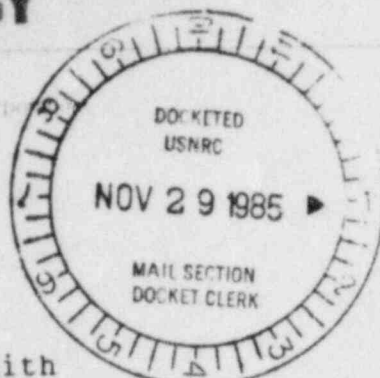


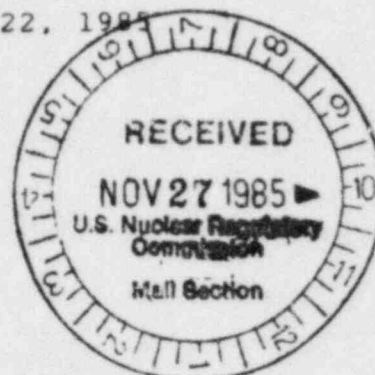


A subsidiary of  
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RETURN ORIGINAL TO PDR, HQ.



November 22, 1985



Mr. R. Dale Smith  
U. S. Nuclear Regulatory Commission  
Uranium Recovery Field Office, Region IV  
Box 25325  
Denver, CO 80225

Dear Mr. Smith:

Re: License SUA-1338, Docket No. 40-8697 (Reno Creek)  
Quarterly Report: Third Quarter 1985

Pursuant to license condition 19, a quarterly report summarizing environmental monitoring and site activities at the Reno Creek project is hereby submitted. This report covers the period of July 1, 1985 through September 30, 1985.

## OPERATIONS

A sulfuric acid in-situ leaching test began on Pattern 1 during February 1979 and was terminated in November 1979, at which time restoration efforts began. The restoration circuits were shut down June 1, 1981.

A second well pattern using a sodium carbonate lixiviant was started in September 1980. Leaching was stopped in December 1980 and restoration efforts were initiated. Restoration activities ceased in April 1981 and, after two years of stabilization, both the DEQ and NRC approved the restoration adequacy for Pattern 2.

## ENVIRONMENTAL MONITORING

### Groundwater

Monthly samples have been taken from Pattern 1 production and monitor wells during the stabilization phase. A final collection was made on September 17, 1985 with both DEQ and NRC personnel. Analyses by Rocky Mountain Energy verifies groundwater stability for a period of several years. Third quarter data, including the September 17 sampling, are shown in Tables 1 and 2.

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FEE EXEMPT

Certified By Mary C. Hood

Mr. R. Dale Smith  
November 22, 1985  
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#### Reservoir

Approximately 1.0 to 1.5 million gallons of solution remained in the Reno Creek reservoir as of September 30, 1985. Written approval to begin sludge/water hauling from Reno Creek to Bear Creek was received from the NRC on September 13, 1985. Pond effluent removal began shortly thereafter and will be completed during the fourth quarter 1985.

#### Radon Gas

Monthly grab samples are collected upwind, downwind, and inside the process building. Results for the quarter are displayed in Table 3.

#### Air Particulates

Radionuclide particulate values for the second quarter are listed in Table 4. High-volume air filters are collected using EPA's six-day schedule. The filters from each site are combined into a quarterly composite. All values reported are significantly less than 10 CFR 20 limits. Third quarter results will be reported on the fourth quarter report.

#### Area Dosimetry

Table 5 shows area TLD badge data for the third quarter. All work areas approximate the control badge.

#### PROPOSED ACTIVITIES

Further R&D work to develop in-situ technology is not currently planned at Reno Creek. Upon receiving concurrence of Pattern 1 restoration adequacy, all pattern wells will be abandoned in accordance with State of Wyoming regulations.

Environmental surveillance, including radon gas, air particulates, and area dosimetry will continue through facility decommissioning.

Mr. R. Dale Smith  
November 22, 1985  
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If you have questions, call me at the Casper office or  
Mike Neumann in our Broomfield office.

Sincerely,

*Michael R. Neumann*

*for* Patrick Spieles  
Facility Superintendent

PRS/asm

Attachments

cc: S. Wastler, NRC

NRC, Document Management Branch

P. Schmitt diel (DEQ, LQD)

T. Mancini (DEQ, WQD)

B. Giurgevich (LQD, District III)

L. W. Hersloff

K. W. Loest

M. R. Neumann

7.12-5

TABLE 1  
RENO CREEK  
GROUNDWATER SAMPLING THIRD QUARTER, 1985  
PATTERN 1

	Sample Date	pH	TDS mg/l	Calcium mg/l	Sulfate mg/l	U <sub>3</sub> O <sub>8</sub> mg/l
M-1	CL*	6.5	2858	286	1606	1.102
	July	8.2	1427	81	786	0.002
	Aug	7.9	1132	114	574	0.005
	Sept	8.1	1505	93	640	0.040
M-2	CL*	6.5	2744	278	1644	1.027
	July	7.9	1250	104	640	0.002
	Aug	7.9	1210	108	660	0.002
	Sept	8.2	1500	105	693	0.060
M-3	CL*	6.5	3104	286	1657	1.750
	July	8.4	1512	91	811	0.070
	Aug	8.4	1500	126	887	0.002
	Sept	8.2	1565	105	834	0.150
M-4	CL*	6.5	3096	304	1783	1.550
	July	8.4	1600	91	853	0.970
	Aug	8.4	1400	126	745	0.979
	Sept	8.5	1666	116	935	1.10
LSM-1	CL*	6.5	994	207	137	1.022
	July	11.2	260	15	30	0.002
	Aug	11.2	264	38	59	0.106
	Sept	--	--	--	--	--
USM-1	CL*	6.5	987	32	137	1.029
	July	7.6	580	15	10	0.002
	Aug	7.6	394	39	14	0.002
	Sept	--	--	--	--	--
P-1	CL*	6.5	2771	267	1673	5.00
	July	6.2	2324	200	1383	0.460
	Aug	6.4	1951	225	1246	0.436
	Sept	5.9	2006	219		0.290
P-2	CL*	6.5	2771	267	1673	5.00
	July	5.7	2439	210	1454	0.329
	Aug	6.1	2221	272	1520	0.225
	Sept	5.5	2589	267	1572	0.220

CL\*- Stabilization Control Limits

TABLE 2  
RENO CREEK PATTERN 1  
QUARTERLY GROUNDWATER ANALYSES  
THIRD QUARTER, 1985

	P-1 5.9	P-2 5.5	M-1 8.1	M-2 8.2	M-3 8.2	M-4 8.5	ISM-1 11.2	USM-1 7.6
pH	1975	2160	1550	1400	1275	1350	555	495
Conductivity	46	40	130	107	96	90	0	445
Bicarbonate	38	33	107	88	79	77	270	365
Alkalinity	219	267	93	105	105	116	58	39
Calcium	16	30	15	11	10	11	11	12
Chloride	79	95	25	20	30	34	6	<1
Magnesium	18	62	11	12	7	8	4	8
Potassium	256	274	269	256	280	285	95	181
Sodium	1246	1572	640	693	834	935	59	14
Sulfate	2006	2589	1505	1500	1565	1666	264	394
TDS	0.008	0.002	0.002	0.002	0.002	0.002	--	--
Arsenic	23	41	<0.1	<0.1	<0.1	<0.1	0.7	1.0
Iron	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--
Selenium	0.044	0.040	<0.001	0.003	0.005	0.004	0.130	<0.01
Vanadium	0.29	0.22	0.04	0.06	0.15	1.10	0.106	0.002
Uranium ( $U_3O_8$ )	201	540	8.7	25	87	65	--	--
Radium-226								

Units in mg/l except pH (standard units), conductivity (umhos/cm) and Radium-226 (pci/l).



TABLE 3  
RENO CREEK  
RADON GAS-THIRD QUARTER, 1985

<u>SITE</u>	<u>JULY</u>	<u>AUG</u>	<u>SEPT</u>
UPWIND BOUNDARY #8*	-0.04 $\pm$ 0.29	-0.17 $\pm$ 0.30	0.05 $\pm$ 0.08
DOWNWIND BOUNDARY #10*	-0.42 $\pm$ 0.48	-0.06 $\pm$ 0.08	0.06 $\pm$ 0.09
PLANT BUILDING INSIDE**	-0.36 $\pm$ 0.38	0.30 $\pm$ 0.32	0.30 $\pm$ 0.75

\* 10 CFR 20 Limit (unrestricted area)  $3.0 \times 10^{-9}$   $\mu\text{Ci/ml}$

\*\* 10 CFR 20 Limit (restricted area)  $3.0 \times 10^{-8}$   $\mu\text{Ci/ml}$

All values reported in  $\mu\text{Ci/ml} \times 10^{-9}$

TABLE 4  
 RADIOMETRIC AIR PARTICULATE  
 RENO CREEK  
 SECOND QUARTER, 1985

-----10 <sup>-16</sup> $\mu$ Ci/ml			
<u>Site</u>	<u>Ra-226</u>	<u>Th-230</u>	<u>Uranium</u>
Upwind (8)**	-0.6 $\pm$ 3.3	0.9 $\pm$ 1.9	12.0
Downwind (10)**	0.9 $\pm$ 4.2	7.4 $\pm$ 3.0	8.9
Plant Building (#9)*	7.3 $\pm$ 6.4	14 $\pm$ 4	25.0
10 CFR 20 Limit* (restricted area)	3 x 10 <sup>-11</sup>	2 x 10 <sup>-12</sup>	7 x 10 <sup>-11</sup>
10 CFR 20 Limit** (unrestricted area)	2 x 10 <sup>-12</sup>	8 x 10 <sup>-14</sup>	3 x 10 <sup>-12</sup>

TABLE 5  
 AREA DOSIMETRY  
 RENO CREEK  
 THIRD QUARTER, 1985

<u>SITE</u>	<u>MREM/QUARTER</u>
Control	17.87
Upwind Boundary (#8)	21.82
Downwind Boundary (#10)	21.29
Pattern 1	24.18
Pattern 2	19.19
Office	19.06
Lab	18.01
Sump	14.46
Plant Building	22.34

\* Dosimetry service performed by Eberline Instrument Corp.  
 Badges are exchanged quarterly