

Permit

# Los Alamos

NATIONAL LABORATORY

Los Alamos National Laboratory  
Los Alamos, New Mexico 87545

Date: September 8, 1999  
In Reply Refer To: ESH-18/WQ&H:99-0350  
Mail Stop: K497  
Telephone: (505) 665-1859

LANL (TA 50) (NPDES)

RECEIVED

SEP 10 1999

DOE OVERSIGHT BUREAU

Ms. Diana McDonald  
U.S. Environmental Protection Agency, Region 6  
Compliance Assurance and Enforcement Division  
Water Enforcement Branch (6EN-W)  
1445 Ross Avenue  
Dallas, Texas 75202-2733

**SUBJECT: REVISED DISCHARGE MONITORING REPORT (DMR) FOR OUTFALL 051 FOR JUNE 1999, NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT NO. NM0028355**

Dear Ms. McDonald:

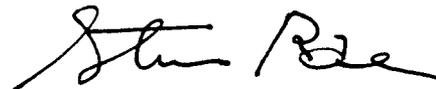
Enclosed is Los Alamos National Laboratory's revised DMR for Outfall 051, for June, 1999. The DMR submitted on July 28, 1999 did not include sample data for a sample collected on June 21, 1999. The June 21, 1999, sample was placed in the wrong refrigerator by laboratory personnel and it was not analyzed until after the reporting period.

Additionally, the revised DMR for June, 1999, includes changes in the "Frequency of Analysis" field (4 to 5) for the following parameters: Chemical Oxygen Demand, Total Cadmium, Total Chromium, Total Copper, Total Iron, Total Lead, Total Nickel, and Total Zinc. The numerical results from this additional sample did not require changes to the revised DMR except for Total Zinc and Chemical Oxygen Demand. These results are also reflected in the revised DMR. Holding times were missed for Total Suspended Solids and Total Mercury, therefore, results for these two parameters are not included in the revised DMR.

There was one effluent limitation exceeded for Total Zinc. The average mass loading NPDES limit of 0.66 lbs/day exceeded the average NPDES Permit limit of 0.62 lbs/day.

Please contact me at (505) 665-1859 or Mike Saladen at (505) 665-6085 if you need any additional information.

Sincerely,



Steven R. Rae  
Group Leader, ESH-18  
Water Quality and Hydrology Group



15801

LANL / Non - HSWA Regulatory / NPDES

Ms. Diana McDonald  
WQ&H/ESH:99-0350

- 2 -

September 8, 1999

SR:CJ/rm

Enclosures: a/s

Cy: J. Davis, NMED/SWQB, Santa Fe, New Mexico, w/enc.  
J. Parker, NMED/AIP, Santa Fe, New Mexico, w/enc.  
C. Soden, DOE/AL, Albuquerque, New Mexico, w/enc.  
T. Gunderson, DIR, w/enc., MS A100  
J. Vozella, DOE/LAAO, w/enc., MS A316  
D. Erickson, LANL, ESH-DO, w/enc., MS K491  
S. Hanson, FWO-RLW, w/enc., MS E518  
D. Moss, FWO-RLW, w/enc., MS E518  
C. Jacquez, ESH-18, w/enc., MS K497  
M. Saladen, ESH-18, w/enc., MS K497  
WQ&H File, w/enc., MS K497  
CIC-10, w/enc., MS A150

# INDUSTRIAL WASTE DEVIATIONS

JUNE, 1999

<u>EPA ID</u>	<u>TECH AREA LOCATION</u>	<u>DATE</u>	<u>PARAMETER</u>	<u>RESULTS/LIMIT</u>	<u>UNITS</u>
051	TA-50-1	6/1/99-6/30/99	Zn(daily avg.)	0.66/0.62	lbs/day

University of California  
Los Alamos National Laboratory  
Los Alamos, New Mexico 87545

**SUBJECT: NONCOMPLIANCE WITH EFFLUENT LIMITATION  
IN NPDES PERMIT NM0028355**

**1. Location of noncompliant discharge**

Serial 051                      TA-50-1

**2. Description of noncompliant discharge**

The average mass loading of 0.66 lbs./day exceeded the daily average permit limit of 0.62 lbs./day for Total Zinc.

**3. Impact upon the receiving waters**

Outfall 051 discharges into a tributary to Mortandad Canyon. Mortandad Canyon is an ephemeral tributary to the Rio Grande. No adverse environmental impacts were observed.

**4. Cause of noncompliance**

The Laboratory's TA-50 Radioactive Liquid Wastewater Treatment Facility (TA-50 RLWTF) uses zinc in its Chemical Denitrification Treatment Process to meet New Mexico Groundwater Standards for nitrate. Additionally, the TA-50 RLWTF uses Tubular Ultra-Filtration and Reverse Osmosis (R/O) Treatment to meet NPDES Permit limits, and U. S. Department of Energy, Derived Concentration Guidelines for radioactive elements. Reject wastewater from R/O treatment unit is currently blended back into the headworks of TA-50 RLWTF. As a result, zinc is continually re-circulated through the TA-50 RLWTF and concentrated in the R/O wastewater.

**5. Anticipated time of condition if applicable**

The condition was discovered during compliance monitoring at Outfall 051 at 2:20 p. m. on June 21, 1999.

**6. Duration of condition if uncorrected**

The estimated duration of non-compliance was approximately 25 minutes on June 21, 1999.

## **7. Steps taken to reduce and eliminate condition**

An occurrence investigation was conducted by the Laboratory's Occurrence Investigation Group (ESH-7), Water Quality & Hydrology Group (ESH-18), Analytical Chemistry Group (CST-9), Radioactive Liquid Wastewater Group (FWO-RLW), and the U. S. Department of Energy, Los Alamos Area Office (DOE/LAAO) personnel on August 12, 1999, to discuss findings and corrective actions. The zinc results were validated by an outside contractor. The TA-50 RLWTF does not currently have a Mechanical Evaporator on-line to treat the R/O reject stream. Therefore, zinc has been concentrating in the facility's wastewater because the R/O reject water was being re-circulated through the TA-50 RLWTF. As an interim measure, the clarifiers at TA-50 RLWTF were put back on line on August 10, 1999, to precipitate out the zinc. Additionally, the facility operators are investigating the use of operational sampling equipment to test for zinc, prior to discharge from the effluent tanks.

## **8. Steps taken to prevent a recurrence of the condition**

Listed below are the long term corrective actions at the TA-50 RLWTF to improve effluent quality and to avoid future zinc exceedances:

- Installation of the Electrodialysis Reversal (EDR) Treatment Unit is estimated by October, 1999. The EDR further concentrates the reject stream from the R/O unit.
- The project schedule for the installation and start-up of the Mechanical Evaporator for the TA-50 RLWTF is February 28, 2000. The condensate stream from the Mechanical Evaporator will be piped to RLWTF effluent tanks for eventual discharge to Outfall 051 or future reuse under the RLWTF's Zero Liquid Discharge Project. As currently proposed, the bottoms waste stream from the mechanical evaporator will be shipped to an off-site contractor for solidification and disposal.

## **9. 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.

PERMIT NAME/ADDRESS (Include Facility Name/Location if Different)  
 NAME UNIVERSITY OF CALIFORNIA  
 LOS ALAMOS NATIONAL LABORATORY  
 ADDRESS PO BOX 1663; MAIL STOP K490  
 LOS ALAMOS, NM 87545

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
 DISCHARGE MONITORING REPORT (DMR)

(2-16) NM0028355 (17-19) 051 A  
 PERMIT NUMBER DISCHARGE NUMBER

Revised: Sept. 3, 1999

SR

MAJOR  
 F - FINAL

INDUST. WASTE TREATMENT DISCHARGE  
 \*\*\* NO DISCHARGE \*\*\*

FACILITY  
 LOCATION Outfall Owner: S. Hanson

MONITORING PERIOD					
YEAR	MO	DAY	YEAR	MO	DAY
99	06	01	99	06	30
(20-21) (22-23) (24-25)			(26-27) (28-29) (30-31)		

NOTE: Read instructions before completing this form.

PARAMETER (32-37)	SAMPLE MEASUREMENT PERMIT REQUIREMENT	3 Card Only) QUANTITY OR LOADING			4 Card Only) QUANTITY OR CONCENTRATION				NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS			
CHEMICAL OXY. DEMAND 00340 1 0 1		3-4 94 DAILY AVG	3-10 156 DAILY MAX	LB/DY	*****	16-24 125 DAILY AVG	55-19 125 DAILY MAX	MG/L	0	04/30 05 01/07	GRAB GRAB
PH 00400 1 0 0		*****	*****	*****	6.2 6.0 MINIMUM	*****	8.2 9.0 MAXIMUM	SU	0	99/99 99/99	REC REC
TOTAL SUSP. SOLIDS 00530 1 0 0		0.3 18.8 DAILY AVG	0.5 62.6 DAILY MAX	LB/DY	*****	*****	*****	*****	0	04/30 01/07	GRAB GRAB
TOTAL NITROGEN 00600 1 0 1		*****	*****	*****	*****	11.2 REPORT DAILY AVG	11.2 REPORT DAILY MAX	MG/L	0	01/30 01/30	GRAB GRAB
AMMONIA (AS N) 00610 1 0 0		*****	*****	*****	*****	7.4 REPORT DAILY AVG	7.4 REPORT DAILY MAX	MG/L	0	01/30 01/30	GRAB GRAB
NITRATE-NITRITE AS N 00630 1 0 1		*****	*****	*****	*****	5.0 REPORT DAILY AVG	5.0 REPORT DAILY MAX	MG/L	0	01/30 01/30	GRAB GRAB
TOTAL CADMIUM 01027 1 0 1		0.00 0.06 DAILY AVG	0.00 0.30 DAILY MAX	LB/DY	*****	0.0 0.2 DAILY AVG	0.0 0.2 DAILY MAX	MG/L	0	04/30 05 01/07	GRAB GRAB
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	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.							TELEPHONE		DATE	
Steven R. Rae ESH-18 GROUP LEADER	 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT							505 665-0453		99 7 28	
TYPED OR PRINTED								AREA CODE	NUMBER	YEAR	MO
COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)											

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)  
 NAME UNIVERSITY OF CALIFORNIA  
 LOS ALAMOS NATIONAL LABORATORY  
 ADDRESS PO BOX 1663; MAIL STOP K490  
 LOS ALAMOS, NM 87545

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
 DISCHARGE MONITORING REPORT (DMR)

Revised: Sept. 3, 1999  


(2-16)  
 NM0028355  
 PERMIT NUMBER

(17-19)  
 051 A  
 DISCHARGE NUMBER

MAJOR  
 F - FINAL

FACILITY  
 LOCATION Outfall Owner: S. Hanson

MONITORING PERIOD					
YEAR	MO	DAY	YEAR	MO	DAY
99	06	01	99	06	30
(20-21) (22-23) (24-25)			(26-27) (28-29) (30-31)		

INDUST. WASTE TREATMENT DISCHARGE  
 \*\*\* NO DISCHARGE \*\*\*

NOTE: Read instructions before completing this form.

PARAMETER (32-37)	3 Card Only (46-53)	QUANTITY OR LOADING (54-61)			4 Card Only (38-45)	QUANTITY OR CONCENTRATION (46-53) (54-61)			NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		AVERAGE	MAXIMUM	UNITS		MINIMUM	AVERAGE	MAXIMUM			
TOTAL CHROMIUM 01034 1 0 1	SAMPLE MEASUREMENT PERMIT REQUIREMENT	0.00 0.19 DAILY AVG	0.00 0.38 DAILY MAX	LB/DY	***** *****	0.0 5.1 DAILY AVG	0.0 5.1 DAILY MAX	MG/L	0	<del>04/30</del> 05 01/07	GRAB
TOTAL COPPER 01042 1 0 1	SAMPLE MEASUREMENT PERMIT REQUIREMENT	0.01 0.63 DAILY AVG	0.02 0.63 DAILY MAX	LB/DY	***** *****	0.1 1.6 DAILY AVG	0.1 1.6 DAILY MAX	MG/L	0	<del>04/30</del> 05 01/07	GRAB
TOTAL IRON 01045 1 0 0	SAMPLE MEASUREMENT PERMIT REQUIREMENT	0.0 1.0 DAILY AVG	0.0 2.0 DAILY MAX	LB/DY	***** *****	***** *****	***** *****	*****	0	<del>04/30</del> 05 01/07	GRAB
TOTAL LEAD 01051 1 0 1	SAMPLE MEASUREMENT PERMIT REQUIREMENT	0.00 0.06 DAILY AVG	0.00 0.15 DAILY MAX	LB/DY	***** *****	0.0 0.4 DAILY AVG	0.0 0.4 DAILY MAX	MG/L	0	<del>04/30</del> 05 01/07	GRAB
TOTAL NICKEL 01067 1 0 1	SAMPLE MEASUREMENT PERMIT REQUIREMENT	***** *****	***** *****	*****	***** *****	0.2 REPORT DAILY AVG	0.3 REPORT DAILY MAX	MG/L	0	<del>04/30</del> 05 01/07	GRAB
TOTAL ZINC 01092 1 0 1	SAMPLE MEASUREMENT PERMIT REQUIREMENT	<del>0.40</del> 0.66 0.62 DAILY AVG	<del>0.69</del> 1.71 1.83 DAILY MAX	LB/DY	***** *****	<del>2.3</del> 3.8 95.4 DAILY AVG	<del>4.0</del> 9.9 95.4 DAILY MAX	MG/L	0	<del>04/30</del> 05 01/07	GRAB
RADIUM-226 + 228 11503 1 0 1	SAMPLE MEASUREMENT PERMIT REQUIREMENT	***** *****	***** *****	*****	***** *****	1.0 30.0 DAILY AVG	1.0 30.0 DAILY MAX	PC/L	0	01/30 01/30	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  Steven R. Rae ESH-18 GROUP LEADER	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.	 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE	DATE			
			505 665-0453	99	7	28	
TYPED OR PRINTED			AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

PERMIT NAME ADDRESS (Include Facility Name/Location if Different)  
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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
 DISCHARGE MONITORING REPORT (DMR)

(2-16) NMO028355 PERMIT NUMBER  
 (17-19) 051 A DISCHARGE NUMBER

MAJOR  
 F - FINAL

FACILITY LOCATION  
 Outfall Owner: S. Hanson

MONITORING PERIOD  
 FROM YEAR 99 MO 06 DAY 01 TO YEAR 99 MO 06 DAY 30  
 (20-21) (22-23) (24-25) (26-27) (28-29) (30-31)

INDUST. WASTE TREATMENT DISCHARGE  
 \*\*\* NO DISCHARGE \*\*\*

NOTE: Read instructions before completing this form.

PARAMETER (32-37)	SAMPLE MEASUREMENT PERMIT REQUIREMENT	3 Card Only QUANTITY OR LOADING (46-53)			4 Card Only QUANTITY OR CONCENTRATION (38-45) (46-53) (54-61)				NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
FLOW 50050 1 0 0		0.0246	0.0418	MGD	*****	*****	*****	*****		99/99	REC
		REPORT DAILY AVG	REPORT DAILY MAX		*****	*****	*****			99/99	REC
TOTAL MERCURY 71900 1 0 1		0.000	0.00	LB/DY	*****	0.00	0.00	MG/L	0	04/30	GRAB
		0.003	0.09		*****	0.01	0.01			01/07	GRAB
		REPORT DAILY AVG	REPORT DAILY MAX			DAILY AVG	DAILY MAX				
TOTAL TOXIC ORGANICS 78141 1 0 1		*****	*****	*****	*****	0.0	0.0	MG/L	0	01/30	GRAB
		*****	*****		*****	1.0	1.0			01/30	GRAB
						DAILY AVG	DAILY MAX				

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  
 Steven R. Rae  
 ESH-18 GROUP LEADER  
 TYPED OR PRINTED

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.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT  


TELEPHONE DATE  
 505 665-0453 99 7 28  
 AREA CODE NUMBER YEAR MO DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)  
 Sample data for 1,1,1-Trichloroethane, Chloroform, Tetrachloroethane, 4'4-DDT were qualified as estimated (J) and Methylene Chloride was qualified as undetected (UJ) estimated by Laboratory QA/QC Review. (RR)