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OCT 13 1982

URFO:RTW
 Docket File No. 40-8084
 04008084140E

MEMORANDUM FOR: Docket File No. 40-8084

FROM: Roger T. Woolsey, Project Manager
 Uranium Recovery Field Office

SUBJECT: REVIEW OF RIO ALGOM CORPORATIONS' (RAC) 40CFR190 AND
 10CFR40.65 REPORTS FOR THE FIRST QUARTER 1982

By letter dated May 26, 1982, RAC submitted the subject report in response to Section 40.65 of 10CFR40 and License Condition Nos. 36 and 37 of Source Material License No. SUA-1119, and as required by NRC Order dated March 26, 1981.

I have reviewed the first quarter 1982 environmental data and find that all required data has been submitted.

1. Stacks - Yellowcake and Ore

Unat, Th-230, Ra-226 and Pb-210 were measured in three yellowcake stacks and three ore Crusher and Transfer area stacks during the first quarter of 1982. 14 samples were in excess of the restricted area MPC. No attempt was made by RAC to compare these samples with those taken during the previous quarter. However, since Section 20.106(d) of 10CFR20 permits concentration limits (for stacks, etc) to be determined for Appendix B, Table II, at the boundary of the restricted area, I have made this determination and found that all radionuclides were less than 25% of MPC.

2. Air Samples - Air Particulate Monitors and Radon

Air particulate concentrations and radon were measured at six locations in the environs at distances up to 10.6 miles from the property line.

Sample results for U-nat, Th-230, Ra-226 and Pb-210 measured at these six locations (S-1 through S-6; S-6 is considered a background

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station) varied from 0.0 to 25% of applicable MPCs. The highest result was 25% for station EM-3.

Results for radon sampling varied from 5.7 to 16.3% of the applicable MPC. The maximum measurement was 16.3% for EM-2.

3. Direct Radiation - Gamma

A tabulation of direct radiation TLD gamma dosimeter results for the period 1/11 - 4/7/82 are as follows:

<u>Location</u>	<u>Exposure Rates (mrem/qtr)</u>
EM-1	11.2
EM-2	16.3
EM-3	16.3
EM-4	12.9*
EM-5	14.6
EM-6	14.6

* I prorated this to account for the short exposure time of 72 days (see page 11 of the RAC report). Also, 11 mrems were subtracted from each badge to account for the "background film badge." I was given this additional information during a telecon with Brian Hardy of RAC on 10/8/82.

4. GroundWater Monitoring

Ten ground water wells were reported for the period 1/1/82 to 3/31/81 including one well MW5 used as a background sample station well both for radiological and chemical concentrations. All of these wells were sampled for Unat, Th-230, Ra-226, Pb-210 and Po-210; and all were reported to be under the applicable radiological MPC.

These ten wells were also sampled and analyzed for the following chemical parameters for the first quarter 1982: calcium carbonate, boron, calcium, chloride, magnesium, nitrate, selenium, sodium, sulfate and Total Dissolved Solids. Many of these wells were noted to have some chemical parameters in excess of the applicable drinking water limits.

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Specifically, monitor wells MW3, H48, H54, H56 and DM80-1, which are north and close to the tailings pond; wells MW1, MW2 and MW4, south of the ponds and close in, are running essentially below the limits except for sodium and Total Dissolved Solids. Since RAC has commenced remedial actions to reduce groundwater contamination in this area, the staff will continue to watch these results to evaluate the effectiveness of the mitigative actions taken by the licensee.

5. Surface Water

Surface water samples were collected at five locations in the environs and all samples measured were less than the applicable MPCs.

License Condition No. 37 - 40CFR190 Compliance Review

The licensee provided a 40CFR190 compliance report as required by this license condition. Actual monitoring data for the 1st quarter of 1982, at the locations required by License Condition No. 36, were provided in this report. Rio Algom provided the dose assessment tabulated below based on monitoring data contained in this report. Rio Algom selected a trailer approximately one mile north of the mill as the nearest residence. The sampling data presented in this report was taken from station EM-4. The numbers in this table represent concentrations of airborne particulates after subtracting the background concentrations listed for station EM-6. The data below represents the 50-year dose commitment (mrem) assuming the concentrations measured this year approximate those measured for the four quarters measured in License Condition No. 37.

<u>Location</u>	<u>Radio-nuclide</u>	<u>Gross</u>	<u>Bkg</u>	<u>Net</u>	<u>Body</u>	<u>Bone</u>	<u>Lung</u>
EM-4	Unat	.00182	.00104	.00078	.0036	0.062	0.132
	Th-230	.00436	.00081	.00	.00	0.0	0.0
	Ra-226	.00046	.000	.0046	.014	0.142	3.04
TOTAL DOSE IN MREMS					.0176	0.204	3.172

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Conclusion

The licensee has submitted the data required by Source Material License No. SUA-1119, and the staff has concluded that the Rio Algom Corporation is in compliance with the 40CFR190 standard of 25mrem for the first quarter of 1982.

ORIGINAL SIGNED BY

HPettengill for

Roger T. Woolsey, Project Manager
Uranium Recovery Field Office

ORIGINAL SIGNED BY

Approved by:

Harry J. Pettengill, Section Chief
Uranium Recovery Field Office

Case Closed: 04008084140E

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