

TA-50

James



Risk Reduction & Environmental Stewardship Division
Water Quality & Hydrology Group (RRES-WQH)
PO Box 1663, MS K497
Los Alamos, New Mexico 87545
(505) 667-7969/Fax: (505) 665-9344

Date: July 25, 2002
Refer to: RRES-WQH: 02-279

TA-50 RLWTF, Mortandad Canyon, groundwaters

Mr. Curt Frischkorn
Ground Water Pollution Prevention Section
Ground Water Quality Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, New Mexico 87502

**SUBJECT: GROUND WATER DISCHARGE PLAN (DP-1132), QUARTERLY REPORT,
SECOND QUARTER 2002**

Dear Mr. Frischkorn:

This letter and the enclosed attachments are intended to serve as Los Alamos National Laboratory's quarterly Ground Water Discharge Plan (DP-1132) report for the Radioactive Liquid Waste Treatment Facility (RLWTF) at TA-50 for the period April 1 through June 30, 2002. Since the first quarter of 1999, Los Alamos National Laboratory has provided your agency with voluntary quarterly reports containing analytical results from effluent and ground water monitoring.

Attachment 1.0, Table 1.0, presents the analytical results from sampling conducted at the Laboratory's Mortandad Canyon alluvial monitoring wells. All of the analytical results from MCO-3, MCO-5, MCO-6, and MCO-7 were below New Mexico Water Quality Control Commission (NM WQCC) Regulation 3103 standards for nitrate/nitrite (NO₃/NO₂-N), fluoride (F), and total dissolved solids (TDS). Alluvial well MCO-5 was substituted for well MCO-4B during this quarter because MCO-4B has not had sufficient water for sampling since May 2001. MCO-4B will be sampled next quarter if sufficient water is present. MCO-5 is adjacent to TW-8 and approximately 1500 feet down gradient from MCO-4B.

In January 2002, you asked the Laboratory to add perchlorate (ClO₄) monitoring to the quarterly sampling conducted at Mortandad Canyon alluvial wells MCO-3, MCO-4B, MCO-6, and MCO-7 (letter, Curt Frischkorn, NMED, to Bob Beers, LANL, January 16, 2002). Per your request, perchlorate (ClO₄) results from sampling conducted at MCO-3, MCO-5 (substituted this quarter for MCO-4B), MCO-6, and MCO-7 are 36.9 ppb, 99.8 ppb, 96.2 ppb, and 137 ppb, respectively. These results have also been summarized in Attachment 1.0, Table 1.0.



Attachment 2.0, Table 2.0, presents the analytical results from weekly monitoring of the RLWTF's effluent holding tank. The weekly samples are flow-proportioned composite samples prepared from each batch of effluent generated by the RLWTF during a 7-day period. All sample results shown for the first quarter were below NM WQCC Regulation 3103 standards for nitrate/nitrite (NO₃/NO₂-N), fluoride (F), and total dissolved solids (TDS). The quarterly average for nitrate/nitrite (NO₃/NO₂-N) in the RLWTF's effluent was 3.23 mg/L. General Engineering Laboratories, Charleston, SC, performed all analyses.

In addition to weekly composite sampling, the RLWTF also conducts operational screening for nitrates (NO₃-N) in each batch of effluent. All first quarter samples were analyzed by ion chromatography (IC); the HACH™ test kit previously used was replaced by the IC method in November 2001. No screening samples were collected in February 2002 due to a plug in the sample collection line. Operational screening of effluent samples collected during January and March 2002 produced the following maximum, minimum, and average results for nitrate (NO₃-N), respectively: 3.5 mg/L, 0.2 mg/L, and 1.11 mg/L.

On March 26, 2002, the RLWTF began operating the Ion Exchange (IX) columns for perchlorate removal. On that day, approximately 2,000 gallons of treated water was processed through the IX columns; the concentration of perchlorate in was 230 ppb and the concentration of perchlorate out was <4 ppb (Method Detection Limit=1 ppb, Reporting Limit=4 ppb). Perchlorate concentrations in the RLWTF's effluent will be reported to your agency each month by copy of the Laboratory's DCG (Derived Concentration Guides) Report submitted to the Department of Energy.

Please contact me at 667-7969 if you would like additional information regarding this quarterly report.

Sincerely,

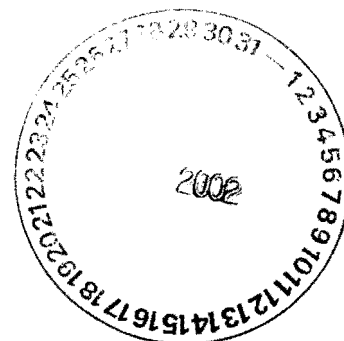


Bob Beers
Water Quality & Hydrology Group

BB/tml

Attachments: a/s

- Cy: W. Strickley, USEPA, Region 6, Dallas, Texas, w/att.
J. Bearzi, NMED-HRMB, Santa Fe, New Mexico, w/att.
J. Davis, NMED-SWQB, Santa Fe, New Mexico, w/att.
J. Parker, NMED/DOE/OB, Santa Fe, New Mexico, w/att.
R. Ford-Schmid, NMED/DOE/OB, Santa Fe, New Mexico, w/att.
J. Vozella, DOE/OLASO, w/att., MS A316
G. Turner, DOE/OLASO, w/att., MS A316
J. Holt, ADO, w/att., MS A104
B. Stine, ADO, w/att., MS A104



Cy (continued):

T. Stanford, FWO-DO, w/att., MS K492
D. McClain, FWO-WFM, w/att., MS J593
R. Alexander, FWO-WFM, w/att., MS E518
D. Moss, FWO-WFM, w/att., MS E518
P. Worland, FWO-WFM, w/att., MS E518
B. Ramsey, RRES-DO, w/att., MS J591
K. Hargis, RRES-DO, w/att., MS J591
D. Stavert, RRES-DO, w/att., MS J978
S. Rae, RRES-WQH, w/att., MS K497
D. Rogers, RRES-WQH, w/att., MS K497
M. Saladen, RRES-WQH, w/att., MS K497
RRES-WQH File, w/att., MS K497
IM-5, w/att., MS A150

Table 1.0. Mortandad Canyon Alluvial Monitoring Wells Analytical Results, 1st Quarter, 2002.

Sampling Location	Sample Date	Perchlorate (ug/L)	NO3/NO2-N (mg/L)	TKN (mg/L)	NH3-N (mg/L)	TDS (mg/L)	F (mg/L)
MCO-3	3/28/02	78.4	7.70	0.390	<0.0235	417	0.612
MCO-4B	NS	NS	NS	NS	NS	NS	NS
MCO-6	4/8/02 ¹	83.2	2.78	0.310	<0.0235	346	1.31
MCO-7	3/27/02	128	4.90	0.240	<0.0235	337	1.34
<i>NM WQCC 3103. Ground Water Standards (mg/L)</i>			<i>10.0</i>			<i>1000</i>	<i>1.6</i>

Notes:

¹Problems during the installation of a new bladder pump at this well delayed sampling into the 2nd quarter.

NS means that no sample was collected at this well because there was not sufficient water in the well.

All analyses by General Engineering Laboratories, Charleston, SC.

Table 2.0. RLWTF Weekly Effluent Monitoring Analytical Results, 1st Quarter, 2002.

Monitoring Period	Sample Date	RLWTF Weekly Effluent Monitoring Analytical Results (mg/L)		
		NO3/NO2 (as-N)	Fluoride	TDS
JANUARY	1/2/02	1.28	0.44	146
	1/9/02	1.77	0.85	392
	1/14/02	2.71	1.22	768
	1/22/02	4.20	1.17	751
	1/29/02	7.95	1.07	784
FEBRUARY	2/5/02	4.20	0.98	716
	2/12/02	2.39	0.48	359
	2/19/02	1.84	0.42	243
	2/26/02	3.45	0.60	322
MARCH	3/6/02	2.95	0.61	313
	3/12/02	2.56	0.558	292
	3/18/02	3.51	0.434	270
	3/29/02	pending ¹	pending ¹	pending ¹
1st Quarter Averages (mg/L)		3.23	0.74	446
<i>NM WQCC 3103. Ground Water Standards (mg/L)</i>		<i>10.0</i>	<i>1.6</i>	<i>1000</i>

Notes:

¹Results for these analyses are pending and will be reported in the 2nd Quarter DP-1132 Report.