PDR 40-8697

ROCKY MOUNTAIN ENERGY COMPANY

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January 29, 1980

U.S. NUCLEAR REG. COMMISSION
DOCUMENT CONTROL SECTION

Director of Inspection and Enforcement
U.S. NUCLEAR REGULATORY COMMISSION
Washington, D. C. 20555

Dear Sir:

RE: License No. SUA-1338
Docket No. 40-8697

Pursuant to 10 CFR 40.65, the Rocky Mountain Energy Company-Mono Power Company-Halliburton Company Uranium Partnership is submitting the Semi-Annual Effluent Monitoring Report for the Reno Creek Test Facility.

Well Pattern #1, in operation since January of 1979, has been unsuccessful using sulfuric acid as the lixiviant. The problems encountered have been numerous. Scaling, well plugging and high acid consumption have contributed to poor uranium recovery. Production continued through November 12th, at which time restoration was initiated using a groundwater sweep. By the end of the year, approximately 2-3 pore volumes of clean water had been pumped through the Pattern. Table I summarizes restoration efforts through December 31, 1979.

Pattern #2 has been drilled. Efforts are currently underway to utilize an alkaline leaching solution. Assuming Pattern #1 restoration efforts are successful and all permitting requirements are met, the new well pattern will be started during the summer of 1980.

Environmental data through December of 1979 clearly shows our effort-to-date has not caused an impact in unrestricted areas adjoining the project. Groundwater data, radon gas and air particulates collected at, or correlated to, the unrestricted boundary are within baseline ranges or less than regulatory limits for all tested radionuclides. Therefore, on the basis of the available data, we have concluded that radioactive materials have not been released to unrestricted areas adjoining the test facility.

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Table II shows maximum Radium-226, Thorium-230, natural uranium and total solid particulate values for the report period. All samples were collected with GMW Hi-Vol air samplers. Comparison to 10 CFR 20.103-10, 10 CFR 20.106, and Appendix B, Tables I and II clearly indicate no violation due to airborne particulates.

Table III displays maximum radon gas values collected at the upwind control and downwind restricted area boundaries. Data for TLD area monitors located in upwind and downwind locations are shown in Table IV.

Monitor wells located in each cardinal direction and in the same aquifer as the ore body were sampled bi-weekly to show a possible excursion with resultant groundwater contamination. Monitor wells located in adjacent aquifers above and below the ore body were also sampled bi-weekly to detect vertical excursions. Table V compares control limits to the maximum value observed for the report period.

If additional information is needed, please feel free to contact me.

Very truly yours,

Pat Spieles

Pat Spieles
Environmental Manager

PS/ph

Attachments

cc: USNRC, Office of Inspection & Enforcement, Region IV
R. Hynes
D. Gardner
NRC File
RMEC Environmental Services

TABLE I
RESTORATION EFFORTS - PATTERN #1
RENO CREEK

	Background	Production Solution 11-12-79	Production Solution 12-79-79
ph	7.7-11.2	2.8	2.9
Conductivity µmhos/cm	1400-2000	5400	3500
Sulfate mg/l	700-900	3030	2430
Calcium mg/l	80-120	370	379
Iron mg/l	0.01-3.0	254	117
Vanadium mg/l	0.18-8.0	9.0	<1.0
Uranium mg/l	0.20-1.05	9.8	9.1

TABLE II
RENO CREEK
MAXIMUM OBSERVED AIRBORNE CONCENTRATIONS

Location	TSP *	Ra-226 **	Th-230 **	Natural Uranium **
Upwind Control	97.5	13 ± 10	14 ± 6	18.4
Downwind Boundary	65.0	21 ± 5	29 ± 26	17.0

* Concentrations in micrograms per cubic meter

** Concentrations in microcuries per milliliter x 10^{-16}

TABLE III
MAXIMUM OBSERVED RADON GAS CONCENTRATION
RENO CREEK

Location	Rn-222
Upwind Control	$1.33 \pm 0.87 \times 10^{-9}$ µCi/ml
Downwind Boundary	$0.87 \pm 0.40 \times 10^{-9}$ µCi/ml

TABLE IV
TLD AREA MONITORS (QUARTERLY FREQUENCY)
RENO CREEK

	MREM/WEEK
Control	2.08
Upwind Boundary	2.81
Downwind Boundary	2.57

TABLE V
PATTERN #1 MONITOR WELL WATER QUALITY
MAXIMUM VALUE JULY-DEC. VS (CONTROL LIMIT)
RENO CREEK

	* M-1	* M-2	* M-3	* M-4	** USM-1	*** LSM-1
pH	(6.5) 7.6	(6.5) 7.5	(6.5) 8.5	(6.5) 7.6	(6.5) 7.5	(6.5) 11.3
Conductivity (µmhos/cm)	(1980) 1737	(1952) 1818	(2200) 1850	(2090) 2045	(781) 550	(3080) 3250
U_3O_8 (ppm)	(0.61) 0.06	(0.99) 0.03	(1.21) 0.24	(2.20) 1.74	(1.20) 0.01	(2.20) 0.003
Calcium (ppm)	(200) 140	(131) 120	(124) 110	(218) 126	(26) 22	(223) 168
Sulfate (ppm)	(825) 820	(946) 887	(998) 893	(1048) 995	(65) 15	(675) 169

* Permimeter monitor wells located in each cardinal direction and in the production aquifer

** Located in aquifer above production zone

*** Located in aquifer below production zone