



August 26, 2009

ATTN: Document Control Desk

Keith I. McConnell, Deputy Director
Decommissioning and Uranium Recovery Licensing Directorate
Division of Waste Management and Environmental Protection
Office of Federal and State Materials and Environmental Management Programs
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
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Rockville, MD 20852-2738

RE: Smith Ranch-Highland Uranium Project
NRC License SUA-1548, Docket No. 40-8964, Semi-Annual Effluent and Environmental
Monitoring Report, January 1 through June 30, 2009

Dear Mr. McConnell:

In accordance with 10 CFR 40.65 and per License Condition No. 12.2 of License SUA-1548, please find enclosed the Semi-Annual Effluent and Environmental Monitoring Report for the Smith Ranch-Highland Uranium Project. This report covers the period January 1 – June 30, 2009. A copy of this report is also being forwarded to Mr. Douglas Mandeville, USNRC Headquarters, and Mr. Leonard Wert, Director DRSS, Region IV.

If you have questions regarding the report, please contact me at (307) 358-6541, ext. 429.

Sincerely,

A handwritten signature in black ink, appearing to read 'Wayne Anderson', written over a horizontal line.

Wayne Anderson
Manager, Environment, Health and Safety

Attachment: Semi-Annual Report

cc: Mr. Douglas Mandeville, USNRC Headquarters
Mr. Leonard Wert, Director DRSS, Region IV, USNRC
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D/B/A CAMECO RESOURCES**

**SMITH RANCH - HIGHLAND URANIUM
PROJECT**

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

FOR THE PERIOD

**JANUARY 1 THROUGH
JUNE 30, 2009**

**USNRC SOURCE MATERIAL LICENSE
NO. SUA-1548**

DOCKET NO. 40-8964

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1.0 RESULTS FROM EMPLOYEE URINALYSES IF AN EXPOSURE EXCEEDS ACTION LEVELS DESCRIBED IN THE OPERATIONS PLAN OF THE APPROVED LICENSE APPLICATION

No bio-assays exceeded the action level of 15 µg/L uranium during the report period.

2.0 INJECTION RATES, RECOVERY RATES, AND INJECTION TRUNK-LINE PRESSURES FOR EACH SATELLITE FACILITY

The required information for each Satellite facility for the 1st and 2nd Quarters of 2009 is presented in Tables 1A, 1B, 1C, and 1D included in Attachment A.

2.1 Satellite No. 1

Satellite No. 1 did not operate during the report period, as restoration activities in the A and B Wellfield are complete. No injection or recovery rates are available for the report period, as shown in Table 1A.

2.2 Satellite No. 2, Satellite No. 3, Satellite SR-1, Satellite SR-2, Central Processing Plant

The injection rates, recovery rates, and injection pressure data for Satellite No. 2, Satellite No. 3, Satellite SR-1, Satellite SR-2, and the Central Processing Plant (CPP) are contained in Tables 1B, 1C, and 1D. The injection rates represent the total recovery rates minus the purge (clean-out circuit) flow. The purge flow from Satellite No. 2 and No. 3 is treated for uranium and radium removal and pumped to the Satellite No. 2 Purge Storage Reservoir (PSR-2) prior to disposal by irrigation at the Satellite No. 2 Land Application Facility. Purge flow from Satellite SR-1, Satellite SR-2, and the CPP is disposed by deep injection through permitted waste disposal wells.

3.0 RESULTS OF EFFLUENT AND ENVIRONMENTAL MONITORING INCLUDING WATER QUALITY ANALYSES AND MONITORING REQUIRED BY THE WDEQ PERMIT FOR THE OPERATING IRRIGATION SYSTEMS

3.1 Stack Emission Surveys

When the Central Processing Facility (CPF) at the Highland Uranium Project is operational, Cameco Resources (CR) monitors the Yellowcake Dryer and Packaging scrubber exhaust stacks to determine the emission rate of particulates, uranium, radium, and thorium. During the report period, the Highland CPF remained on standby status. All yellowcake processing activities (elution, precipitation, drying, and packaging) were conducted at the Smith Ranch CPP. The dryers at the Smith Ranch CPP are zero emission vacuum dryers that do not require emission stack testing. Therefore, no stack

tests were conducted during the report period.

3.2 Air Particulate, Radon, and Gamma Radiation Monitoring

CR maintains five Air Monitoring Stations at various locations on and around the licensed area. Two of these stations are used to monitor downwind conditions of the Highland CPF and monitoring is not required unless the CPF is in operation. The Air Monitoring Stations are used to monitor radionuclides, radon, and gamma radiation. The stations are located as follows:

- AS-1 (Dave's Water Well): This station monitors background conditions, upwind of both the Smith Ranch and HUP wellfields and yellowcake processing facilities.
- AS-2 (Smith Ranch Restricted Area): This station monitors conditions downwind of the Smith Ranch CPP Restricted Area Boundary.
- AS-3 (Vollman Ranch): This station monitors the nearest downwind resident to the Smith Ranch CPP Restricted Area.
- AS-4 (HUP Restricted Area): This station monitors conditions downwind of the HUP CPF Restricted Area Boundary (when the HUP CPF is operating).
- AS-5 (Fowler Ranch): This station monitors the nearest downwind resident to the HUP CPF Restricted Area (when the HUP CPF is operating).

Monitoring at AS-4 and AS-5 was not conducted during the reporting period, as the Highland CPF remains on standby status.

Radon is monitored at two additional sites designated as AS-6 and AS-7. AS-6 is located at the perimeter of Mine Unit-2 and monitors background for the Reynold's Ranch area which will be permitted in the near future. AS-7 is located at the perimeter of Mine Unit-4 and monitors background for the newly permitted southwest area.

Table 2 shows the radionuclide and radon data collected at these sites for the first quarter 2009. All parameters are significantly less than the 10 CFR 20, Appendix B limits. Results of the second quarter sampling have not been received from the lab as of the date of this report. These results will be forwarded under separate cover.

Gamma radiation data for the report period are provided in Table 3. 10 CFR 20 Appendix B contains no Effluent Concentration Limit for gamma radiation for comparison. Gamma results for the report period are within normal background conditions and show no discernable trends with previous data.

3.3 Water Sampling Data

3.3.1 Groundwater and Surface Water Monitoring Stations

During the report period, monitoring was completed at ten water wells and eight stock ponds throughout the permit area. Water samples are collected from the water wells and stock ponds on a quarterly basis for analysis of uranium and radium-226. Table 4 provides the analytical data for samples collected during the report period. A review of data collected during the report period shows that two stock ponds (SW-1 and 2) were dry and there was no water available for sampling. Eight water wells (GW-3, 5, 6, 8, 10, 12, 16, and 17) did not run during the report period. A review of data collected from the ten water wells and eight stock ponds show that the concentrations of uranium and radium-226 are within normal background conditions and show no discernible trends with previous data.

3.4 Wastewater Land Application Facilities Monitoring

3.4.1 Soil and Vegetation Sampling

In accordance with the approved license application and the WDEQ permits for the Satellite No. 1 and Satellite No. 2 Wastewater Land Application Facilities, soil and vegetation sampling of the irrigation areas is conducted in late summer of each year. The soil and vegetation data are collected to monitor and evaluate any adverse effects to the irrigation areas. The 2009 soil and vegetation sampling at the irrigation areas will be conducted in August 2009 and results will be included with the July 1 through December 31, 2009 semi-annual report.

3.4.2 Irrigation Fluid

In accordance with the approved license and the WDEQ Wastewater Land Application permits, CR monitors the treated irrigation fluid that is disposed of at both irrigation facilities. Grab samples are collected at the irrigator pivot during each month of operation and analyzed for various parameters. Irrigator No. 1 was not operational for the entire reporting period, as noted in Table 5,

Irrigation fluid data collected at Satellite No. 2 is provided in Table 6. Irrigator No. 2 did not operate for the first 4 months of the period. A review of the data indicates that the concentration of uranium in the monthly grab samples were slightly above the 10 CFR 20, Appendix B, Effluent Concentration Limit of $3.0 \text{ E-7 } \mu\text{Ci/ml}$, and were less than the

estimate provided in the original license application for the facility ($1.4\text{E-}6 \mu\text{Ci/ml}$). The samples contained radium-226 concentrations below the 10 CFR 20, Appendix B, Effluent Concentration Limit of $6.0\text{E-}8 \mu\text{Ci/ml}$ and below the estimate provided in the original license application for the facility ($3.0\text{E-}9 \mu\text{Ci/ml}$).

3.4.3 Radium Treatment Systems

CR collects grab samples each month to ensure that the radium-226 treatment systems are adequately treating wastewater from Satellites No. 2 and No. 3 prior to discharge into the Purge Storage Reservoir. No samples were collected from the Satellite No. 1 radium treatment system since Satellite No. 1 did not operate during the report period. The monthly radium-226 grab samples for Satellite No. 2 and No. 3 are collected at the discharge points of the radium treatment system at each facility. The results of this monitoring are included in Table 7A and 7B. Review of the monitoring data shows that all radium-226 concentrations were below the 10 CFR 20, Appendix B, Effluent Concentration Limit of $6.00\text{E-}8 \mu\text{Ci/ml}$ at both Satellites during the report period.

3.4.4 Soil Water

In accordance with the approved SUA1548 license and the WDEQ Wastewater Land Application Facility permits, CR collects soil water samples at the irrigation areas in June of each year and analyzes them for various parameters, including uranium and radium-226. The 2009 sampling was conducted on June 30, 2009.

Prior to Sampling, the lysimeters were checked to ensure proper operation, and the sampling method was reviewed and modified in an attempt to obtain a sample. The relatively limited amount of irrigation resulted in insufficient soil water available to produce a sample at any of the sample locations for the Satellite No.1 and Satellite No. 2 irrigation areas.

3.4.5 Satellite No. 1 Purge Storage Reservoir Monitor Well

A shallow monitor well, located southwest of the Satellite No. 1 Purge Storage Reservoir (PSR-1) is monitored at least weekly for potential seepage from the reservoir. There was no evidence of seepage during the report period. PSR-1 was dry for the entire period and it is not anticipated that water will be diverted to PSR-1 in the near future. It is unlikely there will be any seepage from PSR-1 in the following report periods.

3.4.6 Satellite No. 2 Purge Storage Reservoir Shallow Wells

In accordance with the approved license application, water levels are measured on a quarterly basis and ground water samples are required on a semi-annual basis from the two shallow monitoring wells located adjacent to the Satellite No. 2 Purge Storage Reservoir (PSR-2). CR conducts quarterly sampling of both these wells. Shallow Wells No. 1 and

No. 2 are located adjacent to the south and east sides of the reservoir, respectively. Monitoring of the wells was conducted on March 5 and June 26, 2009. Table 8 contains the data for samples taken during this period.

4.0 SAFETY AND ENVIRONMENTAL EVALUATIONS

All safety and environmental evaluations made by the Safety and Environmental Review Panel (SERP) and resulting changed pages to the Operations Plan and Reclamation Plan of the approved license must be submitted on an annual basis. During the period CR completed the following Safety and Environmental Evaluations.

SERP for ORC 0-122308-1, January 7, 2009 - Mine Unit C Biological Treatment-Restoration

ORC/SERP, March 9, 2009 - Mine Unit K Hydrological Test Report Extension HH 8 & 9

SERP, April 16, 2009 – RSO Refresher Training

Summaries of the completed SERP evaluations are provided in Attachment B

5.0 ANNUAL INSPECTION

The Annual Inspection was conducted March 17 through March 19, 2009. No Notices of Violation were cited during this inspection.

ATTACHMENT A
DATA TABLES 1-9

TABLE 1
RATES AND PRESSURES
SATELLITE FACILITIES
1st and 2nd Quarters 2009

TABLE 1A
SATELLITE NO. 1 INJECTION RATES, RECOVERY RATES, INJECTION PRESSURES

MONTH	Injection Pressure (PSI)			Grounwater Sweep GPM	Radium Ponds GPM	RO Feed GPM	Injection GPM	RO Concentrate GPM	Purge Flow GPM
	RO #1	RO #2	RO #3						
Jan-09	0	0	0	0	0	0	0	0	0
Feb-09	0	0	0	0	0	0	0	0	0
Mar-09	0	0	0	0	0	0	0	0	0
Apr-09	0	0	0	0	0	0	0	0	0
May-09	0	0	0	0	0	0	0	0	0
Jun-09	0	0	0	0	0	0	0	0	0

TABLE 1B
AVERAGE INJECTION RATES (GPM)

MONTH	Satellite No. 2	Satellite No. 3	Central Processing Plant	Satellite SR-1	Satellite SR-2
Jan-09	2,094	2,871	2,498	3,386	993
Feb-09	2,076	2,844	1,955	3,295	1,059
Mar-09	1,978	3,053	1,990	3,098	1,325
Apr-09	1,927	3,088	1,828	2,745	1,292
May-09	1,843	3,393	2,146	2,851	1,418
Jun-09	1,371	3,483	1,626	2,972	2,002

TABLE 1C
AVERAGE RECOVERY RATES (GPM)

MONTH	Satellite No. 2	Satellite No. 3	Central Processing Plant	Satellite SR-1	Satellite SR-2
Jan-09	2,115	2,871	2,515	3,408	1,000
Feb-09	2,095	2,844	1,969	3,320	1,064
Mar-09	1,995	3,053	2,005	3,122	1,332
Apr-09	1,975	3,088	1,842	2,767	1,298
May-09	1,920	3,393	2,163	2,873	1,425
Jun-09	1,405	3,515	1,639	2,972	2,012

TABLE 1D
INJECTION TRUNK LINE PRESSURES (PSI)

MONTH	Satellite No. 2	Satellite No. 3	Central Processing Plant	Satellite SR-1	Satellite SR-2
Jan-09	101	124	159	91	125
Feb-09	99	133	147	79	144
Mar-09	103	114	141	69	144
Apr-09	97	96	139	65	145
May-09	83	102	136	72	143
Jun-09	83	106	159	91	146

TABLE 2
AIR SAMPLING DATA
ENVIRONMENTAL MONITORING SITES
1st and 2nd Quarters 2009

SAMPLE LOCATION	SAMPLE PERIOD	RADIONUCLIDE ($\mu\text{Ci/ml}$)	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 %	
AS-1 DAVE'S WATER WELL Air Station Background Site	1st Quarter	U-Nat	9.96E-17	N/A	1.00E-16	9.00E-14	0.1	
		Th-230	ND	7.9E-17	1.00E-16	3.00E-14		
		Ra-226	3.17E-16	2.08E-16	1.00E-16	9.00E-13	0.0	
		Pb-210	1.50E-14	2.98E-15	2.00E-15	6.00E-13	2.5	
	2nd Quarter	U-Nat	Results			1.00E-16	9.00E-14	#VALUE!
		Th-230	Pending			1.00E-16	3.00E-14	#VALUE!
		Ra-226				1.00E-16	9.00E-13	0.0
		Pb-210				2.00E-15	6.00E-13	0.0
		Rn-222	1.50E-09			3.00E-10	1.00E-08	15.0
	AS-2 FENCE LINE Air Station Restricted Area Boundary	1st Quarter	U-Nat	3.70E-16	N/A	1.00E-16	9.00E-14	0.4
Th-230			ND	1.36E-16	1.00E-16	3.00E-14		
Ra-226			1.76E-16	1.92E-16	1.00E-16	9.00E-13	0.0	
Pb-210			1.55E-14	2.99E-15	2.00E-15	6.00E-13	2.6	
2nd Quarter		U-Nat	Results			1.00E-16	9.00E-14	#VALUE!
		Th-230	Pending			1.00E-16	3.00E-14	#VALUE!
		Ra-226				1.00E-16	9.00E-13	0.0
		Pb-210				2.00E-15	6.00E-13	0.0
		Rn-222	1.10E-09			3.00E-10	1.00E-08	11.0
AS-3 VOLLMAN RANCH Air Station Downwind Nearest Residence		1st Quarter	U-Nat	1.73E-16	N/A	1.00E-16	9.00E-14	0.2
	Th-230		ND		1.00E-16	3.00E-14		
	Ra-226		1.70E-16	1.86E-16	1.00E-16	9.00E-13	0.0	
	Pb-210		1.58E-14	2.99E-15	2.00E-15	6.00E-13	2.6	
	2nd Quarter	U-Nat	Results			1.00E-16	9.00E-14	#VALUE!
		Th-230	Pending			1.00E-16	3.00E-14	#VALUE!
		Ra-226				1.00E-16	9.00E-13	0.0
		Pb-210				2.00E-15	6.00E-13	0.0
		Rn-222	7.00E-10			3.00E-10	1.00E-08	7.0
	AS-4 HUP RESTRICTED AREA		STANDBY					
		STATUS						
AS-5 FOWLER RANCH		STANDBY						
		STATUS						
AS-6 PERIMETER-MINE UNIT 2		Rn-222	Canister Destroyed by Cows. No Data		3.00E-10	1.00E-08		
AS-7 PERIMETER-MINE UNIT 4		Rn-222	1.20E-09		3.00E-10	1.00E-08	12.0	

TABLE 3

**DIRECT RADIATION (GAMMA) MEASUREMENT DATA
ENVIRONMENTAL MONITORING SITES
1st & 2nd QUARTERS 2009**

SAMPLE LOCATION	SAMPLE PERIOD	EXPOSURE RATE (mR/qtr)
AS-1		
DAVE'S WATER WELL		
Air Station	1st Quarter	40
Background Site	2nd Quarter	36
AS-2		
FENCE LINE		
Air Station	1st Quarter	49
Restricted Area Boundary	2nd Quarter	42
AS-3		
VOLLMAN'S RANCH		
Air Station	1st Quarter	41
Downwind Nearest Residence	2nd Quarter	35
AS-4		
HUP RESTRICTED AREA	STANDBY STATUS	N/A
AS-5		
FOWLER RANCH	STANDBY STATUS	N/A
CONTROL	1st Quarter	43
	2nd Quarter	43

Background has not been deducted

TABLE 4
WATER SAMPLING DATA
ENVIRONMENTAL MONITORING SITES
1st and 2nd Quarters 2009

SAMPLE LOCATION	SAMPLE DATE	RADIONUCLIDE	CONCENTRATION (mg/L)	CONCENTRATION (pCi/L)	ERROR EST. +/- (pCi/L)	CONCENTRATION (µCi/ml)	EFF. CONC. LIMIT (µCi/ml)	% EFF. CONC. LIMIT
SW-1 Stock Pond Section 3 T35N, R74W	1st Quarter	U-Nat Ra-226	Dry All Quarter	N/A			3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	Dry All Quarter	N/A			3.0E-07 6.0E-08	
SW-2 Stock Pond Section 2 T35N, R74W	1st Quarter	U-Nat Ra-226	Dry All Quarter	N/A			3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	Dry All Quarter	N/A			3.0E-07 6.0E-08	
SW-3 Stock Pond Section 35 T36N, R74W	1st Quarter	U-Nat Ra-226	0.0039	0.58	1.70E-01	2.6E-09 5.8E-10	3.0E-07 6.0E-08	0.9 1.0
	2nd Quarter	U-Nat Ra-226	0.0044	0.83	2.30E-01	3.0E-09 8.3E-10	3.0E-07 6.0E-08	1.0 1.4
SW-4 Stock Pond Section 36 T36N, R74W	1st Quarter	U-Nat Ra-226	0.0009	0.23	1.40E-01	6.1E-10 2.3E-10	3.0E-07 6.0E-08	0.2 0.4
	2nd Quarter	U-Nat Ra-226	<0.0003	<MDC	9.00E-02		3.0E-07 6.0E-08	
SW-5 Stock Pond Section 21 T36N, R73W	1st Quarter	U-Nat Ra-226	0.0006	0.12	1.20E-01	4.1E-10 1.2E-10	3.0E-07 6.0E-08	0.1 0.2
	2nd Quarter	U-Nat Ra-226	0.0006	0.05	1.30E-01	4.1E-10 5.0E-11	3.0E-07 6.0E-08	0.1 0.1

TABLE 4

**WATER SAMPLING DATA
ENVIRONMENTAL MONITORING SITES
1st and 2nd Quarters 2009**

SAMPLE LOCATION	SAMPLE DATE	RADIONUCLIDE	CONCENTRATION (mg/L)	CONCENTRATION (pCi/L)	ERROR EST. +/- (pCi/L)	CONCENTRATION (µCi/ml)	EFF. CONC. LIMIT (µCi/ml)	% EFF. CONC. LIMIT
SW-6 Stock Pond Section 22	1st Quarter	U-Nat	<0.0003				3.0E-07	0.0
		Ra-226		0.05	1.10E-01	5.0E-11	6.0E-08	0.1
T36N, R73W	2nd Quarter	U-Nat	<0.0003				3.0E-07	
		Ra-226		<MDC	1.20E-01		6.0E-08	
SW-7 Stock Pond Section 22	1st Quarter	U-Nat	<0.0003				3.0E-07	
		Ra-226		<MDC			6.0E-08	
T36N, R73W	2nd Quarter	U-Nat	<0.0003				3.0E-07	
		Ra-226		<MDC	7.00E-02		6.0E-08	
SW-8 Stock Pond Section 18	1st Quarter	U-Nat	0.0005			3.4E-10	3.0E-07	0.1
		Ra-226		<MDC			6.0E-08	
T36N, R72W	2nd Quarter	U-Nat	0.0003			2.0E-10	3.0E-07	0.1
		Ra-226		0.21	1.50E-01	2.2E-10	6.0E-08	0.4
SW-9 Stock Pond Section 18	1st Quarter	U-Nat	0.0003			2.0E-10	3.0E-07	0.1
		Ra-226		0.02	1.00E-01	2.0E-11	6.0E-08	0.0
T36N, R72W	2nd Quarter	U-Nat	<0.0003				3.0E-07	
		Ra-226		<MDC			6.0E-08	
SW-10 Stock Pond Section 19	1st Quarter	U-Nat	0.0006			4.1E-10	3.0E-07	0.1
		Ra-226		0.08	1.10E-01	8.0E-11	6.0E-08	0.1
T36N, R72W	2nd Quarter	U-Nat	0.0011			7.4E-10	3.0E-07	0.2
		Ra-226		0.32	1.30E-01	3.2E-10	6.0E-08	0.5

TABLE 4

**WATER SAMPLING DATA
ENVIRONMENTAL MONITORING SITES
1st and 2nd Quarters 2009**

SAMPLE LOCATION	SAMPLE DATE	RADIONUCLIDE	CONCENTRATION (mg/L)	CONCENTRATION (pCi/L)	ERROR EST. +/- (pCi/L)	CONCENTRATION (µCi/ml)	EFF. CONC. LIMIT (µCi/ml)	% EFF. CONC. LIMIT
GW-1 Windmill Section 1 T35N, R74W	1st Quarter	U-Nat Ra-226	0.0247			1.7E-08	3.0E-07	5.6
				0.15	1.30E-01	1.5E-10	6.0E-08	0.3
T35N, R74W	2nd Quarter	U-Nat Ra-226	0.0318			2.2E-08	3.0E-07	7.2
				1.50	2.40E-01	1.5E-09	6.0E-08	2.5
GW-2 Water Well Section 35 T36N, R74W	1st Quarter	U-Nat Ra-226	0.0414			2.8E-08	3.0E-07	9.3
				0.59	1.90E-01	5.9E-10	6.0E-08	1.0
T36N, R74W	2nd Quarter	U-Nat Ra-226	0.0480			3.2E-08	3.0E-07	10.8
				0.80	1.80E-01	8.0E-10	6.0E-08	1.3
GW-3 Windmill Section 27 T36N, R74W	1st Quarter	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	0.0 0.0
	2nd Quarter	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	0.0 0.0
GW-4 Windmill Section 23 T36N, R74W	1st Quarter	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	0.0736			5.0E-08	3.0E-07	16.6
T36N, R74W				0.35	1.40E-01	3.5E-10	6.0E-08	0.6
	GW-5 Windmill Section 30 T36N, R73W	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	

TABLE 4

**WATER SAMPLING DATA
ENVIRONMENTAL MONITORING SITES
1st and 2nd Quarters 2009**

SAMPLE LOCATION	SAMPLE DATE	RADIONUCLIDE	CONCENTRATION (mg/L)	CONCENTRATION (pCi/L)	ERROR EST. +/- (pCi/L)	CONCENTRATION (µCi/ml)	EFF. CONC. LIMIT (µCi/ml)	% EFF. CONC. LIMIT
GW-6 Windmill Section 28 T36N, R73W	1st Quarter	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	
GW-8 Windmill Section 23 T36N, R73W	1st Quarter	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	
GW-9 Windmill Section 14 T36N, R73W	1st Quarter	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	0.0010	<MDL		6.8E-10	3.0E-07 6.0E-08	0.2
GW-10 Water Well Section 14 T36N, R73W	1st Quarter	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	
GW-11 Water Well Section 11 T36N, R73W	1st Quarter	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	0.0006	0.34	1.40E-01	4.1E-10 3.4E-10	3.0E-07 6.0E-08	0.1 0.6

TABLE 4

**WATER SAMPLING DATA
ENVIRONMENTAL MONITORING SITES
1st and 2nd Quarters 2009**

SAMPLE LOCATION	SAMPLE DATE	RADIONUCLIDE	CONCENTRATION (mg/L)	CONCENTRATION (pCi/L)	ERROR EST. +/- (pCi/L)	CONCENTRATION (µCi/ml)	EFF. CONC. LIMIT (µCi/ml)	% EFF. CONC. LIMIT
GW-12 Water Well Section 7 T36N, R72W	1st Quarter	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	
GW-13 Water Well Section 9 T36N, R72W	1st Quarter	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	0.0150	1.10	2.20E-01	1.0E-08 1.1E-09	3.0E-07 6.0E-08	3.4 1.8
GW-14 Water Well Section 10 T36N, R72W	1st Quarter	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	0.0016	1.50	2.40E-01	1.1E-09 1.5E-09	3.0E-07 6.0E-08	0.4 2.5
GW-15 Water Well Section 15 T36N, R72W	1st Quarter	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	0.0206	1.10	2.10E-01	1.4E-08 1.1E-09	3.0E-07 6.0E-08	4.6 1.8
GW-16 Water Well Section 11 T36N, R72W	1st Quarter	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	

TABLE 4

WATER SAMPLING DATA
 ENVIRONMENTAL MONITORING SITES
 1st and 2nd Quarters 2009

SAMPLE LOCATION	SAMPLE DATE	RADIONUCLIDE	CONCENTRATION (mg/L)	CONCENTRATION (pCi/L)	ERROR EST. +/- (pCi/L)	CONCENTRATION (µCi/ml)	EFF. CONC. LIMIT (µCi/ml)	% EFF. CONC. LIMIT
GW-17 Water Well Section 8 T36N, R72W	1st Quarter	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	
GW-18 Water Well Section 2 T36N, R72W	1st Quarter	U-Nat Ra-226	Did not Operate This Quarter	N/A			3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	0.0151	1.20	2.20E-01	1.0E-08 1.2E-09	3.0E-07 6.0E-08	3.4 2.0
GW-20 Water Well Section 27 T36N, R73W	1st Quarter	U-Nat Ra-226	0.0009	0.32	1.60E-01	6.1E-10 3.2E-10	3.0E-07 6.0E-08	0.2 0.5
	2nd Quarter	U-Nat Ra-226	<0.0003	0.11	1.10E-01	1.1E-10	3.0E-07 6.0E-08	0.2

TABLE 5

SATELLITE NO. 1
 LAND APPLICATION FACILITY (IRRIGATOR NO. 1)
 MONTHLY IRRIGATION FLUID DATA
 1st and 2nd Quarters 2009

IRRIGATION CYCLE

DATE SAMPLED		Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09
VOLUME (AF)							
MAJOR IONS (mg/L)	Reporting Limit						
Calcium	1.0						
Magnesium	1.0	Irrigator	Irrigator	Irrigator	Irrigator	Irrigator	Irrigator
Sodium	1.0	Did	Did	Did	Did	Did	Did
Potassium	1.0	Not	Not	Not	Not	Not	Not
Bicarbonate	1.0	Operate	Operate	Operate	Operate	Operate	Operate
Sulfate	1.0						
Chloride	1.0						
NON-METALS							
TDS @ 180° C (mg/L)	10.0						
pH (standard units)	0.010						
SAR	0.01						
TRACE METALS (mg/L)							
Arsenic	0.001						
Barium	0.10						
Boron	0.10						
Selenium	0.001						
RADIOMETRIC							
U-nat (uCi/mL)	2.03E-10						
Ra-226 (uCi/mL)	2.00E-10						
Ra Err. Est. +/-							

TABLE 6

SATELLITE NO. 2
LAND APPLICATION FACILITY (IRRIGATOR NO. 2)
MONTHLY IRRIGATION FLUID DATA
1st and 2nd Quarters 2009

IRRIGATION CYCLE

DATE SAMPLED		Jan-09	Feb-09	Mar-09	Apr-09	18-May-09	16-Jun-09
VOLUME (AF)						13.10	32.3
MAJOR IONS (mg/L)	Reporting Limit						
Calcium	1.0					339	349
Magnesium	1.0	Irrigator	Irrigator	Irrigator	Irrigator	91	95
Sodium	1.0	Did	Did	Did	Did	79	74
Potassium	1.0	Not	Not	Not	Not	26	25.0
Bicarbonate	1.0	Operate	Operate	Operate	Operate	224	196
Sulfate	1.0					693	716
Chloride	1.0					462	445
NON-METALS							
TDS @ 180° C (mg/L)	10.0					2300	2280
pH (standard units)	0.010					7.97	8
SAR	0.01					1.0	3.23
TRACE METALS (mg/L)							
Arsenic	0.001					0.003	0.002
Barium	0.1					ND	ND
Boron	0.10					ND	0.2
Selenium	0.001					0.540	0.414
RADIOMETRIC							
U-nat (uCi/mL)	2.03E-10					3.85E-07	4.21E-07
Ra-226 (uCi/mL)	2.00E-10					1.4E-09	1.30E-09
Ra Err. Est. +/-						3E-10	2.40E-10

TABLE 7A

SATELLITE NO. 2
 RADIUM TREATMENT SYSTEM DISCHARGE
 MONTHLY RADIUM GRAB SAMPLES
 1st and 2nd Quarters 2009

SAMPLE DATE		<u>Jan-09</u>	<u>Feb-09</u>	<u>Mar-09</u>	<u>Apr-09</u>	<u>May-09</u>	<u>Jun-09</u>
	Reporting Limit:						
RADIOMETRIC Ra-226 (uCi/mL)	2.00E-10	7.50E-09	3.20E-09	1.80E-08	9.50E-10	2.50E-09	6.00E-09
Ra Err. Est. +/-		5.30E-10	3.80E-10	7.90E-10	2.20E-10	3.50E-10	4.70E-10
Eff. Con. Limit	6.00E-08						

TABLE 7B

SATELLITE NO. 3
 RADIUM TREATMENT SYSTEM DISCHARGE
 MONTHLY RADIUM GRAB SAMPLES
 1st and 2nd Quarters 2009

SAMPLE DATE		<u>Jan-09</u>	<u>Feb-09</u>	<u>Mar-09</u>	<u>Apr-09</u>	<u>May-09</u>	<u>Jun-09</u>
	Reporting Limit:						
RADIOMETRIC Ra-226 (uCi/mL)	2.00E-10	3.30E-09	3.20E-08	8.50E-09	4.80E-09	3.20E-08	3.40E-09
Ra Err. Est. +/-		3.70E-10	1.10E-09	5.70E-10	4.30E-10	9.40E-10	3.70E-10
Eff. Con. Limit	6.00E-08						

TABLE 8

**SATELLITE NO. 2
PURGE STORAGE RESERVOIR (PSR-2)
SHALLOW MONITORING WELLS
WATER LEVEL AND WATER QUALITY DATA
1st and 2nd Quarters 2009**

SAMPLE SITE	Shallow Well No. 1 (South)		Shallow Well No. 2 (East)		
	5-Mar-09	26-Jun-09	5-Mar-09	26-Jun-09	
SAMPLE DATE					
WATER LEVEL (DTW)	11.2	13.8	9.6	9.7	
MAJOR IONS (mg/L)	Reporting Limit				
Bicarbonate	1.0	352	385	293	339
Sulfate	1.0	2370	2390	2490	2390
Chloride	1.0	278	327	401	480
NON-METALS					
Cond ($\mu\text{mho/cm}$)	1.0	4740	4790	5120	5310
pH (standard units)	0.01	7.80	7.80	7.52	7.51
TRACE METALS (mg/L)					
Barium	0.001	ND	ND	ND	ND
Selenium	0.0025	1.780	1.630	0.046	0.096
RADIOMETRIC					
U-nat ($\mu\text{Ci/mL}$)	6.77E-10	5.50E-07	5.37E-07	3.78E-08	4.50E-08
Ra-226 ($\mu\text{Ci/mL}$)	2.00E-10	1.10E-09	7.70E-10	9.00E-10	9.60E-10
Ra-226 Err. Est. +/- ($\mu\text{Ci/mL}$)		2.20E-10	2.10E-10	2.00E-10	2.30E-10

TABLE 9A

SATELLITE NO. 1
 LAND APPLICATION FACILITY (IRRIGATOR NO. 1)
 ANNUAL SOIL WATER DATA
 1st and 2nd Quarters

SAMPLE SITE	2'	4'	6'
	NW¼	NW¼	NW¼
	NE¼	NE¼	NE¼
	SW¼	SW¼	SW¼
	SE¼	SE¼	SE¼
	Lysimeter Composite	Lysimeter Composite	Lysimeter Composite

SAMPLE DATE 06/30/09

MAJOR IONS (mg/L) REP. LIMIT
 Bicarbonate 1.0
 Sulfate 1.0
 Chloride 1.0

INSUFFICIENT
 WATER FOR
 SAMPLING

NON-METALS
 Cond (umho/cm) 1.0
 pH (standard units) 0.010

TRACE METALS (mg/L)
 Boron 0.10
 Selenium 0.001

RADIOMETRIC
 U-nat: (mg/L) 0.0003
 Ra-226: (pCi/L) 0.2
 Ra Err. Est. +/-
 U-nat: (uCi/mL) 2.03E-10
 Ra-226: (uCi/mL) 2.00E-10
 Ra Err. Est. +/-

TABLE 9B

**SATELLITE NO. 2
SATELLITE NO. 2 LAND APPLICATION FACILITY (IRRIGATOR NO. 2)
ANNUAL SOIL WATER DATA
1st and 2nd Quarters 2009**

SAMPLE SITE	2'	4'	6'
	NW¼	NW¼	NW¼
	NE¼	NE¼	NE¼
	SW¼	SW¼	SW¼
	SE¼	SE¼	SE¼
	Lysimeter Composite	Lysimeter Composite	Lysimeter Composite

SAMPLE DATE 06/30/09

MAJOR IONS (mg/L)	REP. LIMIT
Bicarbonate	1.0
Sulfate	1.0
Chloride	1.0

**INSUFFICIENT
WATER FOR
SAMPLING**

NON-METALS	
Cond (umho/cm)	1.0
pH (standard units)	0.010

TRACE METALS (mg/L)	
Boron	0.10
Selenium	0.001

RADIOMETRIC	
U-nat: (mg/L)	0.0003
Ra-226: (pCi/L)	0.2
Ra Err. Est. +/-	
U-nat: (uCi/rnL)	2.03E-10
Ra-226: (uCi/mL)	2.00E-10
Ra Err. Est. +/-	

ATTACHMENT B

SAFETY AND ENVIRONMENTAL EVALUATIONS



CAMECO RESOURCES
Smith Ranch-Highland
Operation

Inter-Office Memo

To: Tom Cannon

From: Dawn Kolkman *DK*

Date: 1/7/09

Cc: John McCarthy, Krista Wenzel, Toby Hewitt, Mike Bryson

Subject: SERP for ORC 0-122308-1 Mine Unit C Biological Treatment - Restoration

A. SERP Evaluation Checklist

(New) Change, Test and Experiment License Condition

- a. The licensee may, without obtaining a license amendment pursuant to §40.44, and subject to conditions specified in (b) of this condition:
 - 1) Make changes in the facility as described in the license application (as updated).
 - 2) Make changes in the procedures as described in the license application (as updated), and
 - 3) Conduct test or experiments not described in the license application (as updated).
- b. NRC License Condition 9.4b of SUA-1548 requires a license amendment prior to implementing a proposed change, test or experiment. The SERP shall review the Checklist to determine if a license amendment is required prior to implementing a proposed change.

SERP Evaluation Checklist

NRC LICENSE REQUIREMENT	YES	NO	N/A
Results in any appreciable increase in the frequency of occurrence of an accident previously evaluated in the license application (as updated)		✓	
Results in any appreciable increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety previously evaluated in the license application (as updated)		✓	
Results in any appreciable increase in the consequences of an accident previously evaluated in the license application (as updated)		✓	
Results in any appreciable increase in the consequences of a malfunction of an SSC previously evaluated in the license application (as updated)		✓	
Creates a possibility for an accident of a different type than any previously evaluated in the license application (as updated)		✓	
Creates a possibility for a malfunction of an SSC with a different result than previously evaluated in the license application (as updated)		✓	
Results in a departure from the method of evaluation described in the license application (as updated) used in establishing the final safety evaluation report (FSER) or the environmental assessment (EA) or technical evaluation reports (TERs) or other analyses and evaluations for license amendments.		✓	

If all questions are answered NO then implementation can begin. If any of the questions are answered YES then an amendment to License must be submitted and approval received from NRC prior to implementation.

B. SAFETY AND ENVIRONMENTAL REVIEW PANEL (SERP)

NRC License condition 9.4d of SUA-1548 requires that any changes, test or experiments made under the Performance Based License Condition be evaluated by a SERP consisting of at least three individuals. One member must have management expertise and have the financial and management responsibility for approving changes. The second member must have operational and/or construction expertise and have responsibility for implementing any operational changes. The third member must be the Radiation Safety Officer (RSO), or equivalent (CRSO), with the responsibility of assuring that the proposed activities will conform to radiation safety and environmental requirements. Members selected to perform this SERP review include:

SERP Member	QUALIFICATIONS TITLE
Michael D. Bryson	Wellfield Operations Supt.
Tobias Hewitt	Restoration Engineer
Krista Wenzel	Manager EHS
Tom Cannon	General Manager
Arlene Faunce	Assistant RSO
Chris McCarthy	RSO

C. EVALUATION OF PROPOSED CHANGE/TEST

Operations/Technical Review

Refer to ORC Change Control Form. Methanol will be used for this bioremediation process.

Environmental/Safety Review

The methanol is stored in a tank that is contained within a bermed area.

Chemically, there will be no difference than in past practices. A review of monitoring practices during the treatment period may be evaluated on an as need basis for additional sampling.

Compliance Review

Consequences of use will be same as those encountered in wellfield B.

SERP Member	TITLE
Tom Cannon	General Manager
John McCarthy	RSO
Toby Hewitt	Restoration Superintendent. Hydrologist
Dawn Kolkman	Environmental Coordinator

C. EVALUATION OF PROPOSED CHANGE/TEST

Operations/Technical Review

The test results were reviewed and compared with the requirements stated in NRC License SUA-1548, Docket No. 40-8964, Chapter 5, 5.1.3 "Mine Unit Hydrological Test Document". As stated in 5.1.3 a Safety and Environmental Review Panel is to ensure that the document contains the eight listed items.

- | | |
|-----------------|---|
| <u>P.1-1</u> | 1. A description of the proposed mine unit (location, extent, etc.) |
| <u>Fig 1-2</u> | 2. A map(s) showing the proposed production patterns and locations of all monitor wells. |
| | 3. Geologic cross-sections and cross-section location maps. These were created in the original MU K Hydrologic Report. |
| | 4. Isopach maps of the Production Zone sand, overlying confining unit and underlying confining unit. These were created in the original MU K Hydrologic Report. |
| <u>Chp. 3-4</u> | 5. Discussion of how the hydrologic test was performed, including well completion reports. |
| <u>Chp. 4</u> | 6. Discussion of the results and conclusions of the hydrologic test including pump test raw data, drawdown match curves, potentiometric surface maps, water level graphs, drawdown maps and when appropriate, directional transmissivity data and graphs. |
| <u>Chp. 7</u> | 7. Sufficient information to show that wells in the monitor well ring are in adequate communication with the production patterns. |
| <u>N/A</u> | 8. Any other information pertinent to the area tested will be included and discussed. |

Environmental/Safety Review

It was determined that there is no increased environmental or safety risk from start-up of the K-Wellfield and current wellfield start-up procedures are adequate (see attached Risk Assessment).

Compliance Review

The SERP evaluated the start-up of K-Wellfield Extension against the conditions stated in the License Condition 9.4 as shown in the table below. The SERP concluded that the start-up of K-Wellfield satisfied those conditions.

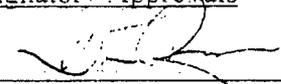
SERP Evaluation Checklist

NRC LICENSE REQUIREMENT	YES	NO	N/A
Results in any appreciable increase in the frequency of occurrence of an accident previously evaluated in the license application (as updated)		X	
Results in any appreciable increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety previously evaluated in the license application (as updated)		X	
Results in any appreciable increase in the consequences of an accident previously evaluated in the license application (as updated)		X	
Results in any appreciable increase in the consequences of a malfunction of an SSC previously evaluated in the license application (as updated)		X	
Creates a possibility for an accident of a different type than any previously evaluated in the license application (as updated)		X	
Creates a possibility for a malfunction of an SSC with a different result than previously evaluated in the license application (as updated)		X	
Results in a departure from the method of evaluation described in the license application (as updated) used in establishing the final safety evaluation report (FSER) or the environmental assessment (EA) or technical evaluation reports (TERs) or other analyses and evaluations for license amendments.		X	

D. CONCLUSIONS

The ORC/SERP concluded the document "Mine Unit K Extension Hydrologic Test Report" did contain all of the information listed in the eight point questionnaire.

SERP Member Signatory Approvals

Signature:  Date: 3.9.09

Signature: Robert J. Howard PG 3625 Date: 3/9/2009

Signature: John Mc Carthy 250 Date: 3/9/09

Signature: Dawn C. Kalkman Date: 3.9.09

Signature: _____ Date: _____

Signature: _____ Date: _____

Signature: _____ Date: _____

Signature: _____ Date: _____

E. ATTACHEMENTS (if any)



CAMECO RESOURCES
Smith Ranch-Highland
Operation

Inter-Office Memo

To: Tom Cannon

From: Dawn Kolkman

Date: 4/16/09

Cc: John McCarthy, Arlene Faunce, Krista Wenzel

Subject: RSO Refresher Re-training

A. SERP Evaluation Checklist

(New) Change, Test and Experiment License Condition

- a. The licensee may, without obtaining a license amendment pursuant to §40.44, and subject to conditions specified in (b) of this condition:
- 1) Make changes in the facility as described in the license application (as updated).
 - 2) Make changes in the procedures as described in the license application (as updated), and
 - 3) Conduct test or experiments not described in the license application (as updated).
- b. NRC License Condition 9.4b of SUA-1548 requires a license amendment prior to implementing a proposed change, test or experiment. The SERP shall review the Checklist to determine if a license amendment is required prior to implementing a proposed change.

SERP Evaluation Checklist

NRC LICENSE REQUIREMENT	YES	NO	N/A
Results in any appreciable increase in the frequency of occurrence of an accident previously evaluated in the license application (as updated)		X	
Results in any appreciable increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety previously evaluated in the license application (as updated)		X	
Results in any appreciable increase in the consequences of an accident previously evaluated in the license application (as updated)		X	
Results in any appreciable increase in the consequences of a malfunction of an SSC previously evaluated in the license application (as updated)		X	
Creates a possibility for an accident of a different type than any previously evaluated in the license application (as updated)		X	
Creates a possibility for a malfunction of an SSC with a different result than previously evaluated in the license application (as updated)		X	
Results in a departure from the method of evaluation described in the license application (as updated) used in establishing the final safety evaluation report (FSER) or the environmental assessment (EA) or technical evaluation reports (TERs) or other analyses and evaluations for license amendments.		X	

If all questions are answered NO then implementation can begin. If any of the questions are answered YES then an amendment to License must be submitted and approval received from NRC prior to implementation.

B. SAFETY AND ENVIRONMENTAL REVIEW PANEL (SERP)

NRC License condition 9.4d of SUA-1548 requires that any changes, test or experiments made under the Performance Based License Condition be evaluated by a SERP consisting of at least three individuals. One member must have management expertise and have the financial and management responsibility for approving changes. The second member must have operational and/or construction expertise and have responsibility for implementing any operational changes. The third member must be the Radiation Safety Officer (RSO), or equivalent (CRSO), with the responsibility of assuring that the proposed activities will conform to radiation safety and environmental requirements. Members selected to perform this SERP review include:

SERP Member	QUALIFICATIONS TITLE
Tom Cannon	General Manager of Operations
Terry Warner	Human Resources Manager
John McCarthy	RSO
Dawn Kolkman	Environmental Coordinator

C. EVALUATION OF PROPOSED CHANGE/TEST

Operations/Technical Review

It was discussed that applicable alternate classes could be substituted in place of the normal RSO refresher training and how that would actually benefit the company. The NRC suggested that alternate pertinent classes would be beneficial. A copy of that letter is attached. Several possible applicable classes were supplied for review but the list does not have to be limited to those either.

Environmental/Safety Review

N/A

Compliance Review

The requirement of performing a SERP prior to instituting.

D. CONCLUSIONS

The committee finds that the use of alternate classes would be acceptable and will fulfill the NRC license requirement to have the RSO receive refresher training.

E ATTACHEMENTS (if any)

Print out of possible classes

Suggestion memo by John McCarthy, RSO

NRC email

SERP Member Signatory Approvals

Signature: *John McConth* 1250 Date: 4/16/09

Signature: *Larry Warner* Date: 4/16/09

Signature: *[Signature]* Date: 4.16.09

Signature: *Dawn C. Kalkman* Date: 4.16.09

Signature: _____ Date: _____

Signature: _____ Date: _____

Signature: _____ Date: _____

Signature: _____ Date: _____

E. ATTACHEMENTS (if any)



CAMECO RESOURCES
Smith Ranch-Highland
Operation

Inter-Office Memo

To: File

From: John McCarthy, RSO

Date: 4/13/09

Cc:

Subject: Radiation Safety Officer Re-training

The NRC license requires the approved Radiation Safety Officer (RSO) be refresher trained every two years. There are various companies and universities that offer the refresher training classes that met the intent of the requirement. After attending many of these classes over the years, it has become apparent that the information provided seldom changes and becomes repetitive. Attached are alternate classes that apply to our licensed activities and it may be advantageous expand the RSO's knowledge base to include these areas as a substitute to refresher training. This ORC/SERP will determine the classes that may be of radiological benefit to the operations now and in the future.



CAMECO RESOURCES
Smith Ranch-Highland
Operation

Inter-Office Memo

To: File

Date: 9/9/9

Subject: ORC O-041609-1

Per conversations with the NRC on April 13, 2009, it was agreed that although MARSSIM is not a requirement it is a valid approach for RSO refresher training, as it teaches smarter sampling, statistical approach and other radiation type classes which could be helpful.