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Governor
JOHN A. SANCHEZ
Lieutenant Governor

NEW MEXICO ENVIRONMENT DEPARTMENT

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RYAN FLYNN
Cabinet Secretary
BUTCH TONGATE
Deputy Secretary

Certified Mail – Return Receipt Requested

September 22, 2015

Ms. Kimberly Davis-Lebak, Manager
U.S. DOE National Nuclear Security Administration
Los Alamos Field Office
3747 West Jemez Road
Los Alamos, NM 87544

Ms. Alison M. Dories, Division Leader
Environmental Protection Division, MS K491
Los Alamos National Security, LLC
P.O. Box 1663
Los Alamos, NM 87545

Re: Los Alamos National Laboratory, Major, Individual Permit; SIC 9711; NPDES Compliance Evaluation Inspection; NM0028355; August 26, 2015

Dear Ms. Davis-Lebak and Ms. Dories,

Enclosed please find a copy of the report and check list 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, and problems noted during this inspection are discussed in the “Further Explanations” section of the inspection report.

You are encouraged to review the inspection report, required to correct any problems noted during the inspection, and advised to modify your operational and/or administrative procedures, as appropriate. If you have comments on or concerns with the basis for the findings in the NMED inspection report, please contact us (see the address below) in writing within 30 days from the date of this letter. Further, you are encouraged to notify in writing both the USEPA and NMED regarding modifications and compliance schedules at the addresses below:

Racquel Douglas
US Environmental Protection Agency, Region VI
Enforcement Branch (6EN-WM)
Fountain Place
1445 Ross Avenue
Dallas, Texas 75202-2733

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

If you have any questions about this inspection report, please contact Erin Trujillo at 505-827-0418 or at erin.trujillo@state.nm.us.

LANL NPDES NM0028355
September 22, 2015
Page 2 of 2

Sincerely,

/s/Bruce J. Yurdin

Bruce J. Yurdin
Program Manager
Point Source Regulation Section
Surface Water Quality Bureau

cc: Rashida Bowlin, USEPA (6EN-AS) by e-mail
Carol Peters-Wagnon, USEPA (6EN-WM) by e-mail
Racquel Douglas, USEPA (6EN-WM) by e-mail
Gladys Gooden-Jackson, USEPA (6EN-WC) e-mail
Brent Larsen and Isaac Chen, USEPA (6WQ-PP) by e-mail
Robert Italiano, NMED District II by e-mail
Tony Grieggs, LANS LLC ENV-RCRA by e-mail
Mike Saladen, LANS LLC ENV-RCRA by e-mail
Marc Bailey, LANS LLC by e-mail
Gene Turner, USDOE NNSA by e-mail



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	1	5	0	8	2	6	17	18	C	19	S	20	4
Remarks																												
N A T I O N A L 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 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) Los Alamos National Laboratory (LANL) is jointly operated by the U.S. Department of Energy (DOE), National Nuclear Security Administration (NNSA), Los Alamos Field Office (LAFO) and Los Alamos National Security, LLC (LANS), Los Alamos, NM 87544. Los Alamos County.	Entry Time /Date ~ 0900 hours / 08/26/2015	Permit Effective Date 10/01/2014 05/01/2015 (Modification)
	Exit Time/Date ~1630 hours / 08/26/2015	Permit Expiration Date 09/30/2019
Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s) -Marc Bailey 505-664-0185, Brian Iacona 665-8135, Mike Saladen, Team Leader 665-6085, Tony Grieggs 665-0451, ENV-RCRA, LANS LLC -Gene Turner, Environmental Permitting Manager, USDOE NNSA LAFO / 505-667-5794 -John Daniel Naranjo & Randy Vigil, UI-DO, LANS LLC -Lawrence Chavez, UI-DO, LANS LLC -Keith Green, LANS LLC	Other Facility Data <u>EPA FRS ID Location</u> Latitude: 35.873914° Longitude: -106.319751° SIC 9711	
Name, Address of Responsible Official/Title/Phone and Fax Number -Alison M. Dorries, Division Leader, Environmental Protection Division, MS K491, Los Alamos National Security, LLC, P.O. Box 1663, Los Alamos, NM 87545 / 505-665-6952	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	S	CSO/SSO
U	Records/Reports	M	Self-Monitoring Program	S	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)

- See attached report and further explanations.

Name(s) and Signature(s) of Inspector(s) Erin S. Trujillo /s/Erin S. Trujillo	Agency/Office/Telephone/Fax NMED/SWQB/505-827-0418	Date 09/21/2015
Signature of Management QA Reviewer Sarah Holcomb /s/Sarah Holcomb	Agency/Office/Phone and Fax Numbers NMED/SWQB/505-827-2798	Date 09/21/2015



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	1	5	0	8	2	6	17	18	C	19	S	20	4
Remarks																												
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Name, Address of Responsible Official/Title/Phone and Fax Number -Kimberly Davis-Lebak, Manager, U.S. DOE NNSA, Los Alamos Field Office, 3747 West Jemez Road, Los Alamos, NM 87544 / 505-667-5105		Contacted Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

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M	Effluent/Receiving Waters	M	Laboratory	N	Storm Water	N	Other:

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Name(s) and Signature(s) of Inspector(s) Erin S. Trujillo /s/Erin S. Trujillo	Agency/Office/Telephone/Fax NMED/SWQB/505-827-0418	Date 09/21/2015
Signature of Management QA Reviewer Sarah Holcomb /s/Sarah Holcomb	Agency/Office/Phone and Fax Numbers NMED/SWQB/505-827-2798	Date 09/21/2015

SECTION A - PERMIT VERIFICATION

PERMIT SATISFACTORILY ADDRESSES OBSERVATIONS
DETAILS:

S M U NA (FURTHER EXPLANATION ATTACHED Yes)

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.

S M U NA (FURTHER EXPLANATION ATTACHED Yes)

DETAILS: **U = Compliance progress report submitted after deadline.**

N = 1st submittal of Nov 2014 DMR Outfall 160

1. ANALYTICAL RESULTS CONSISTENT WITH DATA REPORTED ON DMRs. **DMR revised after CEI**

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. **See further explanations Section F**

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. **See further explanations**

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: **Since Oct 2014 effective date of permit, sanitary sewer overflows (SSO) occurred March (6.1 gals), April (3 gals), June (75 gals) and following this CEI on 09/02/15 (TA-54, Cañada del Buey ~300 gallons). Headworks at SWWS was not in operating/in service on day of this CEI. On-site reps described that equipment was undergoing repairs/maintenance.**

1. TREATMENT UNITS PROPERLY OPERATED. **Outfall 027 de-chlorination tablets**

S M U NA

2. TREATMENT UNITS PROPERLY MAINTAINED. **See further explanations for clarifier**

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

SWWS on-site reps described

5. ALL NEEDED TREATMENT UNITS IN SERVICE. **back up measures being used to maintain bar screen.**

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

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. 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

N = Analyses

5. SAMPLING AND ANALYSES PERFORMED AT FREQUENCY SPECIFIED IN PERMIT. **Outfall 160 cyanide & Outfall 001 WET** Y N NA

6. SAMPLE COLLECTION PROCEDURES ADEQUATE. Y N NA

a) SAMPLES REFRIGERATED DURING COMPOSITING. Y N NA

b) PROPER PRESERVATION TECHNIQUES USED. **WET cooling preservation not adequate during shipping** Y N NA

c) CONTAINERS AND SAMPLE HOLDING TIMES CONFORM TO 40 CFR 136.3. **WET & cyanide holding times** 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: **Permit requires continuous record for Outfalls 001 & 13S. For other outfalls, estimate flow measurements not subject to accuracy provisions in Part III.C.6 according to Permit.**

1. PRIMARY FLOW MEASUREMENT DEVICE PROPERLY INSTALLED AND MAINTAINED. Y N NA
 TYPE OF DEVICE **Outfall 001 9"Parshall flume w/Flow Transmitter FT-960**

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

3. SECONDARY INSTRUMENTS (TOTALIZERS, RECORDERS, ETC.) PROPERLY OPERATED AND MAINTAINED. **Outfall 001** Y N NA

4. CALIBRATION FREQUENCY ADEQUATE. **Outfall 001** Y N NA

RECORDS MAINTAINED OF CALIBRATION PROCEDURES. **Outfall 001. See further explanations** Y N NA

CALIBRATION CHECKS DONE TO ASSURE CONTINUED COMPLIANCE. **Outfall 001** Y N NA

5. FLOW ENTERING DEVICE WELL DISTRIBUTED ACROSS THE CHANNEL AND FREE OF TURBULENCE. **Outfall 001** Y N NA

6. HEAD MEASURED AT PROPER LOCATION. **Outfall 001** 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: **Contract laboratories not inspected. Facility conducts pH, TRC and Temp monitoring. Approved method dates not documented/not updated on records and contract laboratory reports.**

1. EPA APPROVED ANALYTICAL PROCEDURES USED (40 CFR 136.3 FOR LIQUIDS, 503.8(b) FOR SLUDGES). **N = Not documented** 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. **& Validation** S M U NA
- 5. DUPLICATE SAMPLES ARE ANALYZED. **pH 100** % OF THE TIME. Y N NA
- 6. SPIKED SAMPLES ARE ANALYZED. **pH (buffers) & TRC / Contract Lab 100** % OF THE TIME. Y N NA
- 7. COMMERCIAL LABORATORY USED. Y N NA

LAB NAME / LAB ADDRESS / PARAMETERS PERFORMED

- 1) NM Water Testing Laboratory, Inc, Tel 505-929-4545 / 401 North Coronado Ave, Espanola, New Mexico, 87432 / E.coli**
- 2) GEL Laboratories, LLC, Tel 843-556-8171 / 2040 Savage Road Charleston SC 29407 / TSS, Metals, Nutrients (P)**
- 3) Pacific EcoRisk, Tel 707-207-7760 / 2250 Cordelia Rd, 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
Outfall 001	None	None	Clear	None	None	None	NA
Outfall 027	None	None	Clear	None	Some Foam	None	NA
Outfall 022	No Discharge	NA					

RECEIVING WATER OBSERVATIONS **WET test reproduction failures reported in March and June 2015. Foam had accumulated in Sandia Canyon below Outfalls 001 & 027. Source of foam not determined during this CEI.**

SECTION H - SLUDGE DISPOSAL

SLUDGE DISPOSAL MEETS PERMIT REQUIREMENTS. S M U NA (FURTHER EXPLANATION ATTACHED No).
 DETAILS: **Compost analytical test results had not been completed according to on-site reps.**

- 1. SLUDGE MANAGEMENT ADEQUATE TO MAINTAIN EFFLUENT QUALITY. S M U NA
- 2. SLUDGE RECORDS MAINTAINED AS REQUIRED BY 40 CFR 503. **NA = Not evaluated** S M U NA
- 3. FOR LAND APPLIED SLUDGE, TYPE OF LAND APPLIED TO: **NA** (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

**U.S. Department of Energy (DOE) & Los Alamos National Security, LLC (LANS)
 Los Alamos National Laboratory
 Compliance Evaluation Inspection
 NPDES Permit No. NM0028355
 August 26, 2015**

Further Explanations

Introduction

On August 26, 2014, Erin Trujillo of the New Mexico Environment Department (NMED), Surface Water Quality Bureau (SWQB) accompanied by Sarah Holcomb also of NMED SWQB, conducted a Compliance Evaluation Inspection (CEI) at the Los Alamos National Laboratory (LANL), jointly operated by Los Alamos National Security, LLC (LANS) and the U.S. Department of Energy (U.S. DOE), National Nuclear Security Administration (NNSA), Los Alamos Field Office (LAFO) in Los Alamos County, New Mexico.

Under assigned NPDES permit number NM0028355, LANL is classified as a major discharger under the federal Clean Water Act, Section 402, of the National Pollutant Discharge Elimination System (NPDES) permit program. This permit authorizes discharges from eleven (11) outfalls to several tributaries, 20.6.4.126 and 20.6.4.128 NMAC, thence to the Rio Grande of the Rio Grande Basin. Segment 20.6.4.126 NMAC includes the designated uses of coldwater aquatic life, livestock watering, wildlife habitat and secondary contact. Segment 20.6.4.128 NMAC includes the designated uses of livestock watering, wildlife habitat, limited aquatic life, and secondary contact.

The NMED performs a certain number of CEIs each year for the U.S. Environmental Protection Agency (USEPA) Region VI. The purpose of this inspection is to provide the USEPA with information to evaluate the Permittee's compliance with the NPDES permit. This inspection report is based on information provided by the Permittee's representatives, observations made by the NMED inspectors, and records and reports kept by the Permittee and/or NMED.

Upon arrival, an entrance interview was conducted with LANS and DOE staff at LANL ENV-RCRA offices at approximately 0900 hours on the day of this CEI. The inspector made introductions, presented credentials to Marc Bailey, LANS ENV staff, and discussed the purpose of this inspection with LANS ENV and DOE staff (Marc Bailey, Brian Iacona and Mike Saladen, LANS and Gene Turner, DOE). The facility tour with LANS and DOE staff included Outfalls 001, 022 and 027, and LANL Power Plant, Sanitary Effluent Reclamation Facility (SERF), and Sanitary Wastewater System (SWWS) plant. An exit interview to discuss preliminary findings of the CEI was conducted on site with LANS staff (Marc Bailey, Mike Saladen and Tony Grieggs, LANS ENV) before the inspectors left the facility at approximately 1630 hours on day of this CEI.

Treatment Scheme

A brief narrative description of authorized outfalls and associated operational units was provided in the July 2014 CEI report available at <https://www.env.nm.gov/swqb/NPDES/Inspections/NM0028355-20140709.pdf>. Below is a list of the outfalls, associated location, and discharge described in the permit and receiving water information:

Outfall Number	Technical Area (TA) - Building	LANL Facility	LANL Facility Operations	Authorized Discharge	Receiving Water
001	3-22, 46-347	Power Plant, Sanitary Effluent Reclamation Facility (SERF), and Sanitary Wastewater System (SWWS) Plant	UI-DO	power plant waste water from cooling towers, boiler blowdown drains, demineralizer backwash, R/O reject, floor & sink drains, & treated sanitary re-use	Sandia Canyon Segment 20.6.4.126 NMAC

13S	46-347	SWWS Plant	UI-DO	treated sanitary waste water	Cañada del Buey Segment 20.6.4.128 NMAC
051	50-1	Radioactive Liquid Waste Treatment Facility (RLWTF)	TA-55-DO	treated radioactive liquid waste	Mortandad Canyon Segment 20.6.4.128 NMAC
03A027	3-2327	Strategic Computing Complex (SCC) Cooling Tower	UI-DO	cooling tower blowdown and other wastewater	Sandia Canyon Segment 20.6.4.126 NMAC
03A160	35-124	National High Magnetic Field Laboratory (NHMFL) Cooling Tower	STO-DO	cooling tower blowdown and other wastewater	Ten Site Canyon Segment 20.6.4.128 NMAC
03A181	55-6	TA-55 Cooling Tower	TA-55-DO	storm water, cooling tower blowdown and other wastewater	Mortandad Canyon Segment 20.6.4.128 NMAC
03A199	3-1837	Laboratory Data Communications Center (LDCC) Cooling Tower	UI-DO	cooling tower blowdown and other wastewater	Sandia Canyon Segment 20.6.4.126 NMAC
03A022	3-2238	Sigma Emergency Cooling System	STO-DO	storm water, roof drain water, and once-through cooling water for emergency use	Mortandad Canyon Segment 20.6.4.128 NMAC
03A048	53-963/978	Los Alamos Neutron Science Center (LANSCE) Cooling Tower	LFO-DO	cooling tower blowdown and other wastewater	Los Alamos Canyon Segment 20.6.4.128 NMAC
03A113	53-952	Low-Energy Demonstration Accelerator (LEDA) Cooling Tower	LFO-DO	cooling tower blowdown and other wastewater	Sandia Canyon Segment 20.6.4.128 NMAC
05A055	16-1508	High Explosives Wastewater Treatment Facility (HEWTF)	WFO-DO	treated waste water from the high explosives waste water treatment facility	Cañon de Valle Segment 20.6.4.128 NMAC

An engineered berm and drop inlet grate had been constructed and installed downgradient of the SWWS sludge drying beds to capture stormwater and direct flow from the paved access road to the adjacent beds instead of entering a stormwater inlet with outlet to Cañada del Buey.

In February of 2013, LANS ENV-RCRA staff reported to NMED and EPA discovering an unpermitted discharge from operations at SERF to Sandia Canyon. A CEI was conducted at SERF on March 12, 2013 and the report is available at <https://www.env.nm.gov/swqb/documents/swqbdocs/NPDES/Inspections/NM0028355-20130312.pdf>. During this CEI, on-site representatives described sump pump operating procedures to manage stormwater and roof runoff entering the unsheltered chemical storage containment area and transfer of the water to the SERF treatment system to prevent unauthorized discharge. An inlet for the unpermitted discharge pipe at the containment area had been removed. The remaining pipe was plugged. No unpermitted discharge from SERF to Sandia Canyon was observed on the day of this CEI.

There continues to be no reported discharge at Outfall 13S (SWWS), Outfall 051 (RLWTF) and Outfall 055 (HEWTF). Once-through cooling water for emergency use system discharge at Outfall 022 has not been reported since the October 2014 effective date of the permit.

Compliance Schedules in Permit

Outfall 001 has a compliance schedule for 6T3 temperature (°C)--effluent limitation and monitoring requirements of 6T3 takes effective on the date one-day before the permit expiration date. Whole Effluent Toxicity (WET) effluent limits for Outfall 051 become effective on March 1, 2016. The following outfalls and effluent limitations have compliance schedules that take effective on the date of three years from the effective date of the permit (i.e., October 1, 2017): Outfalls 001, 027, 048, 113, 181 and 199 (total recoverable aluminum & dissolved copper); Outfall 048 and Outfall 199 (total & dissolved mercury); and Outfall 160 (total recoverable aluminum).

Section A - Permit Verification - Overall rating of “Satisfactory”

Comments on USEPA’s Sufficiently Sensitive Method Rule

Part I.E (Effluent Characteristic Analysis) of the Permit requires additional testing for Outfalls 051, 04A022 and 05A055 if discharge occurs. Permit applicants must use “sufficiently sensitive” approved analytical test methods when completing an NPDES permit application. Minimum Quantification Levels (MQL's), discussed in Part II.A and listed in Appendix A of the Permit, do not include language on USEPA’s Sufficiently Sensitive Method (SSM) Rule effective September 18, 2014. More information on the SSM rule is available at <http://water.epa.gov/polwaste/npdes/basics/>.

USEPA R6 has not determined that modifications to the permit are required at this time. Prior to analysis and submitting (reporting) “not detected” or “0” concentration data for effluent characteristics or permit renewal applications using approved 40 CFR 136.3 or other methods approved in the permit, Permittees should contact the USEPA R6 Permit Writer to confirm that the reportable MQLs in Appendix A of PART II of the Permit are sufficient. Additional information (e.g., detection or estimate limits, minimum or reportable quantification levels, etc.) may be required.

Section B - Recordkeeping and Reporting Evaluation - Overall rating of “Unsatisfactory”

Permit Requirements

- Part I.B (Compliance Schedules) of the Permit states “*All effluent limitations with a compliance schedule established in Part I., section A. above, must comply with the following reporting requirements and compliance schedules: 1. Provide semi-annual progress reports by August 31 for the period of January – June, and by February 28 for the period of July – December....*”
- Part III.C.5.b (Monitoring Procedures) of the Permit states “*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.*”

Findings

- The compliance schedule progress report dated May 20, 2015 was submitted after the February 28, 2015 deadline. Prior to this CEI, the Permittees reported the non-compliance with meeting the deadline when the late progress report was submitted to USEPA (copied to NMED). Plans, if any, to restart discharge to Outfall 051 should also be discussed in future progress report due to this outfall’s WET effluent limit compliance schedule.
- For Outfall 160, the November 2014 discharge monitoring report (DMR) incorrectly reported the results and monitoring frequency for invalid cyanide monitoring data. Following this CEI, the Permittees submitted a revised and corrected DMR to USEPA (copied to NMED).
- Records provided for review to document pH meter calibration were not adequate. More information appears needed in record keeping and/or written procedures (e.g., specific buffers used in standard units (su), quality and expiration dates of buffers, time(s) of instrument calibration and standardization, observations if meter is stable, etc.). Additional record keeping appears needed to document that the frequency of standardization, in this case, at the beginning of the day, is sufficient for samples analyzed through out the day.

Additional Notes: Standard methods (SM) 4500-H+B-2000 for pH procedure describes instrument calibration and a three buffer standardization. For instrument calibration, the method states “*follow manufacturer’s instructions.*” The method describes specific buffer standardization requirements (e.g, “*select second buffer within 2 pH units of sample pH,*” “*third buffer below pH 10, approximately 3 pH units different from the second.*”) Reviewed pages from the analyst’s field log book did not include information on the initial and

second buffers. Buffer quality and expiration dates were also not recorded on the provided records. The third buffer units (su) was documented.

Concerning frequency of the standardization, the method states “*When only occasional pH measurements are made standardize instrument before each measurement. When frequent measurements are made and the instrument is stable, standardize less frequently. If sample pH values vary widely, standardize for each sample with a buffer having a pH within 1 to 2 pH units of the sample.*”

Comments on NetDMR

Part I.C (Reporting) of the Permit does not require electronic reporting. Although not required, USEPA encourages electronic reporting and has established NetDMR an electronic reporting tool which can be used by NPDES-regulated facilities to submit discharge monitoring reports (DMRs) electronically to EPA through an internet application. More information on NetDMR is available at <https://netdmr.epa.gov/netdmr/public/home.htm>.

Section C - Operations and Maintenance - Overall rating of “Marginal”

Permit Requirements

- Part III.B.3.a (Proper Operation and Maintenance) of the Permit states “*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....*”
- Part III.B.3.b (Proper Operation and Maintenance) of the Permit states “*The permittee shall provide an adequate operating staff which is duly qualified to carry out operation, maintenance ...required to insure compliance with the conditions of this permit.*”
- For Outfall 048, Part I.A (Effluent Limitations and Monitoring Requirements) of the Permit requires a total residual chlorine (TRC) effluent limitation daily max of 0.011 mg/L.
- For each outfall, Part I.A of the Permit (floating solids, oil and grease) 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

- The north clarifier weirs at SWWS, part of the treatment system associated with discharges at Outfall 001, had short circuiting and leaks (see Photos 1 and 2). Re-caulking or other preventative maintenance appeared needed.

Additional Notes: Wastewater leaves the clarifier by flowing over weirs into effluent troughs (launders). Clarifier weirs, when properly maintained, skim water evenly off the surface of the tank. Preventing short circuiting or areas of high velocity near the weir or launder is important so as to not pull settling solids into the effluent.

- White foam was observed below Outfall 027 and accumulated in Sandia Canyon downstream of Outfall 001 and Outfall 027 (see Photos 3 and 4). Source of observed foam (e.g., natural, industrial chemicals) was not determined during this CEI. Following the CEI, LANS ENV staff indicated that they sent the photo of the observed foam at Outfall 027 to facility personnel to review their treatment chemical material safety data sheets (MSDS) for possible foam-casing agents.

Additional Notes: Use of de-chlorination product binders or other inert materials may cause foams and small white pieces of floating material to be released into effluent. Steps to determine if foam-casing agents and/or concentrations are in the effluent and to minimize discharge of excessive pollutants include reviewing treatment chemical MSDS or safety data sheet (SDS), manufacturer’s label instructions; and internal procedures for determining the amount of chemical needed for de-chlorination.

- De-chlorination tablets installed below Outfall 022 (Sigma Emergency Cooling System) are exposed to precipitation and unnecessarily treat stormwater and roof runoff discharge from the Outfall (see Photo 5).
- Following this CEI, the Permittees submitted verbal and written reports for Outfall 048 TRC exceedance of sample collected on September 8, 2015. The Permittees’ written report dated September 10, 2015 states that the chlorine neutralizer was depleted over the holiday weekend and summarizes steps taken to eliminate and prevent recurrence of the exceedance. The Permittees’ written report identified steps included additional inspection and verification during holidays or extended weekends, increasing storage of the chlorine neutralizer, and evaluate the feasibility of installing an automatic detection system.

Section D - Self-Monitoring - Overall rating of “Marginal”

Based on information reviewed or provided by the Permittee representatives, overall quality (reliability) of the facility’s self-monitoring program was satisfactory except for sample preservation and holding times during shipping as discussed below.

Permit Requirements

- For Outfall 001, Part I.A of the Permit requires the following Whole Effluent Toxicity (WET) monitoring once per 5 years as follows:

EFFLUENT CHARACTERISTICS	DISCHARGE MONITORING		MONITORING REQUIREMENTS	
	MONTHLY AVG MINIMUM	7-DAY MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
WHOLE EFFLUENT TOXICITY TESTING (*7) (7-day Static Renewal)				
Ceriodaphnia dubia	Report	Report	1/5 Years	24-Hr Composite
Pimephales promelas	Report	Report	1/5 Years	24-Hr Composite

Part II.G.1.b of the Permit states “Chronic sub-lethal test failure is defined as a demonstration of a statistically significant sub-lethal effect (i.e., growth or reproduction) at test completion to a test species at or below the critical dilution.” Part II.G.2 states “A test that meets all test acceptability criteria and demonstrates significant toxic effects does not need additional confirmation. Such testing cannot confirm or disprove a previous test result. If any valid test demonstrates significant lethal or sub-lethal effects to a test species at or below the critical dilution, the frequency of testing for that species is automatically increased to once per quarter for the life of the permit.” Part II.G.2.a states “The permittee shall conduct a total of three (3) additional tests for any species that demonstrates significant toxic effects at or below the critical dilution. The additional tests shall be conducted monthly during the next three consecutive months.” Part II.G (WET, 7-day Chronic NOEC Freshwater) states “... is unlawful and a violation of this permit for a permittee or his designated agent...to delay sample shipment, or to terminate or to cause to terminate a toxicity test....”

- For Outfall 160, Part I.A of the Permit requires monitoring and reporting of Total Cyanide once per month (1/Month).

Findings

- Outfall 001 WET and Outfall 160 cyanide monitoring was not performed at a frequency required in the Permit. Results were invalid or test stopped due to sample preservation or exceeding holding times during shipping. Prior to this CEI, the Permittees reported this non-compliance with completing required WET and cyanide monitoring on the DMRs.

Additional Notes:

For Outfall 001, WET testing failure (reproduction) was reported with March 2015 and subsequent DMRs. The 1st required retest for April 2015 passed. However, the 2nd required retest initiated in May of 2015 was reported to have been terminated by the contracted analytical laboratory because the samples were not delivered within the required hold time. A retest initiated on June 8, 2015 passed. The retest initiated on June 15 failed reportedly due to unusual concentration on response curves. For retests initiated in July and August 2015, WET tests were reportedly cancelled because the samples did not retain proper cooling preservation during commercial carrier shipping.

For Outfall 160, samples collected for cyanide monitoring exceeded holding times and results were invalid for November 2014.

Section E - Flow Measurement - Overall rating of "Satisfactory"

Comment

Additional information or clarification in LANL's written procedures for Outfall 001 is recommended. The portion of LANL's flow measurement written procedures that include a calculation formula and discharge table in gallons per minute (GPM) includes a formula with a constant of 30.76877. For a 9-inch Parshall Flume, other engineering resources (e.g., Isco Open Channel Flow Measurement Handbook) indicate that a constant of at least 30.7 is used to convert water height to cubic feet per second (CFS). A constant of at least 1,378 is used to convert water height to GPM. It appears that the correct constant was used in the table. Also, for a 9-inch Parshall flume, other engineering resources indicate on discharge tables that there is excessive error from fluid-flow properties and boundary conditions at water heights below 0.10 feet and do not show values for lower flows.

Section F - Laboratory - Overall rating of "Marginal"

- Use of USEPA approved analytical procedures in 40 CFR 136.3, and for analyses conducted using Standard Methods the associated method QA/QC procedures, were not recorded on the documents provided for review and/or record keeping was not updated on the day of this CEI.

For example:

- Copper: For copper monitoring for Outfall 160 for a sample collected on June 1, 2015, the analytical method specified on the Inorganics Analysis Data Package and Certificate of Analyses indicates EPA 200.8 DOE-AL and prep method EPA 200.2. Approved methods in 40 CFR 136.3 Table IB for copper includes EPA 200.8, Rev. 5.4 (1994).

Additional Note: Following this CEI, an e-mail from a representative of the contract laboratory that conducted the copper analysis dated September 16, 2015 was forwarded by LANS ENV staff, which stated "EPA 200.8 Rev. 5.4 is being used."

- E.coli bacteria monitoring for Outfall 001: For E.coli bacteria monitoring for Outfall 001 for samples collected on October 7, 2014, the contract analytical laboratory report indicates Standard Methods (SM) 9223B Enumeration in 18th, 19th and 20th Edition--a method approved by the Standard Methods Committee in 1997. Approved methods in 40 CFR 136.3 Table IA for E.coli (see Federal Register,

Vol. 77, No. 97, Friday, May 18, 2012, Rules and Regulations) include Standard Methods 9223B-2004. SM 22nd Edition contains the 9223B-2004 approved method.

- TRC, pH and Temperature: Field Parameter Sheets for samples collected in June 2015 for TRC and pH monitoring indicated that SM 18th edition was used for TRC (4500-CL G) and pH (4500-H+B) which were approved by the SM Committee in 1989 and 1990, respectively. Approved methods in 40 CFR 136.3 Table IB for pH and TRC include SM 4500-H+B-2000 and 4500-CL G-2000, respectively. SM 21st Edition is the first edition that contains methods that were approved by the SM Committee in 2000. Field Parameter sheets for samples collected in June 2015 for temperature monitoring for Outfall 001 also indicated that SM 18th edition was used. For temperature, the approved method is SM 2550-B-2000 (SM 21st).
- TSS, Phosphorus, and Cyanide: For TSS and phosphorus monitoring (samples collected in June 2015), the contract laboratory Certificate of Analysis indicates use of SM 2540 D and EPA 365.4, but the approval dates in this case, 1997 and 1974, respectively, were not documented on the Certificate of Analyses. Given the age of the methods with no approved revisions, it is likely that the laboratory is using methods approved in 40 CFR 136.3. For total cyanide, the 40 CFR 136.3 Table IB approved method includes EPA 335.4, Rev. 1.0 (1993), the contract laboratory Certificate of Analysis only documented EPA 335.4, which would not be sufficient if another revision was developed.

Additional Notes: 40 CFR § 136.7 (Quality Assurance and Quality Control) states “*The permittee/laboratory shall use suitable QA/QC procedures when conducting compliance analyses with any Part 136 chemical method or an alternative method specified by the permitting authority.... The permittee/laboratory shall follow these QA/QC procedures, as described in the method or methods compendium.*”

SM contains QA/QC procedures are in Part 1000 section of the Standard Methods Compendium. Federal Register / Vol. 77, No. 97 / Friday, May 18, 2012 / Rules and Regulations, Section B, New Standard Methods and New Versions of Approved Standard Methods states “*This rule approves the following Standard Methods (SM) for certain pollutants currently listed in Table IB at Part 136. Laboratories performing measurements using any of the approved Standard Methods must follow the quality control (QC) procedures specified in the 20th or 21st edition of Standard Methods.*”

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

- WET test failures for Outfall 001 were discussed above.
- TRC exceedance for Outfall 048 was discussed above.
- Observed foam in Sandia Canyon below Outfall 001 and Outfall 027 was discussed above.

NMED/SWQB
Official Photograph Log
Photo # 1

Photographer: Brian Iacona, LANS LLC as requested by Erin S. Trujillo

Date: 08/26/2015

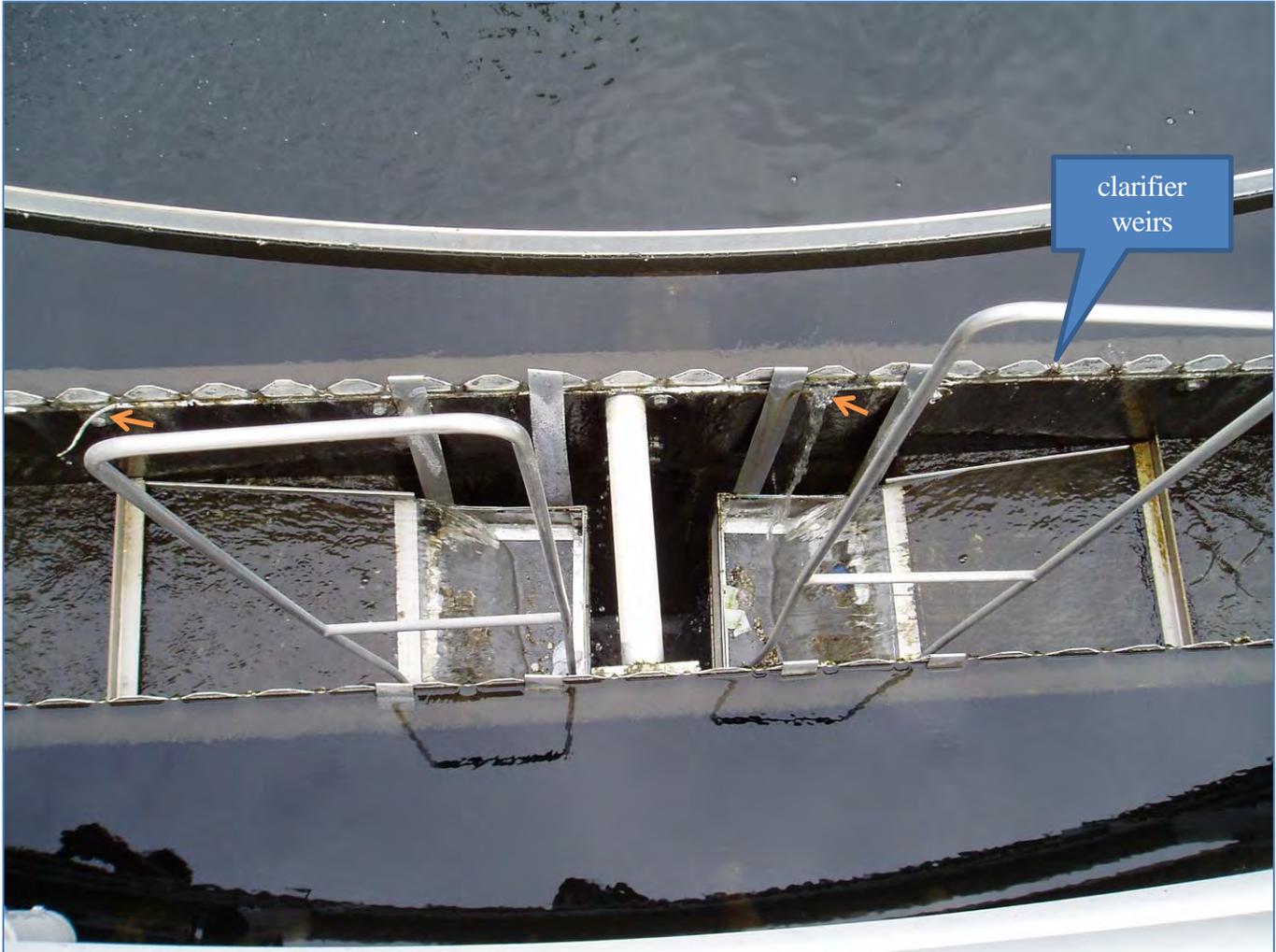
Time: 0947 hours

City/County: Los Alamos County

State: New Mexico

Location: Los Alamos National Laboratory, NPDES Permit No. NM0028355, TA-46, SWWS Plant North Clarifier

Subject: Arrows point to short circuiting that flows into screen and example of area with strip and re-caulking repairs needed along clarifier weirs.



NMED/SWQB
Official Photograph Log
Photo # 2

Photographer: Brian Iacona, LANS LLC as requested by Erin S. Trujillo

Date: 08/26/2015

Time: 0951 hours

City/County: Los Alamos County

State: New Mexico

Location: Los Alamos National Laboratory, NPDES Permit No. NM0028355, TA-46, SWWS Plant North Clarifier

Subject: Arrows points to example of strip and re-caulking repairs needing along clarifier weirs.



NMED/SWQB
Official Photograph Log
Photo # 3

Photographer: Brian Iacona, LANS LLC as requested by Erin S. Trujillo

Date: 08/26/2015

Time: 1120 hours

City/County: Los Alamos County

State: New Mexico

Location: Los Alamos National Laboratory, NPDES Permit No. NM0028355, Outfall 03A027

Subject: Arrow points to white foam observed below outfall.



NMED/SWQB
Official Photograph Log
Photo # 4

Photographer: Brian Iacona, LANS LLC as requested by Erin S. Trujillo

Date: 08/26/2015

Time: 1122 hours

City/County: Los Alamos County

State: New Mexico

Location: Los Alamos National Laboratory, NPDES Permit No. NM0028355, Sandia Canyon

Subject: Looking downstream from Outfall 03A027, arrow points to observed white foam accumulated in Sandia Canyon. Location is also downstream of Outfall 001.



NMED/SWQB
Official Photograph Log
Photo # 5

Photographer: Brian Iacona, LANS LLC as requested by Erin S. Trujillo

Date: 08/26/2015

Time: 1325 hours

City/County: Los Alamos County

State: New Mexico

Location: Los Alamos National Laboratory, NPDES Permit No. NM0028355, Outfall 04A022

Subject: Arrows point to de-chlorination tablets installed in rock channel below Outfall 022.



Attachment
Operator Response



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

Date: NOV 19 2015
Symbol: ENV-DO-15-0321
LA-UR: 15-28196
Locates Action No.: U1502063

Ms. Racquel Douglas
U.S. Environmental Protection Agency, Region VI
Enforcement Branch (6EN)
Fountain Place
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Mr. Bruce Yurdin
New Mexico Environment Department
Surface Water Quality Bureau
Point Source Regulation Section
Harold Runnels Building, N2050
1190 St. Francis Drive
P.O. Box 5469
Santa Fe, New Mexico 87502-5469

Dear Ms. Douglas and Mr. Yurdin:

Subject: NPDES Permit No. NM0028355, Response to Compliance Evaluation Inspection, August 26, 2015

The New Mexico Environment Department, Surface Water Quality Bureau (NMED/SWQB) staff conducted an NPDES Compliance Evaluation Inspection (CEI) at NPDES outfall facilities at Los Alamos National Laboratory (Laboratory) on August 26, 2015. The Laboratory's Environmental Compliance Programs Group (ENV-CP) is submitting the enclosed information in response to NMED/SWQB's inspection findings. (See Table 1 and Enclosures 1-7).

Please contact Marc Bailey at (505) 665-8135 or Mike Saladen at (505) 665-6085 if you have questions regarding this report.

Sincerely,

Anthony R. Grieggs
Group Leader
Environmental Compliance Programs, (ENV-CP)
Los Alamos National Security, LLC

ARG:MTS:MAB/lm

Enclosures:

1. ENV-CP Field Analyses pH Calibration Log
2. NPDES Permit No. NM0028355, Updated Noncompliance Report, Outfall 03A048 Oct 27, 2015
3. Outfall 001 WET Testing Summary
4. GEL DMR-QA-35 Results, Updated Certificate of Analysis
5. Updated E. Coli Certificate of Analysis
6. Updated Field Parameter Sheet
7. EPA Memo to Standard Method Editorial Board, June 20, 2012

Cy: Everett Spencer, USEPA/Region 6, Dallas TX, (E-File)
Gladys Gooden-Jackson, USEPA/Region, Dallas TX, (E-File)
Gene E. Turner, LASO-NS-LP, (E-File)
Jordan Arnsward, LASO-NS-PI, (E-File)
Kirsten M. Laskey, EM-LA, (E-File)
Craig S. Leasure, PADOPS, (E-File)
Amy E. De Palma, PADOPS, (E-File)
Michael T. Brandt, ADESH, (E-File)
Raeanna Sharp-Geiger, ADESH, (E-File)
Alison M. Dorries, ENV-DO, (E-File)
Michael T. Saladen, ENV-CP, (E-File)
Marc A. Bailey, ENV-CP, (E-File)
Robert M. Gallegos, ENV-CP, (E-File + hard copy)
LASOmailbox@nnsa.doe.gov, (E-File)
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Table 1
Compliance Evaluation Inspection, August 26, 2015
Findings and Responses

Sections with "Marginal" or "Unsatisfactory" ratings	Permit Requirement	FINDINGS	Comments/Corrective Actions
<p>Section B - Recordkeeping and Reporting Evaluation - Overall rating of "Unsatisfactory"</p>	<p>Part I.B (Compliance Schedules) of the Permit states "All effluent limitations with a compliance schedule established in Part I., section A. above, must comply with the following reporting requirements and compliance schedules: 1. Provide semi-annual progress reports by August 31 for the period of January – June, and by February 28 for the period of July – December...."</p>	<p>1). "The compliance schedule progress report dated May 20, 2015 was submitted after the February 28, 2015 deadline. Prior to this CEI, the Permittees reported the non-compliance with meeting the deadline when the late progress report was submitted to USEPA (copied to NMED). Plans, if any, to restart discharge to Outfall 051 should also be discussed in future progress report due to this outfall's WET effluent limit compliance schedule."</p> <p>2). "For Outfall 160, the November 2014 discharge monitoring report (DMR) incorrectly reported the results and monitoring frequency for invalid cyanide monitoring data. Following this CEI, the Permittees submitted a revised and corrected DMR to USEPA (copied to NMED)."</p>	<p>1). Page 25 of Part Part I.B. Compliance Schedules, states in part: "<i>All effluent limitations with a compliance scheduled in Part I., section A. above, must comply with the following reporting requirements and compliance schedules: 1. Provide semi-annual progress report by August 31 for the period January – June [emphasis added], and by February 28 for the period July – December [emphasis added].</i>" The Laboratory's new permit became effective October 1, 2014. In April 2015, the Laboratory's Environmental Compliance Programs Group (ENV-CP) staff had discussions with the EPA Region 6 Compliance and Enforcement Division personnel regarding the deadline of the first Progress Report. EPA staff indicated the first Progress Report was due February 28, 2015 but only for the partial performance period (October 2014 - December 2014). This first performance period did not align with the initial dates (July – December) for the semi-annual reports (2X/year) because of the effective date of the permit (October 1, 2014). Therefore, three Progress Reports are required for the first year of the new permit. The first Progress Report covering the period October 2014 through December 2014 was submitted May 20, 2015. The second report covering the period from January 2015 through June 2015 was submitted on August 27, 2015. The third Progress Report covering the periods from July 2015 through December 2015 will be submitted by February 28, 2016.</p> <p>There are currently no plans to restart the discharge to Outfall 051. The outfall will be maintained and used, based on programmatic and mission needs. Future Progress Reports will include the status of Outfalls 04A022 (emergency cooling system), 051, 05A055, and 13S all of which require additional monitoring if discharge resumes.</p> <p>2). The following comment was provided in the cover letter for the November 2014 Monthly DMR Submission on December 14, 2014: "<i>A compliance sample for total cyanide collected November 3, 2014 at Outfall 03A160 was not analyzed by the contract analytical laboratory within the hold time specified in 40 CFR 136.3. The result is reported on DMR 160A with a comment concerning the missed hold time. An additional total cyanide sample will be collected at Outfall 03A160 in December 2014.</i>"</p> <p>A revised DMR was submitted on September 3, 2015 documenting "0/30" in the FREQUENCY OF ANALYSIS column for total cyanide, as requested</p>

Table 1
Compliance Evaluation Inspection, August 26, 2015
Findings and Responses

Sections with "Marginal" or "Unsatisfactory" ratings	Permit Requirement	FINDINGS	Comments/Corrective Actions
			<p>by the NMED inspector.</p> <p>Per the request of EPA Region 6, NPDES Compliance Monitoring Section personnel, an additional revision was required to include "NODI = M" in the MONTHLY AV and DAILY MX cells. The revised DMR, including these changes, was resubmitted on September 21, 2015.</p>
	<p>Part III.C.5.b (Monitoring Procedures) of the Permit states "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."</p>	<p>3). "Records provided for review to document pH meter calibration were not adequate. More information appears needed in record keeping and/or written procedures (e.g., specific buffers used in standard units (su), quality and expiration dates of buffers, time(s) of instrument calibration and standardization, observations if meter is stable, etc.). Additional record keeping appears needed to document that the frequency of standardization, in this case, at the beginning of the day, is sufficient for samples analyzed through out the day."</p> <p>"Additional Notes: Standard methods (SM) 4500-H+B-2000 for pH procedure describes instrument calibration and a three buffer standardization. For instrument calibration, the method states "follow manufacturer's instructions." The method describes specific buffer standardization requirements (e.g, "select second buffer within 2 pH units of sample pH," "third buffer below pH 10, approximately 3 pH units different from the second.") Reviewed pages from the analyst's field log book did not include information on the initial and second buffers. Buffer quality and expiration dates were also not recorded on the provided records. The third buffer units (su) was documented."</p> <p>"Concerning frequency of the standardization, the method states "When only occasional pH</p>	<p>3). Standard Methods (SM) 4500-H⁺ B 2011 4. <i>a. Instrument Calibration</i> states in part: "In each case, follow manufacturer's instructions for pH meter and for storage and preparation of electrodes for use." The manufacturer's instructions for the current pH meter being used documents that the meter accepts from one to five calibration points. Calibration points of buffers 7 and 10 have been used to bracket the expected pH range for all outfall discharges in the current permit. The existing procedure includes a QA check with a certified buffer 8.00 to ensure accurate sample measurement. In using this approach, accuracy has been demonstrated in the required annual DMR-QA proficiency studies (i.e.; DMRQA-35 2015, reported pH 6.4 S.U., assigned value 6.43 S.U.; DMRQA-34 2014, reported pH 7.83 S.U., assigned value 7.84 S.U.; DMRQA-33 2013, reported pH 5.93 S.U., assigned value 5.90 S.U.).</p> <p>Based on NMED's recommendation, the procedures have been updated to include a 3 point calibration using certified buffers 10, 7, and 4 in addition to the current QA measurement on certified buffer 8. Records will document which buffers were used in the calibration and QA check, and will be recorded in SU on the appropriate log (See Enclosure 1).</p> <p>Please note, the terms "occasional" and "frequent" in the method are not defined. QA readings on certified buffer 8 will be performed prior to each field sample measurement. If the additional QA checks indicate that 3 point calibrations are needed more frequently, the procedure will be updated.</p>

Table 1
Compliance Evaluation Inspection, August 26, 2015
Findings and Responses

Sections with "Marginal" or "Unsatisfactory" ratings	Permit Requirement	FINDINGS	Comments/Corrective Actions
		<p>measurements are made standardize instrument before each measurement. When frequent measurements are made and the instrument is stable, standardize less frequently. If sample pH values vary widely, standardize for each sample with a buffer having a pH within 1 to 2 pH units of the sample."</p>	
<p>Section C - Operations and Maintenance - Overall rating of "Marginal"</p>	<p>Part III.B.3.a (Proper Operation and Maintenance) of the Permit states "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</p>	<p>4). "The north clarifier weirs at SWWS, part of the treatment system associated with discharges at Outfall 001, had short circuiting and leaks (see Photos 1 and 2). Re-caulking or other preventative maintenance appeared needed."</p> <p>"Additional Notes: Wastewater leaves the clarifier by flowing over weirs into effluent troughs (launders). Clarifier weirs, when properly maintained, skim water evenly off the surface of the tank. Preventing short circuiting or areas of high velocity near the weir or launder is important so as to not pull settling solids into the effluent."</p>	<p>4). A walk down with Safety, Planner, Operations, and MSS-FLM personnel was completed on October 22, 2015, and a Safety Plan is being written. The recommended 3M adhesive (caulking) has been ordered. Re-caulking will be completed by December 4, 2015.</p>

Table 1
Compliance Evaluation Inspection, August 26, 2015
Findings and Responses

Sections with "Marginal" or "Unsatisfactory" ratings	Permit Requirement	FINDINGS	Comments/Corrective Actions
	<p>discharges of excessive pollutants and will achieve compliance with the conditions of this permit...."</p> <p>Part III.B.3.b (Proper Operation and Maintenance) of the Permit states "The permittee shall provide an adequate operating staff which is duly qualified to carry out operation, maintenance ... required to insure compliance with the conditions of this permit."</p> <p>For Outfall 048, Part I.A (Effluent Limitations and Monitoring Requirements) of the Permit requires a total residual chlorine (TRC) effluent limitation daily max of 0.011 mg/L.</p> <p>For each outfall, Part</p>	<p>5). "White foam was observed below Outfall 027 and accumulated in Sandia Canyon downstream of Outfall 001 and Outfall 027. Source of observed foam (e.g., natural, industrial chemicals) was not determined during this CEI. Following the CEI, LANS ENV staff indicated that they sent the photo of the observed foam at Outfall 027 to facility personnel to review their treatment chemical material safety data sheets (MSDS) for possible foam-casing agents."</p> <p>"Additional Notes: Use of de-chlorination product binders or other inert materials may cause foams and small white pieces of floating material to be released into effluent. Steps to determine if foam-casing agents and/or concentrations are in the effluent and to minimize discharge of excessive pollutants include reviewing treatment chemical MSDS or safety data sheet (SDS), manufacturer's label instructions; and internal procedures for determining the amount of chemical needed for de-chlorination."</p> <p>6). De-chlorination tablets installed below Outfall 022 (Sigma Emergency Cooling System) are exposed to precipitation and unnecessarily treat stormwater and roof runoff discharge from the Outfall.</p>	<p>5). A review of the photo of foam at Outfall 03A027 was conducted by the subcontractor providing water treatment chemicals to the facility. Additionally, the cooling tower treatment chemicals in use at the Strategic Computing Complex (SCC) were reviewed and operators indicated that the chemical treatment chemicals have not changed. However, the make-up water supplied by the Sanitary Effluent Reclamation Facility (SERF) to the SCC cooling tower has fluctuated from time-to-time based on tertiary treatment and quality of sanitary wastewater received by the SERF facility but this has not affected effluent quality. For example, total phosphorus has averaged 3.23 mg/L over the last 8 quarters with a minimum result of 1.36 mg/L and a maximum of 4.21 mg/L. Permit limits are 20 mg/L monthly average, and 40 mg/L daily maximum.</p> <p>Facility personnel and ENV-CP will continue to monitor visible foam at Outfall 03A027.</p> <p>6). Facility representatives stated that the roof drains cannot be isolated from the Outfall 04A022 pipe where the emergency cooling system discharges when activated. Placing de-chlorination tablets at the end of the pipe is the most feasible solution to ensure de-chlorination of the emergency cooling system discharge, if triggered, even though the tablets will also be treating roof drain water.</p>

**Table 1
Compliance Evaluation Inspection, August 26, 2015
Findings and Responses**

Sections with "Marginal" or "Unsatisfactory" ratings	Permit Requirement	FINDINGS	Comments/Corrective Actions
	<p>IA of the Permit (floating solids, oil and grease) 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."</p>	<p>7). "Following this CEI, the Permittees submitted verbal and written reports for Outfall 048 TRC exceedance of sample collected on September 8, 2015. The Permittees' written report dated September 10, 2015 states that the chlorine neutralizer was depleted over the holiday weekend and summarizes steps taken to eliminate and prevent recurrence of the exceedance. The Permittees' written report identified steps included additional inspection and verification during holidays or extended weekends, increasing storage of the chlorine neutralizer, and evaluate the feasibility of installing an automatic detection system."</p>	<p>7). Reporting requirements for permit limit exceedances contained in NPDES Permit No. NM0028355 were completed on September 9, 2015 (24-hour verbal notifications) and September 10, 2015 (5-day written reports). Corrective actions were identified in the required 5-day Noncompliance Report submitted to EPA/NMED-SWQB on September 10, 2015. In addition, an updated Noncompliance Report was submitted to EPA/NMED-SWQB with the DMR submittal on October 27, 2015 (ref: ENV-DO-15-0307, See Enclosure 2).</p>

Table 1
Compliance Evaluation Inspection, August 26, 2015
Findings and Responses

Sections with "Marginal" or "Unsatisfactory" ratings	Permit Requirement	FINDINGS	Comments/Corrective Actions
<p>Section D - Self-Monitoring - Overall rating of "Marginal"</p>	<p>For Outfall 001, Part I.A of the Permit requires Whole Effluent Toxicity (WET) monitoring once per 5 years.</p> <p>Part II.G.1.b of the Permit states "Chronic sub-lethal test failure is defined as a demonstration of a statistically significant sub-lethal effect (i.e., growth or reproduction) at test completion to a test species at or below the critical dilution." Part II.G.2 states "A test that meets all test acceptability criteria and demonstrates significant toxic effects does not need additional confirmation. Such testing cannot confirm or disprove a previous test result. If any valid test demonstrates significant lethal or sub-lethal effects to a test species at or below the critical dilution, the frequency of testing for that species is automatically increased to once per quarter for the life of the permit." Part</p>	<p>8). "Outfall 001 WET and Outfall 160 cyanide monitoring was not performed at a frequency required in the Permit. Results were invalid or test stopped due to sample preservation or exceeding holding times during shipping. Prior to this CEI, the Permittees reported this non-compliance with completing required WET and cyanide monitoring on the DMRs."</p> <p>"Additional Notes: For Outfall 001, WET testing failure (reproduction) was reported with March 2015 and subsequent DMRs. The 1st required retest for April 2015 passed. However, the 2nd required retest initiated in May of 2015 was reported to have been terminated by the contracted analytical laboratory because the samples were not delivered within the required hold time. A retest initiated on June 8, 2015 passed. The retest initiated on June 15 failed reportedly due to unusual concentration on response curves. For retests initiated in July and August 2015, WET tests were reportedly cancelled because the samples did not retain proper cooling preservation during commercial carrier shipping."</p> <p>"For Outfall 160, samples collected for cyanide monitoring exceeded holding times and results were invalid for November 2014."</p>	<p>8). <u>Outfall 001 WET Testing:</u> The "MEASUREMENT FREQUENCY" for 7-day Static Renewal WET test at Outfall 001 is once per 5 years, "SAMPLE TYPE" 24-Hr Composite. The method requires three separate samples (24-hour composites) collected 48 hours apart. To meet these requirements and have the samples arrive at the analytical laboratory within hold times, the three 24-hour composite samples are shipped on Monday, Wednesday, and Friday via FedEx to arrive in California the on Tuesday, Thursday, and Saturday mornings, respectively. For any test that fails, three additional tests are required during the next three consecutive months. The enclosed summary table (See Enclosure 3) lists the 2015 WET sampling events at Outfall 001, to date. The tests conducted March 23, 25, and 27, 2015 failed for sub-lethal toxicity for <i>C. dubia</i>, so WET tests were required the next three consecutive months. Samples were collected in April, May, and June 2015 but the analytical laboratory terminated the May 2015 test due to low survival in the Lab Water Control treatment. Obtaining completed tests has proven to be a challenge due to courier and analytical laboratory issues. The final tests received from the analytical laboratory have been submitted to EPA/NMED with the following month's DMRs. The permittee has an outside contractor evaluating the final results and the analytical laboratory currently performing the tests. Additionally, the EPA Region 6 WET Testing Coordinator has been contacted for guidance on the continuing issues with the WET tests.</p> <p><u>Outfall 03A160 Cyanide Analysis November 2014</u> The November 2014 sample was received at the analytical laboratory (General Engineering Laboratories, LLC [GEL]) on November 4, 2015 without a chain of custody generated by the Laboratory's Sample Management Office (SMO). The analytical laboratory sent an inquiry to the SMO the same day (November 4, 2015), but did not receive a response until December 15, 2014. The sample was out of hold when analyzed on December 16, 2015. As a corrective measure, the contracted analytical laboratory will now contact the SMO on a weekly basis in an attempt to resolve any outstanding receiving issues.</p>

Table 1
Compliance Evaluation Inspection, August 26, 2015
Findings and Responses

Sections with "Marginal" or "Unsatisfactory" ratings	Permit Requirement	FINDINGS	Comments/Corrective Actions
	<p>II.G.2.a states "The permittee shall conduct a total of three (3) additional tests for any species that demonstrates significant toxic effects at or below the critical dilution. The additional tests shall be conducted monthly during the next three consecutive months." Part II.G (WET, 7-day Chronic NOEC Freshwater) states "... is unlawful and a violation of this permit for a permittee or his designated agent...to delay sample shipment, or to terminate or to cause to terminate a toxicity test...."</p> <p>For Outfall 160, Part I.A of the Permit requires monitoring and reporting of Total Cyanide once per month (1/Month).</p>		<p>Comment in the cover letter for the November 2014 Monthly DMR submission dated December 14, 2014 stated in part "A compliance sample for total cyanide collected November 3, 2014 at Outfall 03A160 was not analyzed by the contract analytical laboratory within the hold time specified in 40 CFR 136.3. The result is reported on DMR 160A with a comment concerning the missed hold time. An additional total cyanide sample will be collected at Outfall 03A160 in December 2014". Comment in the cover letter for the December 2014 monthly DMR submission dated January 27, 2015 stated in part "The compliance sample for total cyanide collected November 3, 2014 at Outfall 03A160 was not analyzed by the contract analytical laboratory within the hold time specified in 40 CFR 136.3. The result was reported on DMR 160A with a comment concerning the missed hold time. As a corrective action, an additional monthly sample for total cyanide was collected December 18, 2014. Cyanide results at Outfall 03A160 since October 1, 2014 have been 0.00286 mg/L and 0.00335 mg/L in October and November (missed hold time 2014, an 12 results of Non-Detect for December 2014 through November 2015.</p> <p>A revised DMR was submitted on September 3, 2015 showing "0/30" in the FREQUENCY OF ANALYSIS column for total cyanide.</p> <p>Per the request of the EPA Region 6, NPDES Compliance Monitoring Section personnel, the revised DMR was resubmitted on September 21, 2015 with "NODI = M" in the MONTHLY AV and DAILY MX cells, as well as "0/30" in the FREQUENCY OF ANALYSIS cell.</p>

Table 1
Compliance Evaluation Inspection, August 26, 2015
Findings and Responses

Sections with "Marginal" or "Unsatisfactory" ratings	Permit Requirement	FINDINGS	Comments/Corrective Actions
<p>Section F - Laboratory - Overall rating of "Marginal"</p>	<p>None cited Comment: Use of USEPA approved analytical procedures in 40 CFR 136.3, and for analyses conducted using Standard Methods the associated method QA/QC procedures, were not recorded on the documents provided for review and/or record keeping was not updated on the day of this CEI.</p> <p>Additional Notes: 40 CFR § 136.7 (Quality Assurance and Quality Control) states "The permittee/laboratory shall use suitable QA/QC procedures when conducting compliance analyses with any Part 136 chemical method or an alternative method specified by the permitting authority.... The permittee/laboratory shall follow these QA/QC procedures, as described in the method or methods compendium test."</p>	<p>The following (9-12) are listed as "examples" in the CEI Report:</p> <p>9). "Copper: For copper monitoring for Outfall 160 for a sample collected on June 1, 2015, the analytical method specified on the Inorganics Analysis Data Package and Certificate of Analyses indicates EPA 200.8 DOE-AL and prep method EPA 200.2. Approved methods in 40 CFR 136.3 Table IB for copper includes EPA 200.8, Rev. 5.4 (1994)."</p> <p>"Additional Note: Following this CEI, an e-mail from a representative of the contract laboratory that conducted the copper analysis dated September 16, 2015 was forwarded by LANS ENV staff, which stated 'EPA 200.8 Rev. 5.4 is being used'."</p> <p>10). "E.coli bacteria monitoring for Outfall 001: For E.coli bacteria monitoring for Outfall 001 for samples collected on October 7, 2014, the contract analytical laboratory report indicates Standard Methods (SM) 9223B Enumeration in 18th, 19th and 20th Edition--a method approved by the Standard Methods Committee in 1997. Approved methods in 40 CFR 136.3 Table IA for E.coli (see Federal Register, Vol. 77, No. 97, Friday, May 18, 2012, Rules and Regulations) include Standard Methods 9223B-2004. SM 22nd Edition contains the 9223B-2004 approved method."</p>	<p>9). The contract analytical laboratory is using the most current EPA approved methods for copper, TSS, total phosphorus, and cyanide per the 2012 Methods Update Rule. Please see the Method Description column on the enclosed DMR-QA35 Final Report and the updated methods on the enclosed revised Certificate of Analysis. The analytical laboratory is in the process of updating software for submission of Certificates of Analyses that will clearly document the current methods being used as listed on the DMR-QA35 Final Report (See Enclosure 4).</p> <p>10). The permittee verified the analytical laboratory is using SM 9223B-2004 for E. coli analyses per the 2012 Methods update Rule. The analytical laboratory has updated the methods shown on Certificates of Analyses (See Enclosure 5).</p>

Table 1
Compliance Evaluation Inspection, August 26, 2015
Findings and Responses

Sections with "Marginal" or "Unsatisfactory" ratings	Permit Requirement	FINDINGS	Comments/Corrective Actions
	<p>SM contains QA/QC procedures are in Part 1000 section of the Standard Methods Compendium. Federal Register / Vol. 77, No. 97 / Friday, May 18, 2012 / Rules and Regulations, Section B, New Standard Methods and New Versions of Approved Standard Methods states "This rule approves the following Standard Methods (SM) for certain pollutants currently listed in Table IB at Part 136. Laboratories performing measurements using any of the approved Standard Methods must follow the quality control (QC) procedures specified in the 20th or 21st edition of Standard Methods.</p>	<p>11). "TRC, pH and Temperature: Field Parameter Sheets for samples collected in June 2015 for TRC and pH monitoring indicated that SM 18th edition was used for TRC (4500-CL G) and pH (4500-H+B) which were approved by the SM Committee in 1989 and 1990, respectively. Approved methods in 40 CFR 136.3 Table IB for pH and TRC include SM 4500-H+B-2000 and 4500-CL G-2000, respectively. SM 21st Edition is the first edition that contains methods that were approved by the SM Committee in 2000. Field Parameter sheets for samples collected in June 2015 for temperature monitoring for Outfall 001 also indicated that SM 18th edition was used. For temperature, the approved method is SM 2550-B-2000 (SM 21st)."</p> <p>12). "TSS, Phosphorus, and Cyanide: For TSS and phosphorus monitoring (samples collected in June 2015), the contract laboratory Certificate of Analysis indicates use of SM 2540 D and EPA 365.4, but the approval dates in this case, 1997 and 1974, respectively, were not documented on the Certificate of Analyses. Given the age of the methods with no approved revisions, it is likely that the laboratory is using methods approved in 40 CFR 136.3. For total cyanide, the 40 CFR 136.3 Table IB approved method includes EPA 335.4, Rev. 1.0 (1993), the contract laboratory Certificate of Analysis only documented EPA 335.4, which would not be sufficient if another revision was developed."</p>	<p>11). The on-site analytical laboratory has updated the Units/Method column on the Field Parameter Sheet to reflect the current approved methods being used (See Enclosure 6).</p> <p>Note: Per the enclosed June 20, 2012 EPA memo to Rodger Baird of the Standard Methods Editorial Board (See Enclosure 7), editorial changes to methods included in the Methods Update Rule (MUR) published May 18, 2012 are acceptable versions and may be used for compliance monitoring under the Clean Water Act (example: TSS - 40 CFR 136.3 MUR = 2540 D-1997, Editorial Revision = 2540 D-2011).</p> <p>12). The contract analytical laboratory is using the most current EPA approved methods for TSS, total phosphorus, and cyanide per the 2012 Methods Update Rule. Please see the Method Description column on the enclosed DMR-QA35 Final Report (See Enclosure 4). The analytical laboratory is in the process of updating software for submission of Certificates of Analyses that will clearly document the current methods being used as listed on the DMR-QA35 Final Report.</p>

Table 1
Compliance Evaluation Inspection, August 26, 2015
Findings and Responses

Sections with "Marginal" or "Unsatisfactory" ratings	Permit Requirement	FINDINGS	Comments/Corrective Actions
Section G - Effluent/Receiving Waters Observations- Overall rating of "Marginal"	None cited.	<p>13). "WET test failures for Outfall 001 were discussed above."</p> <hr/> <p>14). "TRC exceedance for Outfall 048 was discussed above."</p> <hr/> <p>15). "Observed foam in Sandia Canyon below Outfall 001 and Outfall 027 was discussed above."</p>	<p>13). See LANL response #8</p> <hr/> <p>14). See LANL response #7</p> <hr/> <p>15). See LANL response # 5</p>

ENCLOSURE 1

ENV-CP Field Analyses pH Calibration Log

ENV-DO-15-0321

LA-UR-15-28196

Date: NOV 19 2015

pH Calibration Log

(Method: SM 4500-H+ B-2011, and Beckman Coulter pHI 410 User Manual)

Date: _____ Time: _____ pH Meter: Beckman Coulter PHI410 Meter #: _____
Location: _____ Analyst: _____
Certified Buffers Used (units = S.U.) ✓
 10.00 Expiration Date: _____ Q/A: 8.00 Expiration Date: _____
 7.00 Expiration Date: _____
 4.00 Expiration Date: _____
% Slope after calibration: _____ Acceptable? Yes No mV offset at pH 7.00: _____
Q/A Check Certified Buffer 8.00 (S.U.) _____ Acceptable? Yes No
Analyst Initials: _____

Date: _____ Time: _____ pH Meter: Beckman Coulter PHI410 Meter #: _____
Location: _____ Analyst: _____
Certified Buffers Used (units = S.U.) ✓
 10.00 Expiration Date: _____ Q/A: 8.00 Expiration Date: _____
 7.00 Expiration Date: _____
 4.00 Expiration Date: _____
% Slope after calibration: _____ Acceptable? Yes No mV offset at pH 7.00: _____
Q/A Check Certified Buffer 8.00 (S.U.) _____ Acceptable? Yes No
Analyst Initials: _____

Date: _____ Time: _____ pH Meter: Beckman Coulter PHI410 Meter #: _____
Location: _____ Analyst: _____
Certified Buffers Used (units = S.U.) ✓
 10.00 Expiration Date: _____ Q/A: 8.00 Expiration Date: _____
 7.00 Expiration Date: _____
 4.00 Expiration Date: _____
% Slope after calibration: _____ Acceptable? Yes No mV offset at pH 7.00: _____
Q/A Check Certified Buffer 8.00 (S.U.) _____ Acceptable? Yes No
Analyst Initials: _____

ENCLOSURE 2

**NPDES Permit No. NM0028355, Updated
Noncompliance Report, Outfall 03A048 Oct 27, 2015**

ENV-DO-15-0321

LA-UR-15-28196

Date: NOV 19 2015

Los Alamos National Laboratory
NPDES Permit No. NM0028355
Non-Compliance Report October 22, 2015,
(Updated Information under Item 6 in Bold)

1. Location of noncompliant discharge:

NPDES Outfall 03A048 TA-53-963/978 LANSCE Cooling Towers

2. Description of noncompliant discharge

The weekly compliance total residual chlorine (TRC) result was 0.05mg/L from a sample collected September 8, 2015 at 10:20 a.m. This exceeds the permit limit of 0.011 mg/L.

3. Impact upon the receiving waters

Outfall 03A048 intermittently discharges into Los Alamos Canyon, an ephemeral tributary to the Rio Grande. No adverse impacts were observed.

4. Cause of noncompliance

Chlorine neutralizing chemical ran out over the 3-day Labor Day weekend.

5. Duration of condition if uncorrected

Chlorine neutralizer was added to the 55 gallon drum Facility personnel verified the chlorine neutralization system was back in operation with no chlorine was present in the blowdown at 11:06 a.m. An additional compliance sample was collected at 2:55 p.m. with a TRC result of 0.00 mg/L.

6. Steps taken to eliminate and prevent recurrence of the condition

- Incorporate into the existing Cooling Tower and Water Treatment Operations Procedure at the facility, additional inspection and verification of the adequacy of neutralizer quantity during holidays or extended weekends. **Completed 8/31/16.**
- The bulk 55 gallon barrel will be replaced with an approximately 85 gallon barrel that will hold sufficient chlorine neutralizer for typical operations over several days. **Completed on 9/12/2015.**
- Facility management will re-evaluate the feasibility of installing an automatic detection system to the cooling tower. **Target completion date 5/20/16.**

7. Steps taken to minimize any adverse impact to navigable water

No adverse impact to navigable waters is anticipated as the discharge did not cross the Laboratory boundary or reach the Rio Grande.



Anthony R. Grieggs
Group Leader
ENV-CP Group

Date: 10/26/15

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

ENCLOSURE 3

Outfall 001 WET Testing Summary

ENV-DO-15-0321

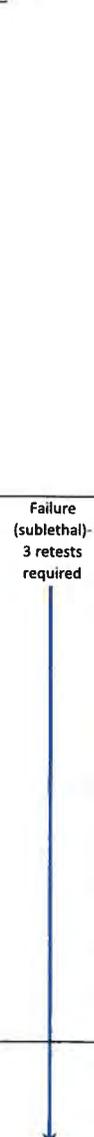
LA-UR-15-28196

Date: _____

Outfall 001 WET Testing 2015

Dates of Sample Collection 2015	Fathead minnow		Ceriodaphnia dubia		Issues	Reported on DMR	Comments
	Survival	Growth	Survival	Reprod.			
Feb 23, 25, 27	pass	pass	pass	pass	Due to weather related delays experienced by FedEx, the sample collected Feb 27 did not reach analytical laboratory within hold time. This sample was not used for testing purposes.	Reported on May 2015 DMR	Permittee notified March 13 that testing was complete but the Feb 27 sample did not meet hold time and was not used. Since method requirements were not met, results of this these test will not be used. Analytical laboratory was notified that new samples will be collected/submitted beginning March 23rd. Final report included in May DMR submittal.
Mar 23, 25, 27	pass	pass	pass	fail NOEC = 75%	None noted by analytical laboratory.	Reported on May 2015 DMR	Per facility personnel cause of sublethal toxicity at Outfall 001 is unknown and not expected. Final report (received April 17) is being validated/verified by permittee. Per Part II, G, 2, a, i of the permit, additional WET tests for Ceriodaphnia dubia will be conducted in each of the next 3 consecutive months. Final report included in May DMR submittal.
Apr 20, 22, 24	N/A	N/A	pass	pass	None noted by analytical laboratory.	Reported on May 2015 DMR	Retest #1 of 3. Final report received May 17. Final report included in May DMR submittal.
May 27, 29, Jun 1	N/A	N/A	tests terminated by analytical laboratory		Analytical laboratory notified permittee on June 1, that FedEx failed to deliver the sample collected May 29 within hold time. "The 5/28 chronic C.dubia test fell below 80% survival in the Lab Water Control treatment today, so it cannot be used for compliance purposes and we will terminate the test."	NO-Laboratory has not provided report	Retest #2 of 3 Results of this these test will not be used. Permittee instructed analytical laboratory to complete test as 'static' until last sample collected June 1 is received. Since method requirements were not met, test results will not be reported. Analytical laboratory notified permittee June 4 that test fell below 80% survival in the Lab Water Control treatment, and they were terminating the test. Repeat of retest # 2 scheduled to start June 8. Final report for terminated test not submitted to permittee to
Jun 8, 10, 12	N/A	N/A	pass	pass	Analytical laboratory notified permittee on June 9, that they started seeing a decline in their Ceriodaphnia culture approximately 10 days prior (around June 1). They are hopeful they have 'fixed' the culture.	Reported on Jun 2015 DMR	Repeat of retest #2 of 3. Email from analytical laboratory stating they started seeing a decline in the Ceriodaphnia culture around June 1. They initiated these tests with the very best organisms they had.
Jun 15, 17, 19	N/A	N/A	pass	fail (unusual concentration response curve) NOEC = <32%	This test exhibited a flat concentration-response relationship for the reproduction endpoint, meaning that all of the effluent treatments exhibited toxicity to reproduction, but there was no trend for increasing toxicity as the effluent concentration increased (i.e., a clear concentration-response relationship cannot be determined).	Reported on Jun 2015 DMR	Retest #3 of 3. The analytical laboratory evaluated this test per EPA recommended review actions and could find no clear explanation of the unusual concentration-response curve. The lab recommends retesting with new samples which is consistent with EPA guidance. Additional test scheduled for July.
Jul 27, 29, 31	N/A	N/A	test not initiated		The sample shipped on Monday July 27, 2015 arrived at the analytical laboratory at a temperature of 8.9°C, which was outside of the accepted range of 0-6°C.	N/A- test not initiated	Test was rescheduled for the following week August 3, 5, 7, 2015
Aug 3, 5, 7	N/A	N/A	test canceled		The second sample shipped on Wednesday August 5, 2015 was held up in Memphis. FedEx could not deliver until Friday August 7, which was out of hold.	N/A- test not completed due to 2nd sample missed hold time	Attempted to reschedule for the following week. The analytical lab stated they were extremely busy the week of August 10-14 but could initiate the next test on Tuesday August 18, 2015. The test is rescheduled for August 17, 19, 21, 2015.
Aug 17, 19, 21	N/A	N/A	pass	pass	None noted by analytical laboratory.	Reported on Aug 2015 DMR	Retest #4 per contract lab recommendation. This test is also retest #1 of 3 due to failure (unusual concentration-response curve) of test on June 15, 17, 19. Final report included. Retest # 2 of 3 was conducted September 14, 16, and 18.
Sep 14, 16, 18	N/A	N/A	pass	pass	None noted by analytical laboratory.	Reported on Sep 2015 DMR	Retest #5 (also retest #2 of 3 for failure [unusual con/respon curve] Jun 15-19)
Oct 19, 21, 23	N/A	N/A	pass	fail NOEC = 75%	None noted by analytical laboratory.	Will Report on Oct 2015 DMR	Retest #6 (also retest #3 of 3 for failure [unusual con/respon curve] Jun 15-19)

Failure (sublethal) 3 retests required



Failure (sublethal)- 3 retests required



Failure (sublethal)- 3 retests required- Niov, Dec Jan.

ENCLOSURE 4

**GEL DMR-QA-35 Results,
Updated Certificate of Analysis**

ENV-DO-15-0321

LA-UR-15-28196

Date: NOV 19 2015



DMR-QA 35 Final Report

A Waters Company

NPDES Permit #: NM0028355
 Permit Holder: Marc Bailey
 Technical Staff Member
 Los Alamos National Laboratory
 Bikini Atoll Road SM-30
 Los Alamos, NM 87545
 505-665-8135

ERA Customer Number: U426801
 Report Issued: 07/31/15
 Study Dates: 03/20/15 - 07/10/15

THI Analyte Code	Analyte	Units	Performance Evaluation	Reported Value	Assigned Value	Acceptance Limits	Method Description	Study Mean	Study Standard Deviation	USEPA Lab Code	Study
DMRQA Hardness (cat# 580)											
1960	Total Suspended Solids	mg/L	Acceptable	63	71.7	57.9 - 80.3	SM 2540 D-2011 2011	65.9	4.58	SC00012	DMRQA35
1755	Total Hardness as CaCO3	mg/L	Acceptable	309	319	271 - 367	EPA 130.2	309	12.0	SC00012	DMRQA35
DMRQA Hardness (cat# 580)											
1960	Total Suspended Solids	mg/L	Acceptable	63	71.7	57.9 - 80.3	EPA 160.2 1979	65.9	4.58	SC00012	DMRQA35
DMRQA pH (cat# 577)											
1900	pH	S.U.	Acceptable	6.4	6.43	6.23 - 6.63	EPA 150.1 1982	6.41	0.0572	NM000953	DMRQA35
DMRQA Complex Nutrients (cat# 579)											
1910	Total phosphorus as P	mg/L	Acceptable	3	3.34	2.74 - 3.91	EPA 385.4 1974	3.45	0.193	SC00012	DMRQA35
DMRQA Complex Nutrients (cat# 579)											
1910	Total phosphorus as P	mg/L	Acceptable	3	3.34	2.74 - 3.91	SM 4500-P H-2011 2011	3.45	0.193	SC00012	DMRQA35
DMRQA Demand (cat# 578)											
1530	BOD	mg/L	Acceptable	44.3	45.8	23.7 - 67.9	SM5210B 22nd ED 2011	47.0	9.10	SC00012	DMRQA35
1565	COD	mg/L	Acceptable	62.8	73.9	53.8 - 91.1	EPA 410.4	73.5	7.11	SC00012	DMRQA35
DMRQA Demand (cat# 578)											
1565	COD	mg/L	Acceptable	62.8	73.9	53.8 - 91.1	SM 5220 B-2011 2011	73.5	7.11	SC00012	DMRQA35
DMRQA Demand (cat# 578)											
1565	COD	mg/L	Acceptable	62.8	73.9	53.8 - 91.1	HACH 8000	73.5	7.11	SC00012	DMRQA35
DMRQA Oil & Grease (cat# 582)											
1860	n-Hexane Extractable Material(O&G)(Gmv)	mg/L	Acceptable	72.4	75.0	51.6 - 88.6	EPA 1664A (SGT-HEM) 1999	68.6	5.41	SC00012	DMRQA35

All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01

16341 Table Mountain Pkwy • Golden, CO 80403 • 800.372.0122 • 303.431.8454 • fax 303.421.0159 • www.eraqc.com



Study #: DMR-QA 35
 Page 2 of 4



A Waters Company

DMR-QA 35 Final Report

NPDES Permit #: NM0028355
 Permit Holder: Marc Bailey

Technical Staff Member
 Los Alamos National Laboratory
 Bikini Atoll Road SM-30
 Los Alamos, NM 87545
 505-665-8135

ERA Customer Number: U426801
 Report Issued: 07/31/15
 Study Dates: 03/20/15 - 07/10/15

TNI Analyte Code	Analyte	Units	Performance Evaluation	Reported Value	Assigned Value	Acceptance Limits	Method Description	Study Mean	Study Standard Deviation	USEPA Lab Code	Study
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DMRQA Trace Metals (cat# 586)

1000	Aluminum	µg/L	Acceptable	984	944	770 - 1100	EPA 200.7 4.4 1994	946	51.3	SC00012	DMRQA35
1010	Arsenic	µg/L	Acceptable	645	658	555 - 753	EPA 200.7 4.4 1994	642	28.7	SC00012	DMRQA35
1030	Cadmium	µg/L	Acceptable	871	870	740 - 1000	EPA 200.7 4.4 1994	859	24.4	SC00012	DMRQA35
1040	Chromium	µg/L	Acceptable	551	542	461 - 623	EPA 200.7 4.4 1994	542	22.3	SC00012	DMRQA35
1055	Copper	µg/L	Acceptable	156	151	128 - 174	EPA 200.7 4.4 1994	152	8.46	SC00012	DMRQA35
1070	Iron	µg/L	Acceptable	2180	2140	1820 - 2460	EPA 200.7 4.4 1994	2160	80.6	SC00012	DMRQA35
1105	Nickel	µg/L	Acceptable	1180	1140	1010 - 1280	EPA 200.7 4.4 1994	1130	48.7	SC00012	DMRQA35
1140	Selenium	µg/L	Acceptable	203	211	179 - 243	EPA 200.7 4.4 1994	210	11.2	SC00012	DMRQA35
1190	Zinc	µg/L	Acceptable	1690	1710	1450 - 1970	EPA 200.7 4.4 1994	1710	71.6	SC00012	DMRQA35

DMRQA Trace Metals (cat# 586)

1000	Aluminum	µg/L	Acceptable	1000	944	770 - 1100	EPA 200.8 5.4 1994	946	51.3	SC00012	DMRQA35
1010	Arsenic	µg/L	Acceptable	598	658	555 - 753	EPA 200.8 5.4 1994	642	28.7	SC00012	DMRQA35
1030	Cadmium	µg/L	Acceptable	880	870	740 - 1000	EPA 200.8 5.4 1994	859	24.4	SC00012	DMRQA35
1040	Chromium	µg/L	Acceptable	574	542	461 - 623	EPA 200.8 5.4 1994	542	22.3	SC00012	DMRQA35
1055	Copper	µg/L	Acceptable	167	151	128 - 174	EPA 200.8 5.4 1994	152	8.46	SC00012	DMRQA35
1070	Iron	µg/L	Acceptable	2320	2140	1820 - 2460	EPA 200.8 5.4 1994	2160	80.6	SC00012	DMRQA35
1105	Nickel	µg/L	Acceptable	1230	1140	1010 - 1280	EPA 200.8 5.4 1994	1130	48.7	SC00012	DMRQA35
1140	Selenium	µg/L	Acceptable	207	211	179 - 243	EPA 200.8 5.4 1994	210	11.2	SC00012	DMRQA35
1190	Zinc	µg/L	Acceptable	1830	1710	1450 - 1970	EPA 200.8 5.4 1994	1710	71.6	SC00012	DMRQA35

DMRQA Trace Metals (cat# 586)

1010	Arsenic	µg/L	Acceptable	621	658	555 - 753	EPA 7062 1994	642	28.7	TX00046	DMRQA35
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DMRQA Trace Metals (cat# 586)

1010	Arsenic	µg/L	Acceptable	621	658	555 - 753	SM 3114 C-2011 2011	642	28.7	TX00046	DMRQA35
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Study #: DMR-QA 35
 Page 3 of 4

All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01

16341 Table Mountain Pkwy • Golden, CO 80403 • 800.372.0122 • 303.431.8454 • fax 303.421.0159 • www.eraqc.com





A Waters Company

DMR-QA 35 Final Report

NPDES Permit #: NIM0028355
 Permit Holder: Marc Bailey

Technical Staff Member
 Los Alamos National Laboratory
 Bikini Atoll Road SM-30
 Los Alamos, NM 87545
 505-665-8135

ERA Customer Number: U426801
 Report issued: 07/31/15
 Study Dates: 03/20/15 - 07/10/15

TNI Analyte Code	Analyte	Units	Performance Evaluation	Reported Value	Assigned Value	Acceptance Limits	Method Description	Study Mean	Study Standard Deviation	USEPA Lab Code	Study
DMRQA Trace Metals (cat# 586)											
1140	Selenium	µg/L	Acceptable	180	211	179 - 243	EPA 7742.1894	210	11.2	TX000046	DMRQA35
DMRQA Trace Metals (cat# 586)											
1140	Selenium	µg/L	Acceptable	180	211	179 - 243	SM 3114 C-2011 2011	210	11.2	TX000046	DMRQA35
DMRQA Mercury (cat# 574)											
1095	Mercury	µg/L	Acceptable	10.3	11.7	8.19 - 15.2	EPA 1631E 2002	11.8	1.27	SC000012	DMRQA35
DMRQA Mercury (cat# 574)											
1095	Mercury	µg/L	Acceptable	11.1	11.7	8.19 - 15.2	EPA 245.2 1974	11.8	1.27	SC000012	DMRQA35
DMRQA Hexavalent Chromium (cat# 898)											
1045	Hexavalent Chromium	µg/L	Acceptable	220	212	174 - 248	SM 3500-Cr 6-2011 2011	213	13.7	SC000012	DMRQA35
DMRQA Hexavalent Chromium (cat# 898)											
1045	Hexavalent Chromium	µg/L	Acceptable	220	212	174 - 248	EPA 7196A.1 1992	213	13.7	SC000012	DMRQA35
DMRQA Total Cyanide (cat# 588)											
1645	Cyanide, total	mg/L	Acceptable	0.585	0.525	0.341 - 0.709	SM 4500-CN E-2011 2011	0.529	0.0527	SC000012	DMRQA35
DMRQA Total Cyanide (cat# 588)											
1645	Cyanide, total	mg/L	Acceptable	0.585	0.525	0.341 - 0.709	SM 4500-CN G-2011 2011	0.529	0.0527	SC000012	DMRQA35
DMRQA Total Cyanide (cat# 588)											
1645	Cyanide, total	mg/L	Acceptable	0.585	0.525	0.341 - 0.709	EPA 335.4 1893	0.529	0.0527	SC000012	DMRQA35
DMRQA Low-Level Total Residual Chlorine (cat# 881)											

All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01

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Study #: DMR-QA 35
 Page 4 of 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 : TA-03, SM271, Drop Pt. 02U, Rm111
 Los Alamos, New Mexico 87545

Report Date: November 16, 2015

Contact: Mr. Keith Greene
 Project: LANL - WQH NPDES 160

Client SDG: 2015-1984

Page 1 of 1

Client Sample ID: NP160-15-103352 Project: ESHL00614
 Sample ID: 378602001 Client ID: ARSL004
 Matrix: Waste Water
 Collect Date: 03-AUG-15
 Receive Date: 05-AUG-15
 Collector: Client

Parameter	Qualifier	Result	Permit Limit	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Flow Injection Analysis											
<i>NPDES-CN(TOTAL) "As Received"</i>											
Cyanide, Total	U	ND		1.67	5.00	ug/L	1	AXH3 08/06/15	0943	1498087	1
Metals Analysis-ICP-MS											
<i>NPDES-Cu "As Received"</i>											
Copper	J	0.681	22.000	0.350	1.00	ug/L	1	SKJ 08/06/15	1713	1498009	2

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 200.2	ICP-MS 200.2 PREP	JP1	08/05/15	1700	1498008
EPA 335.4	EPA 335.4 Total Cyanide	AXH3	08/06/15	0845	1498086

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 335.4 1993	
2	EPA 200.8 5.4 1994	

ENCLOSURE 5

Updated E. Coli Certificate of Analysis

ENV-DO-15-0321

LA-UR-15-28196

Date:

NOV 19 2015

NEW MEXICO WATER TESTING LABORATORY, INC.
 401 NORTH CORONADO AVE
 ESPAÑOLA, NEW MEXICO 87532
 (505) 929-4545
 E-mail: nmwtli@valornet.com

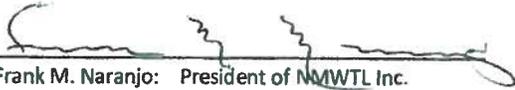
Attn: Danny Coleman
 American Radiation Services-Primary
 2609 North River Rd.
 Port Allen, LA 70767

New Mexico Water Testing Laboratory Inc.

CERTIFICATE of ANALYSIS

All samples are reported on an "as received" basis, unless otherwise noted

Client: ARS INTERNATIONAL
 COC/Lab Request Number: 2016-277
 Per Agreement Number:



Frank M. Naranjo: President of NMWTL Inc.

Lab Agreement #:
 Project Number: ADESH

- | | | |
|----------------------------|---------------------------------------|--------------------|
| 1. Sample: NP001-16-106962 | Date/Time Collected: 11/05/15 / 14:49 | Collected By: B.G. |
| 2. Sample: NP027-16-106964 | Date/Time Collected: 11/05/15 / 14:41 | Collected By: B.G. |

Sample Matrix: Water

Method: 40 CFR 136.3 (SM 9223 B-200 4)
 Run Date: 11/05/15 Recorded Date: 11/06/15
 Analyst: F. Naranjo

CNTNR/Sample ID #	Method	Analyses	Result / Units	Lab. Number
1. NP001-16-106962	SM 9223 B-200 4	E. coli	< 1 / 100 ml	ESP 8898
2. NP027-16-106964	SM 9223 B-200 4	E. coli	< 1 / 100 ml	ESP 8899

Unless otherwise noted, all samples were received in acceptable condition and all collection of samples, COC, container vessel, preservation of sample was performed by client or client representative. These were analyzed according to EPA procedure or equivalent. Reporting limits are determined by EPA methodology. No Sample results of < 1 indicate, i.e. results are less than the sample specific Reporting Limit. There were no dilutions or a factor listed. All results relate only to the items tested.

ENCLOSURE 6

Updated Field Parameter Sheet

ENV-DO-15-0321

LA-UR-15-28196

Date: NOV 19 2015

Field Parameter Sheet

Location: NPDES Outfall 001			
Sample: NPDES001- Wk 42			
Field Parameter	Value	Units/Method	Date/Time
Cl ₂ TOTRES	0.00	mg/L / SM 4500-CL G-2011	10/14/15 @ 1158
pH	7.7	SU / SM 4500-H+ B-2011	↓
Temp	19.8	deg C / SM 2550-B-2000	
Flow	113.	GPM	
Location	Outfall Pipe		

Comments

Cl₂ = 0.00 mg/L
 Spike = 0.00 mg/L

Sample Collected

By *B Gray*

Date 10/14/15

Time 1158

Sample Analyzed

By *B Gray*

Date 10/14/15

Time 1159

ENCLOSURE 7

**EPA Memo to Standard Methods Editorial Board,
June 20, 2012**

ENV-DO-15-0321

LA-UR-15-28196

Date: NOV 19 2015



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 WASHINGTON, D.C. 20460

Rodger Baird
 Joint Editorial Board
 Standard Methods
 3645 Country Meadow Lane
 Escondido, CA 92025
mrbaired@earthlink.net

ATP Case Number ADMINISTRATOR
 N12-0006

Dear Mr. Baird,

June 20, 2012

The Engineering and Analytical Support Branch (EASB) has reviewed several methods published in the 22nd Edition of *Standard Methods for the Examination of Water and Wastewater* (Standard Methods) and the on-line version of Standard Methods. These methods include editorial changes to the previously approved versions of the methods that were included in the most recent Method Update Rule (MUR) published in the *Federal Register* on May 18, 2012 (77 FR 29758).

Based on this review, EASB has determined that these methods are acceptable versions of the approved methods listed at Title 40 of the Code of Federal Regulations (40 CFR) part 136.3, Tables IB and IC, and may be used for compliance monitoring performed under the Clean Water Act. Table 1 lists the approved version of each Standard Method that was included in the MUR and the corresponding editorially revised 2011 version published in the 22nd Edition of Standard Methods and the on-line version of Standard Methods.

Table 1

Approved Standard Method in Most Recent MUR	Standard Methods 22 nd Edition Editorial Revisions
2120 B-2001	2120 B-2011
2130 B-2001	2130 B-2011
2310 B-1997	2310 B-2011
2320 B-1997	2320 B-2011
2340 B-1997	2340 B-2011
2340 C-1997	2340 C-2011
2510 B-1997	2510 B-2011
2540 B-1997	2540 B-2011
2540 C-1997	2540 C-2011
2540 D-1997	2540 D-2011
2540 E-1997	2540 E-2011
2540 F-1997	2540 F-2011
3111 B-1999	3111 B-2011

Table 1 (continued)

3111 C-1999	3111 C-2011
3111 D-1999	3111 D-2011
3111 E-1999	3111 E-2011
3112 B-2009	3112 B-2011
3113 B-2004	3113 B-2011
3114 B-2009	3114 B-2011
3114 C-2009	3114 C-2011
3120 B-1999	3120 B-2011
3125 B-2009	3125 B-2011
3500-Al B-2001	3500-Al B-2011
3500-As B-1997	3500-As B-2011
3500-Ca B-1997	3500-Ca B-2011
3500-Cr B-2009	3500-Cr B-2011
3500-Cr C-2009	3500-Cr C-2011
3500-Cu B-1999	3500-Cu B-2011
3500-Cu C-1999	3500-Cu C-2011
3500-Fe B-1997	3500-Fe B-2011
3500-K B-1997	3500-K B-2011
3500-K C-1997	3500-K C-2011
3500-Mn B-1999	3500-Mn B-2011
3500 Na B-1997	3500-Na B-2011
3500-Pb B-1997	3500-Pb B-2011
3500-V B-1997	3500-V B-2011
3500-Zn B-1997	3500-Zn B-2011
4110 B-2000	4110 B-2011
4110 C-2000	4110 C-2011
4110 D-2000	4110 D-2011
4140 B-1997	4140 B-2011
4500-B B-2000	4500-B B-2011
4500-Cl ⁻ B-1997	4500-Cl ⁻ B-2011
4500-Cl ⁻ C-1997	4500-Cl ⁻ C-2011
4500-Cl ⁻ D-1997	4500-Cl ⁻ D-2011
4500-Cl ⁻ E-1997	4500-Cl ⁻ E-2011
4500-Cl B-2000	4500-Cl B-2011
4500-Cl C-2000	4500-Cl C-2011
4500-Cl D-2000	4500-Cl D-2011
4500-Cl E-2000	4500-Cl E-2011
4500-Cl F-2000	4500-Cl F-2011
4500-Cl G-2000	4500-Cl G-2011
4500-CN ⁻ B-1999	4500-CN ⁻ B-2011
4500-CN ⁻ C-1999	4500-CN ⁻ C-2011

Table 1 (Continued)

4500-CN ⁻ D-1999	4500-CN ⁻ D-2011
4500-CN ⁻ E-1999	4500-CN ⁻ E-2011
4500-CN ⁻ F-1999	4500-CN ⁻ F-2011
4500-CN ⁻ G-1999	4500-CN ⁻ G-2011
4500-F ⁻ B-1997	4500-F ⁻ B-2011
4500-F ⁻ C-1997	4500-F ⁻ C-2011
4500-F ⁻ D-1997	4500-F ⁻ D-2011
4500-F ⁻ E-1997	4500-F ⁻ E-2011
4500-H ⁺ -2000	4500-H ⁺ -2011
4500-N _{org} B-1997	4500-N _{org} B-2011
4500-N _{org} C-1997	4500-N _{org} C-2011
4500-N _{org} D-1997	4500-N _{org} D-2011
4500-NH ₃ B-1997	4500-NH ₃ B-2011
4500-NH ₃ C-1997	4500-NH ₃ C-2011
4500-NH ₃ D-1997	4500-NH ₃ D-2011
4500-NH ₃ E-1997	4500-NH ₃ E-2011
4500-NH ₃ F-1997	4500-NH ₃ F-2011
4500-NH ₃ G-1997	4500-NH ₃ G-2011
4500-NH ₃ H-1997	4500-NH ₃ H-2011
4500-NO ₃ ⁻ D-2000	4500-NO ₃ ⁻ D-2011
4500-NO ₃ ⁻ E-2000	4500-NO ₃ ⁻ E-2011
4500-NO ₃ ⁻ F-2000	4500-NO ₃ ⁻ F-2011
4500-NO ₃ ⁻ H-2000	4500-NO ₃ ⁻ H-2011
4500NO ₂ ⁻ B-2000	4500NO ₂ ⁻ B-2011
4500-O B-2001	4500-O B-2011
4500-O C-2001	4500-O C-2011
4500-O D-2001	4500-O D-2011
4500-O E-2001	4500-O E-2011
4500-O F-2001	4500-O F-2011
4500-O G-2001	4500-O G-2011
4500-P B(5)-1999	4500-P B(5)-2011
4500-P E-1999	4500-P E-2011
4500-P F-1999	4500-P F-2011
4500-P G-1999	4500-P G-2011
4500-P H-1999	4500-P H-2011
4500-SiO ₂ C-1997	4500-SiO ₂ C-2011
4500-SiO ₂ E-1997	4500-SiO ₂ E-2011
4500-SiO ₂ F-1997	4500-SiO ₂ F-2011
4500-SO ₄ ²⁻ C-1997	4500-SO ₄ ²⁻ C-2011

Table 1 (Continued)

4500-SO ₄ ²⁻ D-1997	4500-SO ₄ ²⁻ D-2011
4500-SO ₄ ²⁻ E-1997	4500-SO ₄ ²⁻ E-2011
4500-SO ₄ ²⁻ F-1997	4500-SO ₄ ²⁻ F-2011
4500-SO ₄ ²⁻ G-1997	4500-SO ₄ ²⁻ G-2011
4500-S ²⁻ B-2000	4500-S ²⁻ B-2011
4500-S ²⁻ C-2000	4500-S ²⁻ C-2011
4500-S ²⁻ D-2000	4500-S ²⁻ D-2011
4500-S ²⁻ F-2000	4500-S ²⁻ F-2011
4500-S ²⁻ G-2000	4500-S ²⁻ G-2011
4500-SO ₃ ²⁻ B-2000	4500-SO ₃ ²⁻ B-2011
5210 B-2001	5210 B-2011
5220 B-1997	5220 B-2011
5220 C-1997	5220 C-2011
5220 D-1997	5220 D-2011
5310 B-2000	5310 B-2011
5310 C-2000	5310 C-2011
5310 D-2000	5310 D-2011
5520 B-2001	5520 B-2011
5520 F-2001	5520 F-2011
5540 C-2000	5540 C-2011
6200 B-1997	6200 B-2011
6200 C-1997	6200 B-2011

For a method that is approved in more than one edition of a compendium an analyst must, at a minimum, follow the QA/QC in that edition. To improve consistency and ensure reliable results, laboratories are encouraged to phase-in and adopt the QA/QC procedures specified in the most recent, approved editions of that compendium.

We appreciate your interest in the development of environmental monitoring methods. If you have any questions regarding the review of these alternate test procedures, please contact me by e-mail at: walker.lemuel@epa.gov or by telephone at: 202-566-1077.

Sincerely,



Lemuel Walker

ATP Coordinator

Engineering and Analysis Division (4303 T)

Engineering and Analytical Support Branch