



Atlas Minerals
Division of Atlas Corporation
P. O. Box 488
Moab, Utah

April 28, 1966

Mr. Donald A. Nussbaumer, Chief
Source and Special Nuclear Materials Branch
Division of Licensing and Regulation
United States Atomic Energy Commission
Washington 25, D.C.

Dear Mr. Nussbaumer:

This report is submitted in accordance with the provisions set forth in the letter of April 30, 1965 from Donald A. Nussbaumer to R. F. Hollis amending license No. R-161 with respect to effluents from the Moab mill (Reference DML:DFH 40 3453).

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The results of the required surveys are shown in the following enclosed tables:

Table I - Tailings Pond Effluent Survey for
Calendar 1965 - Moab Mill.

Table II - Colorado River Radionuclide Survey
for Calendar 1965 - Moab Mill.

Table III - Colorado River Flowrate Survey for
1965 - Moab Mill.

The sampling, measuring and decontamination procedures currently used at Moab are essentially the same as those described in the letter from R. F. Hollis to you of January 28, 1964.

The copper recovery circuit discussed in the above letter, although construction was completed in July of 1965, did not achieve full operational status until January of 1966. The full effect of the acid solutions from this circuit on the content of radionuclides in the effluent from the Moab mill has not, therefore, been evaluated. Also, some time in late calendar 1966, Atlas Minerals intends to begin operation at Moab of an acid leach circuit that will treat approximately one-half of the ore processed for the recovery of uranium and vanadium.

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In order to evaluate the effects of the copper and vanadium acid leach circuits on the quality of the tailings pond effluent from the Moab mill, Atlas Minerals requests that an amendment to AEC Source Material License No. R-161 be granted by your office providing the same conditions and limitations as the amendment now in effect and that this amendment expire on April 30, 1967.

Yours very truly,

A handwritten signature in dark ink, appearing to read 'T. F. Izzo', written in a cursive style.

T. F. Izzo
Mill Superintendent

TFI:sw

Enclosures

TABLE I

Tailings Pond Effluent Survey for Calendar 1965 - Moab Mill

<u>1965</u> <u>Month</u>	<u>Effluent Flowrate</u> <u>(GPM)</u>	<u>Ra266</u> <u>(Nx10⁻⁸ uc/ml)</u>	<u>Th 230</u> <u>(Nx10⁻⁶ uc/ml)</u>	<u>U Natural</u> <u>(Nx10⁻⁵ uc/ml)</u>
January	804	1.14	0.035	0.06
February	743	1.14	0.021	0.06
March	858	1.20	0.020	0.06
April	657	1.94	0.034	0.09
May	569	1.85	0.175	0.09
June	650	1.95	0.170	0.11
July	None <u>1/</u>	-	-	-
August	592	3.28	0.007	0.11
September	315 <u>2/</u>	4.23	0.011	0.11
October	32 <u>2/</u>	2.06	0.006	0.06
November	503	0.78	0.006	0.06
December	<u>1131</u>	<u>1.05</u>	<u>0.007</u>	<u>0.03</u>
Avg. Flowrate	571			
Weighted Average Concentration		1.98	0.055	0.09

- 1/ The absence of an effluent during the month of July resulted from the annual mill shutdown in the latter part of June.
- 2/ Fourteen days flow in September and six days in October. During the remaining days of these months the tailings pond level was being raised and no effluent was flowing.

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TABLE II

Colorado River Radionuclide Survey for Calendar 1965 - Moab MillAll Ra 226 Analyses $N \times 10^{-8}$ uc/mlAll Th 230 Analyses $N \times 10^{-6}$ uc/mlAll U Natural Analyses $N \times 10^{-5}$ uc/ml

	Sampling Station Number <u>1/</u>					
<u>January</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Ra 226	0.03	0.06	0.04	0.05	0.06	0.04
Th 230	0.005	0.010	0.011	0.007	0.009	0.008
U Natural	Nil	Nil	Nil	Nil	Nil	Nil
<u>February</u>						
Ra 226	0.06	0.06	0.06	0.06	0.05	0.06
Th 230	0.011	0.007	0.017	0.011	0.007	0.014
U Natural	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006
<u>March</u>						
Ra 226	0.05	0.05	0.05	0.08	0.06	0.06
Th 230	0.003	0.004	0.003	0.004	0.002	0.003
U Natural	0.0009	0.0009	0.0006	0.0006	0.0009	0.0009
<u>April</u>						
Ra 226	0.11	0.08	0.07	0.03	0.05	0.07
Th 230	0.016	0.019	0.022	0.014	0.034	0.013
U Natural	0.002	0.002	0.002	0.002	0.001	0.001
<u>May</u>						
Ra 226	0.02	0.07	0.05	0.04	0.04	0.05
Th 230	0.034	0.021	0.015	0.018	0.018	0.015
U Natural	Nil	Nil	Nil	Nil	Nil	Nil
<u>June</u>						
Ra 226	0.03	0.02	0.02	0.04	0.04	0.03
Th 230	0.003	0.004	0.016	0.004	0.003	0.006
U Natural	Nil	Nil	Nil	Nil	Nil	Nil
<u>July</u>						
Ra 226	0.04	0.03	0.04	0.03	0.04	0.04
Th 230	0.007	0.006	0.008	0.007	0.005	0.007
U Natural	Nil	Nil	Nil	Nil	Nil	Nil



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Colorado River Radionuclide Survey for Calendar 1965 - Moab Mill

(Continued)

August through November inclusive no river samples taken.

December

Ra 226	0.02	0.03	0.03	0.02	0.04	0.04
Th 230	0.005	0.003	0.003	0.002	0.003	0.005
U Natural	Nil	Nil	Nil	Nil	Nil	Nil

1/ Sample Station

1. One mile above Moab mill
2. 1/4 mile below Moab mill
3. 1/2 mile below mill
4. 1 mile below mill
5. 5 miles below mill
6. 10 miles below mill

TABLE III

Colorado River Flowrate Survey for 1965 - Moab Mill

<u>Month</u>	<u>Flowrate (GPM)</u>
January	1,180,874
February	1,135,991
March	1,126,117
April	4,241,453
May	9,281,825
June	12,477,502
July	8,150,771
August	3,260,308
September	2,784,099
October	2,773,327
November	1,917,855
December	1,732,039

Flowrates obtained from the United States Department of the Interior, Geological Survey, Water Resources Division, as determined at the Cisco, Utah, measuring station.

Note: The flowrates reported to Atlas Minerals of October, November and December are provisional and are subject to revision by the Department of the Interior.

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