September 30, 2008);
- Sandia Canyon (TRC at outfall 001 on December 10, 2008, TRC at outfall 03A027 on May 20, 2009; and pH at outfall 199 on February 4, 2009); and
- Ten Site Canyon (TSS at outfall 160 on March 31, 2009).



Form Approved
OMB No. 2040-0003
Approval Expires 7-31-85

NPDES Compliance Inspection Report

Section A: National Data System Coding

Transaction Code			NPDES										yr/mo/day			Inspec. Type		Inspector		Fac Type									
1	N	2	5	3	N	M	0	0	2	8	3	5	5	11	12	0	9	0	7	1	3	17	18	C	19	S	20	4	
Remarks																													
N A T I O N A L R E S E A R C H I N S T I T U T E M A J O R																													
Inspection Work Days				Facility Evaluation Rating				BI		QA		Reserved																	
67	0	0	1	69	70	4	71	N	72	N	73		74	75															80

Section B: Facility Data

Name and Location of Facility Inspected (For industrial users discharging to POTW, also include POTW name and NPDES permit number) Department of Energy/Los Alamos National Security, LLC TA-46, SWWS Plant PO Box 1663, MSK497 Los Alamos, NM 87545	Entry Time /Date	Permit Effective Date
	0800 hours / 07-13-2009	August 1, 2007
	Exit Time/Date	Permit Expiration Date
	1700 hours / 07-15-2009	July 31, 2012
Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s) Charlie Barnett, Superintendent SWWS TA-46		Other Facility Data Outfall 13S - LOS ALAMOS NATIONAL LABORATORY, LOS ALAMOS COUNTY No GPS coordinates were obtained SIC Code 4952
Name, Address of Responsible Official/Title/Phone and Fax Number Mr. Donald L. Winchell Jr., Manager National Nuclear Security Administration Los Alamos Site Office, MS A316 528 35 th Street Los Alamos, New Mexico 87544		Mr. Chris Cantwell, Associate Director Env., Safety, Health & Quality, MS K491 Los Alamos National Security, LLC P.O. Box 1663 Los Alamos, New Mexico 87545
		Contacted Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Section C: Areas Evaluated During Inspection
(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)

S	Permit	S	Flow Measurement	M	Operations & Maintenance	N	CSO/SSO
S	Records/Reports	S	Self-Monitoring Program	S	Sludge Handling/Disposal	N	Pollution Prevention
S	Facility Site Review	S	Compliance Schedules	N	Pretreatment	N	Multimedia
S	Effluent/Receiving Waters	M	Laboratory	N	Storm Water		Other:

Section D: Summary of Findings/Comments (Attach additional sheets if necessary)

SEE THE ATTACHED FURTHER EXPLANATIONS SECTION

THIS SECTION OF THE REPORT COVERS ONLY STATUS OF OUTFALL 13S. OTHER OUTFALLS WERE EVALUATED SEPARATELY AND FURTHER EXPLANATIONS ARE ATTACHED.

Name(s) and Signature(s) of Inspector(s) Sandra Gabaldón 	Agency/Office/Telephone/Fax NMED/SWQB/505-827-1041/827-0160	Date 8-7-2009
Signature of Management QA Reviewer Richard E. Powell 	Agency/Office/Phone and Fax Numbers NMED/SWQB/827-2798/827-0160	Date 8-7-09

SECTION A - PERMIT VERIFICATION

PERMIT SATISFACTORILY ADDRESSES OBSERVATIONS
DETAILS.

 S M U NA (FURTHER EXPLANATION ATTACHED NO)

1. CORRECT NAME AND MAILING ADDRESS OF PERMITTEE

 Y N NA

2. NOTIFICATION GIVEN TO EPA/STATE OF NEW DIFFERENT OR INCREASED DISCHARGES

 Y N NA

3. NUMBER AND LOCATION OF DISCHARGE POINTS AS DESCRIBED IN PERMIT

 Y N NA

4. ALL DISCHARGES ARE PERMITTED

 Y N NA

SECTION B - RECORDKEEPING AND REPORTING EVALUATION

RECORDS AND REPORTS MAINTAINED AS REQUIRED BY PERMIT.
DETAILS.

 S M U NA (FURTHER EXPLANATION ATTACHED NO)

1. ANALYTICAL RESULTS CONSISTENT WITH DATA REPORTED ON DMRS

 Y N NA

2. SAMPLING AND ANALYSES DATA ADEQUATE AND INCLUDE:

 S M U NA

a) DATES, TIME(S) AND LOCATION(S) OF SAMPLING

 Y N NA

b) NAME OF INDIVIDUAL PERFORMING SAMPLING

 Y N NA

c) ANALYTICAL METHODS AND TECHNIQUES.

 Y N NA

d) RESULTS OF ANALYSES AND CALIBRATIONS.

 Y N NA

e) DATES AND TIMES OF ANALYSES.

 Y N NA

f) NAME OF PERSON(S) PERFORMING ANALYSES.

 Y N NA

3. LABORATORY EQUIPMENT CALIBRATION AND MAINTENANCE RECORDS ADEQUATE

 S M U NA

4. PLANT RECORDS INCLUDE SCHEDULES, DATES OF EQUIPMENT MAINTENANCE AND REPAIR.

 S M U NA

5. EFFLUENT LOADINGS CALCULATED USING DAILY EFFLUENT FLOW AND DAILY ANALYTICAL DATA

 Y N NA

SECTION C - OPERATIONS AND MAINTENANCE

TREATMENT FACILITY PROPERLY OPERATED AND MAINTAINED.
DETAILS.

 S M U NA (FURTHER EXPLANATION ATTACHED YES)

1. TREATMENT UNITS PROPERLY OPERATED.

 S M U NA

2. TREATMENT UNITS PROPERLY MAINTAINED.

 S M U NA

3. STANDBY POWER OR OTHER EQUIVALENT PROVIDED.

 S M U NA

4. ADEQUATE ALARM SYSTEM FOR POWER OR EQUIPMENT FAILURES AVAILABLE.

 S M U NA

5. ALL NEEDED TREATMENT UNITS IN SERVICE

 S M U NA

6. ADEQUATE NUMBER OF QUALIFIED OPERATORS PROVIDED.

 S M U NA

7. SPARE PARTS AND SUPPLIES INVENTORY MAINTAINED.

 S M U NA

8. OPERATION AND MAINTENANCE MANUAL AVAILABLE.

 Y N NA

STANDARD OPERATING PROCEDURES AND SCHEDULES ESTABLISHED.

 Y N NA

PROCEDURES FOR EMERGENCY TREATMENT CONTROL ESTABLISHED.

 Y N NA

SECTION C - OPERATIONS AND MAINTENANCE (CONT'D)

9. HAVE BYPASSES/OVERFLOWS OCCURRED AT THE PLANT OR IN THE COLLECTION SYSTEM IN THE LAST YEAR? Y N NA
 IF SO, HAS THE REGULATORY AGENCY BEEN NOTIFIED? Y N NA
 HAS CORRECTIVE ACTION BEEN TAKEN TO PREVENT ADDITIONAL BYPASSES/OVERFLOWS? Y N NA

10. HAVE ANY HYDRAULIC OVERLOADS OCCURRED AT THE TREATMENT PLANT? Y N NA
 IF SO, DID PERMIT VIOLATIONS OCCUR AS A RESULT? Y N NA

SECTION D - SELF-MONITORING

PERMITEE SELF-MONITORING MEETS PERMIT REQUIREMENTS. S M U NA (FURTHER EXPLANATION ATTACHED YES)
 DETAILS:

1. SAMPLES TAKEN AT SITE(S) SPECIFIED IN PERMIT. Y N NA

2. LOCATIONS ADEQUATE FOR REPRESENTATIVE SAMPLES. Y N NA

3. FLOW PROPORTIONED SAMPLES OBTAINED WHEN REQUIRED BY PERMIT. Y N NA

4. SAMPLING AND ANALYSES COMPLETED ON PARAMETERS SPECIFIED IN PERMIT. Y N NA

5. SAMPLING AND ANALYSES PERFORMED AT FREQUENCY SPECIFIED IN PERMIT. Y N NA

6. SAMPLE COLLECTION PROCEDURES ADEQUATE Y N NA

a) SAMPLES REFRIGERATED DURING COMPOSITING Y N NA

b) PROPER PRESERVATION TECHNIQUES USED. Y N NA

c) CONTAINERS AND SAMPLE HOLDING TIMES CONFORM TO 40 CFR 136.3 Y N NA

7. IF MONITORING AND ANALYSES ARE PERFORMED MORE OFTEN THAN REQUIRED BY PERMIT, ARE THE RESULTS REPORTED IN PERMITEE'S SELF-MONITORING REPORT? Y N NA

SECTION E - FLOW MEASUREMENT

PERMITEE FLOW MEASUREMENT MEETS PERMIT REQUIREMENTS. S M U NA (FURTHER EXPLANATION ATTACHED NO)
 DETAILS:

1. PRIMARY FLOW MEASUREMENT DEVICE PROPERLY INSTALLED AND MAINTAINED. Y N NA
 TYPE OF DEVICE 9-inch Parshall flume

2. FLOW MEASURED AT EACH OUTFALL AS REQUIRED. Y N NA

3. SECONDARY INSTRUMENTS (TOTALIZERS, RECORDERS, ETC.) PROPERLY OPERATED AND MAINTAINED. Totalizer Y N NA

4. CALIBRATION FREQUENCY ADEQUATE. Y N NA
 RECORDS MAINTAINED OF CALIBRATION PROCEDURES. Y N NA
 CALIBRATION CHECKS DONE TO ASSURE CONTINUED COMPLIANCE. Y N NA

5. FLOW ENTERING DEVICE WELL DISTRIBUTED ACROSS THE CHANNEL AND FREE OF TURBULENCE. Y N NA

6. HEAD MEASURED AT PROPER LOCATION Y N NA

7. FLOW MEASUREMENT EQUIPMENT ADEQUATE TO HANDLE EXPECTED RANGE OF FLOW RATES. Y N NA

SECTION F - LABORATORY

PERMITEE LABORATORY PROCEDURES MEET PERMIT REQUIREMENTS. S M U NA (FURTHER EXPLANATION ATTACHED YES)
 DETAILS:

1. EPA APPROVED ANALYTICAL PROCEDURES USED (40 CFR 136.3 FOR LIQUIDS, 503.8(b) FOR SLUDGES) Y N NA

SECTION F - LABORATORY (CONT'D)2. IF ALTERNATIVE ANALYTICAL PROCEDURES ARE USED, PROPER APPROVAL HAS BEEN OBTAINED Y N NA3. SATISFACTORY CALIBRATION AND MAINTENANCE OF INSTRUMENTS AND EQUIPMENT. S M U NA4. QUALITY CONTROL PROCEDURES ADEQUATE. S M U NA5. DUPLICATE SAMPLES ARE ANALYZED. Minimum 10 % OF THE TIME Y N NA6. SPIKED SAMPLES ARE ANALYZED. Minimum 10 % OF THE TIME Y N NA7. COMMERCIAL LABORATORY USED Y N NA

LAB NAME, ADDRESS, PARAMETERS PERFORMED

KSL/EBERLINE SERVICES/HENV LABORATORY, 1900 DIAMOND DRIVE, ROOM 203, LOS ALAMOS, NM 87544, BOD, PH, TRC, E COLI
 GENERAL ENGINEERING LABORATORIES (GEL), POST OFFICE BOX 30712, CHARLESTON, SC 29417, COD, TSS, METALS
 VISTA ANALYTICAL LABORATORY, 1104 WINFIELD WAY, EL DORADO HILLS, CA 95762, PCB CONGENER
 SOUTHWEST RESEARCH INSTITUTE, PO DRAWER 28510, SAN ANTONIO, TX 78228-0510, SELENIUM
 PACIFIC ECORISK, 2250 CORDELIA ROAD, FAIRFIELD, CA 94534 BIOTOXICITY TESTING

SECTION G - EFFLUENT/RECEIVING WATERS OBSERVATIONS. S M U NA (FURTHER EXPLANATION ATTACHED Yes).

OUTFALL NO.	OIL SHEEN	GREASE	TURBIDITY	VISIBLE FOAM	FLOAT SOL.	COLOR	OTHER
135	No	No	No	No	No	Clear	

RECEIVING WATER OBSERVATIONS: This facility does not discharge. Rather, effluent is sent to TA-3 / power plant for re-use.

SECTION H - SLUDGE DISPOSALSLUDGE DISPOSAL MEETS PERMIT REQUIREMENTS. S M U NA (FURTHER EXPLANATION ATTACHED No).
DETAILS:1. SLUDGE MANAGEMENT ADEQUATE TO MAINTAIN EFFLUENT QUALITY S M U NA2. SLUDGE RECORDS MAINTAINED AS REQUIRED BY 40 CFR 503. S M U NA

3. FOR LAND APPLIED SLUDGE, TYPE OF LAND APPLIED TO (e.g., FOREST, AGRICULTURAL, PUBLIC CONTACT SITE)

SECTION I - SAMPLING INSPECTION PROCEDURES (FURTHER EXPLANATION ATTACHED No).1. SAMPLES OBTAINED THIS INSPECTION. Y N NA

2. TYPE OF SAMPLE OBTAINED

GRAB _____ COMPOSITE SAMPLE _____ METHOD _____ FREQUENCY _____

3. SAMPLES PRESERVED. Y N NA4. FLOW PROPORTIONED SAMPLES OBTAINED. Y N NA5. SAMPLE OBTAINED FROM FACILITY'S SAMPLING DEVICE. Y N NA6. SAMPLE REPRESENTATIVE OF VOLUME AND NATURE OF DISCHARGE. Y N NA7. SAMPLE SPLIT WITH PERMITTEE. Y N NA8. CHAIN-OF-CUSTODY PROCEDURES EMPLOYED. Y N NA9. SAMPLES COLLECTED IN ACCORDANCE WITH PERMIT. Y N NA

**Los Alamos National Laboratory
TA-46, SWWS Plant
NPDES Permit No. NM0028355
Compliance Evaluation Inspection
July 13, 2009**

Introduction

A Compliance Evaluation Inspection (CEI) was conducted at the Los Alamos National Laboratory, TA-46 Sanitary Wastewater System (SWWS) Plant on July 13, 2009 by Sandra Gabaldón and Erin Trujillo of the New Mexico Environment Department (NMED), Surface Water Quality Bureau (SWQB), Point Source Regulation Section (PSRS). This facility is classified as a major federal facility under the federal Clean Water Act (CWA), Section 402 National Pollutant Discharge Elimination System (NPDES) permit program, and is assigned NPDES permit number NM0028355. The SWWS facility design flow is 0.4 million gallons per day (MGD).

The SWWS Plant is permitted to discharge into Sandia Canyon or Canada del Buey, thence to the Rio Grande in Segment 20.6.4.128 NMAC (*State of New Mexico Standards for Interstate and Intrastate Surface Waters*) of the Rio Grande Basin. Designated uses include livestock watering, wildlife habitat, limited aquatic life and secondary contact.

The inspectors arrived at TA-59 at 0800 hours and conducted an entrance interview with representatives of Los Alamos National Laboratory. The inspectors made introductions, presented credentials and discussed the purpose of the inspection. An exit interview was scheduled at 4:00 PM on Wednesday, July 15, 2009, to discuss preliminary findings of the inspection. Because TA-46 is part of Los Alamos National Laboratory, we were escorted to TA-46 by Marc Bailey, LANL, Water Quality and Hydrology Group and met at the facility by Charlie Barnett, Superintendent.

NMED performs a specific number of CEI's annually for the United States Environmental Protection Agency (USEPA). The purpose of the TA-46 SWWS Plant inspection is to provide the USEPA with information to evaluate the permittee's compliance with their NPDES permit. The enclosed inspection report is based on verbal information supplied by the permittee's representatives, observations made by the NMED inspectors, and a review of records maintained by the permittee, commercial laboratories and/or NMED. Findings of the inspection are detailed on the attached EPA form 3560-3 and in the narrative Further Explanations section of this report.

Treatment Scheme:

Influent is pumped into the plant headworks and flows through a mechanical bar screen. Wastewater then enters a grit chamber where rags along with inorganic material are removed. Any grit/solids removed from the wastewater are analyzed and then taken to

the Los Alamos County landfill. A splitter box sends the influent into two equalization basins. The equalization basins are used to provide storage during the peak daytime wastewater flow for later treatment at night when little flow is received. Mixers within the basins provide aeration to minimize septic conditions from occurring. Submersible pumps, in response to programmable logic controls (PCL), move the influent into the six aeration basins in a uniform manner.

In the aeration basins, compressed air is provided by centrifugal blowers on a PCL system that cycles on and off in a manner that promotes the nitrification/denitrification processes.

The effluent flows from the aeration basins into one of two 16 ft. circular clarifiers (North & South). Return activated sludge (RAS) is pumped back to the aeration basins to repeat the waste stabilization cycle.

Flow is then routed to a serpentine chlorine contact basin. Chlorination occurs with the use of a MIOX system. Effluent then passes through a Parshall flume with a Millitronics totalizer and is shunted to a lined holding pond where it may be pumped to a holding tank and re-used at TA-3. If a discharge at Outfall 13S is anticipated, effluent is diverted after the chlorine contact basin to a second Parshall flume, dechlorinated with sodium bisulfite, then gravity flows to Canada del Buey. If possible, all effluent discharges to Canada del Buey via 13S are reported to EPA and SWQB in advance. Currently, all effluent is being re-used at TA-3.

Sludge is wasted to sand filtered drying beds. After a suitable drying cycle, sludge below 50 ug/l PCBs is hauled to TA-54 where it is disposed in an appropriate manner.

**Los Alamos National Laboratory
TA-46, SWWS Plant
NPDES Permit No. NM0028355
Compliance Evaluation Inspection
July 13, 2009**

Note: The sections are arranged according to the format of EPA form 3560-3 and checklist, attached, rather than being ranked in order of importance.

Section C – Operations and Maintenance – Overall Rating of “Marginal”

Permit Requirements – for Operations and Maintenance:

The permit requires in Part III, Section B.3:

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by permittee as efficiently as possible and in a manner which will minimize upsets and discharges of excessive pollutants and will achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of this permit.

Findings – for Operation and Maintenance:

It was noted during the site inspection that the facility has a 10-foot effluent holding pond in need of repairs. There are tears in the liner noted in various areas of the pond. The geo-textile liner should be repaired.

The south clarifier, which is currently used as a sludge thickener, was inoperable during the time of this inspection. The parts have been ordered and the clarifier should be back online in the next couple of weeks.

This facility has an operation and maintenance manual which is currently being updated, but not complete. Emergency procedures are also being updated. Written operating procedures along with emergency procedures enable the operators to achieve efficient plant operation and also serve as a training tool for new employees. These documents should be updated as changes occur.

Modifications, dated July 17, 2007, to the permit have previously been made. However, the facility does not have a current permit with all the changes available to the staff. This

was remedied while we were on site with Marc Bailey providing a copy of the modifications to the facility.

Section D – Self-Monitoring, Overall rating of “Satisfactory”

Permit Requirements for Self Monitoring:

Part III, Page 5, Additional Monitoring by the Permittee states:

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR 136 or as specified in this permit, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the Discharge Monitoring Report (DMR). Such increased frequency shall be indicated in the DMR.

Findings for Self-Monitoring:

In July, 2008, the permittee performed two Biochemical Oxygen Demand 5-day tests, one on July 10, 2008 and the other on July 17, 2008. On the DMR, the permittee reported that one test for the month was run. The permittee should have reported in the number of frequencies column, 2 tests for the month and in the comments box should have noted that two tests were performed for the month but the BOD₅ that was done on July 10, 2008 was not included in the calculations for reporting purposes because the laboratory felt that the Glucose-glutamic acid check (standard) was out of the satisfactory range of 198±30.5.

Section F – Laboratory: Overall Rating of “Marginal”

Permit Requirements for Laboratory:

Part III, Page 4, Monitoring Procedures states:

- c. *An adequate analytical quality control program including the analysis of sufficient standards, spikes, duplicate samples to insure the accuracy of all required analytical results shall be maintained by the permittee or designated commercial laboratory.*

Findings for Laboratory:

BOD

Upon review of the bench sheets provided by Eberline Environmental Laboratory it was noted that the laboratory is averaging the two Glucose-glutamic acid checks being done for the BOD₅. Each bottle of GGA prepared (6 mLs GGA diluted to 300 mLs) is a

unique standard. In paragraph 6, page 5-6 of *Standard Methods, 19th Ed.*, it states, "Because of many factors affecting BOD tests in multilaboratory studies and the resulting extreme variability in test results, one standard deviation, as determined by interlaboratory tests, is recommended as a control limit for individual laboratories." The permittee should never average standard solutions for BOD₅.

The BOD₅ test that was done on 7/10/2008 was not used in the calculations for reporting purposes because the laboratory felt the GGA was out of range. The laboratory performed two GGAs. The results were 143.5 mg/L and 178.5 mg/L. The laboratory averaged these GGAs and obtained an average of 161 mg/L (below the satisfactory range of 198±30.5). However, because the laboratory had run two GGAs, one out of range and the other within the acceptable control range, the data should have been used for reporting purposes.

The laboratory is performing one dilution water check per test. In *Standard Methods, 19th Edition*, it states that "if the oxygen depletion of the candidate water exceeds 0.2 mg/L obtain satisfactory water by improving purification or from another source." On the BOD bench sheet for 07/18/2008, the permittee had a dilution water check depletion of 0.4 mg/L, which is above the desirable depletion. This may be an indication that the dissolved oxygen meter calibration is incorrect or that the glassware is contaminated. It should be mentioned that excessive oxygen depletion such as 0.4 mg/L in the dilution water blank is not a reason to invalidate the data for the BOD test. However, the laboratory should resolve this issue and take steps to ensure that the water being used is of sufficient quality to provide for a depletion of < 0.2 mg/L.

It was noted in the document from Analytical Quality Associates, Inc., dated 08/08/2008, it states under blanks, "It should be noted that the depletion for the BOD method blank was > 0.2 mg/l. No sample data should be qualified as a result." If the quality assurance/quality control being performed by Los Alamos National Laboratory noted this, then LANL would have had no valid data to report on the DMR for the month of July. However, this apparently was overlooked by the quality assurance/quality control personnel and was used for reporting purposes.

**NMED/SWQB
Official Photograph Log
Photo # 1**

Photographer: Erin Trujillo	Date: July 13, 2009	Time: 0916 hours
City/County: Los Alamos/Los Alamos		State: New Mexico
Location: Los Alamos National Laboratory, TA 46		
Subject: Holding pond with noticeable growth in tear of geo-textile liner.		

