



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

August 25, 1994

Ina B. Alterman, Senior Staff Officer
Board on Radioactive Waste Management
Commission on Geosciences, Environment,
and Resources
National Research Council
2001 Wisconsin Avenue, NW
Washington, DC 20007

Dear Ms. Alterman:

I am responding to your letter of July 29, 1994, in which you requested technical and operational data concerning the low-level radioactive waste disposal facility located near Beatty, Nevada. In 1972, the U.S. Atomic Energy Commission (AEC) (now the U.S. Nuclear Regulatory Commission) transferred the primary responsibility of licensing and regulating activities at the site to the State of Nevada. Under this agreement, the State of Nevada regulated possession and disposal of source and byproduct material, while AEC regulated possession and disposal of special nuclear material (SNM). The NRC continued to license disposal of SNM until 1977, at which time the NRC license was terminated. Currently, the site is closed and all activities at the site are regulated by the State of Nevada. Because the State of Nevada has the regulatory authority for this site, NRC does not receive the documents you have requested. A search of our files did identify a letter from the State of Nevada, Department of Human Resources, to U.S. Ecology, the site licensee, concerning a violation related to the reporting of ground water monitoring results. This letter and enclosures were provided to Paul Lohaus by California Department of Health Services consultant staff at the July 7-8, 1994, NAS Committee Meeting. The best copy available of this letter, and enclosures is enclosed. However, I recommend that you contact the following individual for the specific information you requested in your letter:

Mr. John Vaden, Supervisor
Radiological Health Section
Division of Health
Department of Human Resources
State of Nevada
505 East King
Carson City, Nevada 89710
(702) 687-5394

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 Radiological Health Section
 Division of Health
 Department of Human Resources
 State of Nevada
 505 East King
 Carson City, Nevada 89710
 (702) 687-5394

If I can be any further assistance concerning this request, please call me at (301) 415-7437 or Bob Nelson of my staff at (301) 415-6697.

Sincerely,

Malcolm R. Knapp, Director
 Division of Waste Management
 Office of Nuclear Material Safety
 and Safeguards

cc: J. Vaden

TICKET: D-94-069

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Ms. Ina B. Alterman

-2-

If I can be any further assistance concerning this request, please call me at (301) 415-7437 or Bob Nelson of my staff at (301) 415-6697.

Sincerely,
ORIGINAL SIGNED BY
John T. Greeves

for

Malcolm R. Knapp, Director
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

Enclosure: As stated

cc: J. Vaden

TICKET: D-94-069

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NAME	RNelson		JAustin	<i>M</i>	PLohaus	<i>M</i>	<i>J</i>			
DATE	8/08/94	H	8/09/94	H	8/22/94	H	8/23/94			1 / 94

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STATE OF NEVADA
DEPARTMENT OF HUMAN RESOURCES

HEALTH DIVISION

505 East King Street
Carson City, Nevada 89710

RICHARD M. BRYAN
Governor

S. BARTON JACKA
Director

November 21, 1984

J.J. Scoville, President
U.S. Ecology
P.O. Box 7246
Louisville, Kentucky 40207

Dear Mr. Scoville:

This refers to an inspection by Mr. Larry Franks of this office on November 8, 1984, of the program authorized by Nevada Radioactive Material License No. 13-11-0043-02.

The inspection was an examination of the activities conducted under the license issued to U.S. Ecology as they relate to compliance with Nevada's Regulations for Radiation Control and the condition of the license. The inspection consisted of selective examinations of procedures and representative records, interviews with personnel and observations by the inspector.

As a result of the inspection, the following violation was identified:

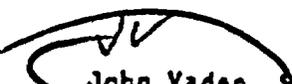
A. License Condition 21 states that except as specifically provided otherwise by the license, the licensees shall possess and use license materials in accordance with ~~four documents submitted with the application for the license.~~

1. One of the documents listed in Condition 21 is the "Site Operational Manual for Low level Radioactive Waste Disposal at Beatty, Nevada". In that manual procedure BN008, Section 9.1 states that when the concentrations of radioactive material in water samples are found to be above action levels (30 picocuries per liter for alpha and 90 picocuries per liter for beta) the Division will be notified.

Contrary to the above requirement, during this inspection it was learned that the company had been notified on October 18, 1984 of analyses of two water samples that had radioactive materials in concentrations above the action levels and the Division had not been notified. |||

We request that you notify this office in writing within twenty (20) days of the actions that will be taken to correct the above violation; the date when the corrective actions will be completed; and the methods that will be instituted to prevent recurrence of this violation.

Sincerely,


John Vaden, Supervisor
Radiological Health Section

atest results on file

11 results for these three calendar quarters have been received and are on file. Report times vary from four to seven weeks.

action levels within limits

11 results were under the action limits as stated in procedure BN 008 of the site operations manual.

lots of data for each sample

Procedure BN 008 of the site operations manual requires the results to be plotted for each sample location. All results were plotted as required.

Other environmental sampling

Four non-routine soil samples were collected on 9/8/86. Dave Irvin, the site R.S.O., said these samples were taken as a result of the 9/5/86 incident in which a D-8 Caterpillar tore open four buried drums during burial operations. Two samples were taken downwind of the scene and two were taken off site in the general downwind direction. All four samples were below action limits.

Site water wells 301 and 302 are sampled monthly. These are non-potable water wells used strictly for environmental analysis. All monthly results on both wells were below action limits. These wells have shown elevated levels of gross alpha and beta, and tritium in the past.

Results on file

11 results of the above non-routine environmental samples were on file. There is no other non-routine sampling during this period.

NOTES

U. S. ECOLOGY

ENVIRONMENTAL MONITORING

Inspector: LF

Date: 5/1/87

Period Reviewed: 7/01/86 TO 3/31/87

(3rd and 4th quarters 1986, and 1st quarter 1987)

Next Review : 04/01/88

Quarterly water samples taken

Three quarterly water samples are taken: the site domestic water well; and at the rest stop in Lathrop Wells.

The sample collection dates were 07/17/86, 10/09/86, and 01/06/87.

Quarterly soil samples taken

Six soil samples are taken each quarter: Lathrop Wells; wash area immediately south of site; west fence; east fence; north fence; and office area.

The sample collection dates were 07/17/86, 10/09/86, and 01/06/87.

Quarterly vegetation samples taken

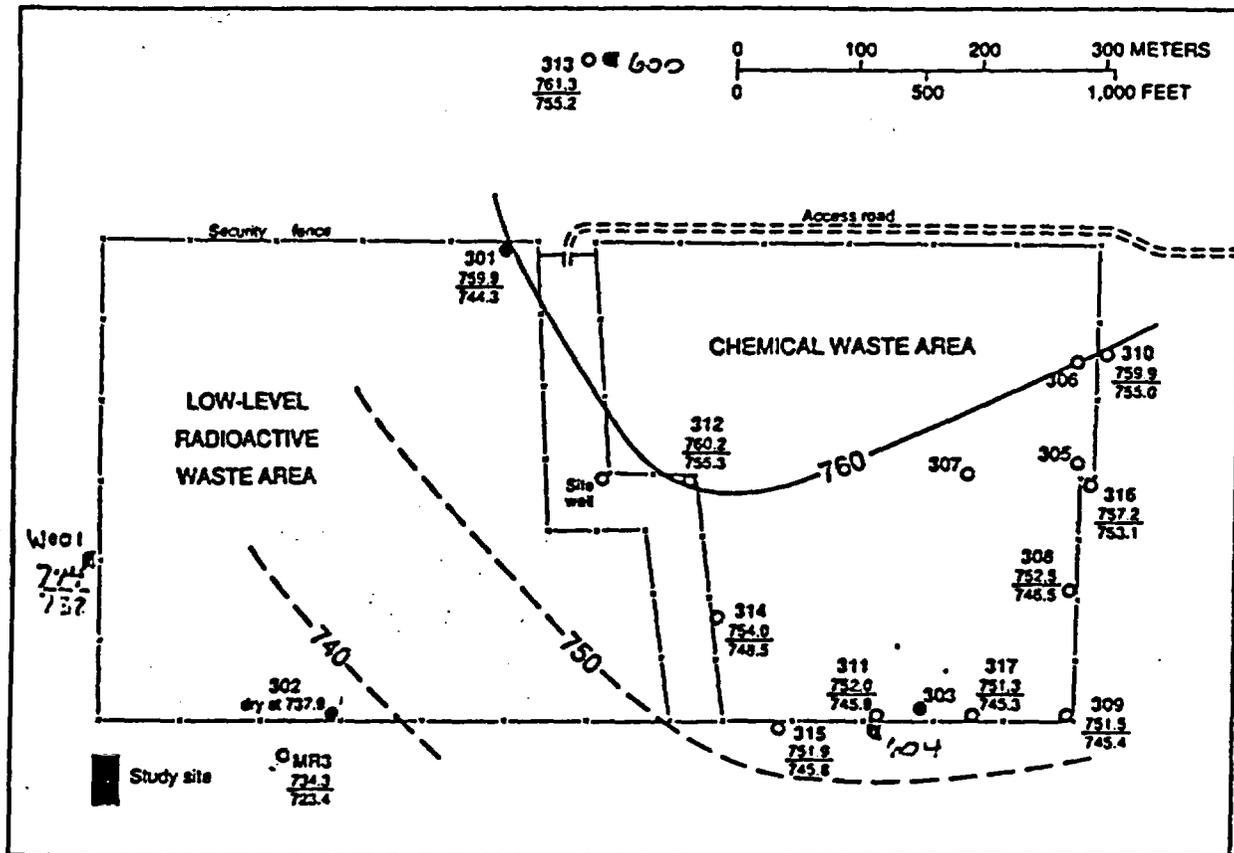
Six vegetation samples are taken each quarter: Lathrop Wells; wash area immediately south of site; west fence; east fence; north fence; and office area. The vegetation samples are taken immediately adjacent to the soil sample locations.

The sample collection dates were 07/17/86, 10/09/86, and 01/06/87.

Quarterly TLD perimeter monitoring

Fourteen stations are monitored quarterly for radiation exposure. The licensee uses both Radiation Detection Company and R.S. Landauer for the TLD analyses. Radiation Detection Co. (Radeco) has been used for years, and Landauer was just started as a back-up and double check against the Radeco. TLD's.

The Landauer TLD results match the Radeco TLD results quite well. Both results show all monitoring stations to be between 20 mrem and 35 mrem per quarter. The action limit for a quarterly TLD is 125 mrem.



Base from US Ecology, Inc., 1990.

EXPLANATION

—750— GROUND-WATER LEVEL CONTOUR — Shows altitude of water levels as determined from monitoring wells. Contour interval is 10 meters. Dashed where approximately located. Datum is sea level

$\frac{761.3}{755.2}$ 313 ○ GROUND-WATER MONITORING WELL — Three-digit numbers and "MR3" are well identifications. Number above line is water-surface altitude, in meters, for December 1988. Number below line is well-bottom altitude, in meters. Datum is sea level. Water level at well MR3 measured by U.S. Geological Survey; all other wells measured by US Ecology, Inc.

FIGURE 3.—Waste-disposal areas showing location of monitoring wells and approximate altitude of ground-water levels in December 1988. Solid circles indicate wells for which geophysical logs are available.

18 New wells drilled during 1990, and water samples collected in December 1992.

Table 4.--Data on ground-water quality near low-level radioactive-waste disposal site, Beatty, Nevada for August, 1989 (Continued). Concentrations of dissolved radionuclides. (Abbreviations are pCi/l = picocuries per liter; ug/l is micrograms per liter; -- means not determined.) Except where noted, analyses are by U.S. Geological Survey Laboratory, Arvada, Colorado.

Well Name	Tritium (pci/l)	Gross Alpha (ug/l as Uranium)	Gross Alpha (pCi/l as Uranium)	Gross Beta (piC/l as Strontium-90)	Gross Beta (piC/l as Cesium-137)	Gamma Scan (piC/l)		
						Potassium-40	Radium-224	Thorium-234
SUPPLY	1.3 ± 1.9	5.3 ± 0.9	5.8 ± 1.0	15.6 ± 2.2	17.4 ± 2.5	--	2.11 ± 0.51	32.5 ± 3.8
MW 313	1.3 ± 1.9	7.9 ± 1.2	8.6 ± 1.3	16.8 ± 2.4	18.6 ± 2.7	--	1.05 ± 0.44	14.8 ± 3.8
MR-3	12.2 ± 1.9 ^a 6.4 ± 1.9	9.2 ± 1.3	10.0 ± 1.5	15.3 ± 2.3	17.2 ± 2.5	53.2 ± 7.8	2.83 ± 0.77	45.6 ± 4.5
MR-3 ^b	--	--	--	--	--	--	--	--
MW 315	1.9 ± 1.9	9.6 ± 1.4	10.5 ± 1.5	14.1 ± 2.1	15.7 ± 2.4	--	2.23 ± 0.52	35.4 ± 4.0
MW 314	2.9 ± 2.6	10.0 ± 1.5	11.0 ± 1.6	13.6 ± 2.2	15.8 ± 2.5	24.0 ± 4.3	3.17 ± 0.63	--
MW 316	2.2 ± 1.9	13.3 ± 1.8	14.6 ± 2.0	17.5 ± 2.5	19.7 ± 2.8	--	1.08 ± 0.46	--

^a Replicate tritium analyses. Suspect above background tritium concentration is caused by remnant drilling fluid even though more than 2,000 gallons were pumped from well prior to sampling.

^b Analyses by Nevada State Health Laboratory (Reno, Nevada) of sample collected by Bert Gray, Nevada State Health Department. Dashes mean constituent not determined.

0.0009

3280

WELL WATER SAMPLING

Beatty Site

<u>Well</u>	<u>Date Sampled</u>	<u>Tritium, pCi/L</u>	<u>Analyzer</u>
301	* 6-28-82	0.0 ± 1,000	Eberline
	* 9-09-82	24,000 ± 1,000	Eberline
	* 10-26-82	<1,000	Teledyne
	* 2-03-83	200 ± 70	Teledyne
	* 3-03-83	<2,000	Teledyne
	3-30-83	<200	EAL
	3-30-83	<200	USGS
	4-07-83	<200	USGS
	7-11-83	<220	EPA
	7-11-83	<200	EAL
	8-02-83	0 ± 200	EAL
	8-22-83	500	CEP
	9-02-83	500	CEP
	9-30-83	500	CEP
	10-27-83	300 ± 200	EAL
	11-30-83	<200	EAL
	12-21-83	0 ± 200	EAL
1-26-84	0 ± 200	EAL	
302	* 10-26-82	410,000 ± 10,000	Eberline
	* 2-03-83	48,900 ± 3,000	Teledyne
	* 3-03-83	65,200 ± 6,520	Teledyne
	3-11-83	50,100	EPA
	3-30-83	30,700	USGS
	3-30-83	31,000	USGS
	4-07-83	30,000	USGS
	5-03-82	46,700	EPA
	5-03-83	47,000 ± 2,000	EAL
	6-03-83	13,000 ± 600	EAL
	6-29-83	11,000 ± 600	EAL
	7-11-83	10,000	EPA
	7-11-83	18,200 ± 900	EAL
	8-02-83	13,200 ± 700	EAL
	8-22-83	<500	CEP
	9-30-83	2,800 ± 750	CEP
	10-27-83	5,800 ± 300	EAL
	11-30-83	4,200 ± 200	EAL
	12-21-83	3,000 ± 300	EAL
	1-26-84	3,600 ± 200	EAL
3-02-84	2,900 ± 100	EAL	
4-14-84	2,100 ± 200	EAL	
5-31-84	1,600 ± 200	EAL	

April 24, 1985
Well Water Sampling: Beatty
page two

<u>Well</u>	<u>Date Sampled</u>	<u>Tritium, pCi/L</u>	<u>Analyzer</u>
302	6-29-84	1,000 ± 200	EAL
	7-31-84	1,000 ± 200	EAL
	8-30-84	1,400 ± 200	EAL
	9-27-84	800 ± 200	EAL
	10-30-84	500 ± 200	EAL
	11-30-84	300 ± 200	EAL
	12-28-84	500 ± 200	EAL
	1-31-85	0 ± 200	EAL

- Samples collected and analyzed by U.S. Ecology contractor.
Rest of samples collected by State and analyzed by different agencies or contractors.