



August 18, 2003

**Smith Ranch - Highland
Uranium Project**
P. O. Box 1210
Glenrock, Wyoming USA 82637
Casper: 307-235-1628
Douglas: 307-358-6541
Fax: 307-358-4533

ATTN: Document Control Desk
Ms. Susan Frant, Chief
Fuel Cycle Licensing Branch, NMSS
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

RE: Smith Ranch Project
NRC License SUA-1548, Docket No. 40-8964
Semi-Annual Effluent and Environmental Monitoring Report, January 1– June 30, 2003

Dear Ms. Frant:

In accordance with 10 CFR 40.65 and License Condition No. 11.1 of License SUA-1548, please find attached the Semi-Annual Effluent and Environmental Monitoring Report for the Smith Ranch Project. This report covers the period January 1 through June 30, 2003. A copy of this report is also being forwarded to Mr. Dwight Chamberlain, Director DRSS, Region IV.

If you have any questions regarding the report, please contact me at (307) 358-6541, ext. 62.

Sincerely,

W.F. Kearney
Manager-Health, Safety
& Environmental Affairs

WFK/sab
Attachment

cc: Mr. Dwight Chamberlain, Director DRSS, Region IV, USNRC
J. Lusher, USNRC Headquarters, (Addressee Only)
R. Knode w/o atta
S.A. Bakken w/o atta
File SR 4.6.4.1 w/atta

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POWER RESOURCES, INC.

SMITH RANCH PROJECT

**SEMI-ANNUAL EFFLUENT AND
ENVIRONMENTAL MONITORING REPORT**

FOR THE PERIOD

JANUARY 1 THROUGH JUNE 30, 2003

USNRC SOURCE MATERIAL LICENSE NO. SUA-1548

DOCKET 40-8964

The Smith Ranch license, specifically License Condition 11.1, describes the required information to be submitted to the NRC for the effluent and environmental monitoring program for the facility. Accordingly, pursuant to 10 CFR §40.65, License Condition 11.1, and the parameters from Table 5.3 from the March 31, 1988, license application as amended, the effluent and monitoring results for this semi-annual period are herein provided.

I. Commercial Operation Data-Injection Rates, Recovery Rates, Pipeline Pressures, and Injection Manifold Pressures

Average injection rates, recovery rates, pipeline pressures, and injection manifold pressures, as required by Condition 11.1, are provided in Tables 1A, 1B, and 1C.

II. Air Sampling

Pursuant to License Condition 11.1 and as defined by Table 5.3, air particulates monitoring is performed by continuous air samplers at the nearest downwind residence (Vollman Ranch), downwind of the restricted area boundary (Fence Line), and an upwind "background" location (Dave's Water Well). Monitoring is conducted quarterly. The results of quarterly monitoring conducted during the report period are presented in Table 2.

III. Water

A. Groundwater

The groundwater monitoring program requires operating livestock or domestic wells within 1 km of operating wellfields be sampled quarterly for natural uranium and radium-226. The Vollman Pond and Smith Pond are within 1 km of Wellfield 1. Smith Windmill #1 is within 1km of Wellfield 4A. Smith Windmill #2 is within 1 km of Wellfield 3. The Solar Pump is within 1 kilometer of Wellfields 2 and 3. The results of quarterly samples from the operating livestock wells are presented in Table 3.

B. Surface Water

The surface water monitoring program requires two (2) samples from Sage Creek and one (1) sample from the outfall of the Treatment Plant. Each is on a quarterly basis. The outfall from the Treatment Plant is not sampled as this facility has not been used for many years. The Sage Creek samples are to be taken upstream and downstream from the restricted areas when flow is available in the creek. During the report period, there was no flow in Sage Creek and therefore, no analytical results are available.

VI. Direct Radiation

Direct radiation readings are measured on a quarterly basis at the three air monitoring stations described above, a site downwind of the evaporation pond, and at each wellfield. Provided in Table 4 are the gamma radiation measurement data collected at these sites during the report period.

TABLE 1A
AVERAGE INJECTION AND RECOVERY RATES (GPM)

MONTH	WF#1 PC FLOW	WF#1 IC FLOW	WF#2 PC FLOW	WF#2 IC FLOW	WF#3 PC FLOW	WF#3 IC FLOW	WF#4 PC FLOW	WF#4 IC FLOW	WF#4A PC FLOW	WF#4A IC FLOW
Jan-03	194.1	187.4	0.0	0.0	2212.6	2208.3	1443.9	1457.0	1512.9	1475.0
Feb-03	168.1	143.8	739.6	725.0	1951.2	2024.6	1402.3	1426.6	1509.1	1471.7
Mar-03	168.5	149.5	872.7	809.7	1727.9	1713.8	1432.3	1457.6	1480.7	1437.9
Apr-03	144.8	130.2	1020.7	991.1	1781.9	1784.9	1434.9	1458.9	1446.1	1387.0
May-03	137.6	125.2	1375.8	1363.6	1668.3	1677.2	1410.6	1439.7	1455.0	1400.5
Jun-03	150.0	111.0	1400.1	1377.3	1669.1	1697.7	1411.0	1374.3	1417.0	1441.2

TABLE 1B
INJECTION MANIFOLD PRESSURES (PSI)

MONTH	WF#1 INJECTION	WF#2 INJECTION	WF#3 INJECTION	WF#4 INJECTION	WF#4A INJECTION
Jan-03	96	0	116	119	141
Feb-03	102	119	124	120	141
Mar-03	103	94	124	118	141
Apr-03	101	45	108	120	140
May-03	95	50	100	112	133
Jun-03	92	60	114	118	131

Note: This is injection manifold pressure. Pressure at wellhead is less due to pressure loss through manifold system, pipeline, and filters.

TABLE 1C
PIPELINE PRESSURES (PSI)

MONTH	CENTRAL PROCESSING PLANT		SATELLITE SR-1	
	PC PRESSURE	IC PRESSURE	PC PRESSURE	IC PRESSURE
Jan-03	85	165	114	89
Feb-03	87	168	138	101
Mar-03	84	166	135	102
Apr-03	85	166	121	84
May-03	85	161	127	81
Jun-03	84	154	118	79

TABLE 2
SMITH RANCH PROJECT
AIR SAMPLING DATA - 2003
ENVIRONMENTAL MONITORING SITES
1ST & 2ND QUARTERS

SAMPLE LOCATION	SAMPLE PERIOD	RADIONUCLIDE ($\mu\text{Ci}/\text{ml}$)	CONCENTRATION ($\mu\text{Ci}/\text{ml}$)	ERROR EST. +/- ($\mu\text{Ci}/\text{ml}$)	L.L.D. ($\mu\text{Ci}/\text{ml}$)	EFF. CONC. LIMIT ($\mu\text{Ci}/\text{ml}$)	% EFF. CONC. LIMIT %
FENCE LINE Air Station Restricted Area Boundary	1st Quarter	U-Nat	1.91E-16	N/A	1.00E-16	3.00E-12	0.01
		Th-230	<1.00E-16	N/A	1.00E-16	2.00E-14	0.0
		Ra-226	<1.00E-16	N/A	1.00E-16	9.00E-13	0.0
		Pb-210	7.07E-15	9.89E-17	2.00E-15	6.00E-13	1.2
		Rn-222	1.4E-09	N/A	3.00E-10	1.00E-08	14.0
	2nd Quarter	U-Nat	1.36E-16	N/A	1.00E-16	3.00E-12	0.005
		Th-230	<1.00E-16	N/A	1.00E-16	2.00E-14	0.0
		Ra-226	<1.00E-16	N/A	1.00E-16	9.00E-13	0.0
		Pb-210	4.81E-15	1.90E-16	2.00E-15	6.00E-13	0.8
		Rn-222	8E-10	N/A	3.00E-10	1.00E-08	8.0
VOLLMAN RANCH Air Station Downwind Nearest Residence	1st Quarter	U-Nat	2.89E-14	N/A	1.00E-16	9.00E-14	32.1
		Th-230	<1.00E-16	N/A	1.00E-16	2.00E-14	0.0
		Ra-226	1.09E-16	4.07E-17	1.00E-16	9.00E-13	0.01
		Pb-210	8.22E-14	1.44E-15	2.00E-15	6.00E-13	13.7
		Rn-222	7.0E-10	N/A	3.00E-10	1.00E-08	7.0
	2nd Quarter	U-Nat	1.05E-14	N/A	1.00E-16	9.00E-14	11.7
		Th-230	<1.00E-16	N/A	1.00E-16	2.00E-14	0.0
		Ra-226	<1.00E-16	N/A	1.00E-16	9.00E-13	0.0
		Pb-210	7.99E-15	7.05E-16	2.00E-15	6.00E-13	1.3
		Rn-222	1.3E-09	N/A	3.00E-10	1.00E-08	13.0
DAVE'S WATER WELL Air Station Background Site	1st Quarter	U-Nat	<1.00E-16	N/A	1.00E-16	3.00E-12	0.0
		Th-230	<1.00E-16	N/A	1.00E-16	2.00E-14	0.0
		Ra-226	<1.00E-16	N/A	1.00E-16	9.00E-13	0.0
		Pb-210	<2.00E-15	N/A	2.00E-15	6.00E-13	0.0
		Rn-222	1.8E-09	N/A	3.00E-10	1.00E-08	18.0
	2nd Quarter	U-Nat	<1.00E-16	N/A	1.00E-16	3.00E-12	0.0
		Th-230	<1.00E-16	N/A	1.00E-16	2.00E-14	0.0
		Ra-226	<1.00E-16	N/A	1.00E-16	9.00E-13	0.0
		Pb-210	7.10E-15	2.26E-16	2.00E-15	6.00E-13	1.2
		Rn-222	5E-10	N/A	3.00E-10	1.00E-08	5.0

TABLE 3
SMITH RANCH PROJECT
WATER SAMPLING DATA - 2003
ENVIRONMENTAL MONITORING SITES
1ST & 2ND QUARTERS

SAMPLE LOCATION	SAMPLE DATE	RADIONUCLIDE	CONCENTRATION ($\mu\text{Ci/ml}$)	ERROR EST. +/- ($\mu\text{Ci/ml}$)	L.L.D. ($\mu\text{Ci/ml}$)	EFF. CONC. LIMIT ($\mu\text{Ci/ml}$)	% EFF. CONC. LIMIT
VOLLMAN POND	28-Mar-03	U-Nat Ra-226		DRY DRY		3.0E-07 6.0E-08	N/A N/A
	27-May-03	U-Nat Ra-226	2.2E-09 1.2E-09	N/A 3E-10	2.00E-10 2.00E-10	3.0E-07 6.0E-08	0.7 2.0
SMITH POND	28-Mar-03	U-Nat Ra-226		DRY DRY		3.0E-07 6.0E-08	N/A N/A
	27-May-03	U-Nat Ra-226	1.6E-09 1.0E-09	N/A 3E-10	2.00E-10 2.00E-10	3.0E-07 6.0E-08	0.5 1.7
SMITH WINDMILL #1	28-Mar-03	U-Nat Ra-226	1.88E-08 1.1E-09	N/A 3E-10	2.00E-10 2.00E-10	3.0E-07 6.0E-08	6.3 1.8
	27-May-03	U-Nat Ra-226	2.52E-08 9E-10	N/A 3E-10	2.00E-10 2.00E-10	3.0E-07 6.0E-08	8.4 1.5
SMITH WINDMILL #2	28-Mar-03	U-Nat Ra-226	6.5E-09 3.2E-09	N/A 4E-10	2.00E-10 2.00E-10	3.0E-07 6.0E-08	2.2 5.3
	27-May-03	U-Nat Ra-226	3.74E-08 <2.00E-10	N/A N/A	2.00E-10 2.00E-10	3.0E-07 6.0E-08	12.5 0.0
SOLAR PUMP	28-Mar-03	U-Nat Ra-226		DRY DRY		3.0E-07 6.0E-08	N/A N/A
	27-May-03	U-Nat Ra-226	5.7E-09 1.1E-09	N/A 2E-10	2.00E-10 2.00E-10	3.0E-07 6.0E-08	1.9 1.8

TABLE 4
SMITH RANCH PROJECT
DIRECT RADIATION (GAMMA) MEASUREMENT DATA - 2003
ENVIRONMENTAL MONITORING SITES
1ST & 2ND QUARTERS

SAMPLE LOCATION	SAMPLE PERIOD	EXPOSURE RATE (mR/qtr)	ERROR ESTIMATE (mR/qtr)
FENCE LINE			
Air Station	1st Quarter	34	1.1
Restricted Area Boundary	2nd Quarter	35	1.1
VOLLMAN'S RANCH			
Air Station	1st Quarter	26	0.5
Downwind Nearest Residence	2nd Quarter	31	1.1
DAVE'S WATER WELL			
Air Station	1st Quarter	29	2.5
Background Site	2nd Quarter	32	0.6
WELLFIELD #1	1st Quarter	36	3.8
	2nd Quarter	34	1.1
WELLFIELD #3	1st Quarter	27	0.9
	2nd Quarter	31	1.5
WELLFIELD #4	1st Quarter	30	1.9
	2nd Quarter	32	0.8
WELLFIELD #4A	1st Quarter	28	4.3
	2nd Quarter	32	1.3
EVAP. POND	1st Quarter	29	0.4
	2nd Quarter	36	1.5