

MAY 21 1965

File:

Atlas Corporation, Moab, Utah File

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Division of State & Licensee Relations, HQ

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Original signed by  
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LICENSE NO. SUA-712, DOCKET NO. 40-1376

CO:IV:GHS

The following information supplements paragraphs 19 and 28 of the report of the February 17-19, 1965, inspection of the subject licensed facility.

The result of the analysis of the air sample (paragraph 19) was received from the Analysis Branch, Health & Safety Division, ID, on March 9, 1965; the results of the analyses of the liquid effluent samples (paragraph 28) were received from ID on May 10, 1965. The licensee was contacted by telephone on May 10, 1965, and the caller (G. H. Smith) was informed that they had not started their analyses. On May 18, 1965, Mr. H. G. Baty, Radiation Control Technician, Atlas Corporation, Moab, Utah, reported the results of their analyses of the duplicate liquid effluent samples by telephone (Mr. Baty's name was misspelled in the aforementioned report). The results of the analyses are attached.

It should be noted that the concentration of natural uranium which was observed in the breathing zone sample is 33 times the applicable MPC for 168 hours of exposure in any 28 consecutive days. Unfortunately the licensee's operations were terminated before they could collect breathing zone samples and evaluate the time-weighted exposures to airborne natural uranium of the yellow cake packaging personnel. However, the licensee reported in their reply to our Form AEC-592 that they had determined the exposures to concentrations of airborne natural uranium of their employees during the decommissioning of the yellow cake dryer and packaging mechanism. Mr. Baty stated that during the decommissioning of this equipment the employees wore "lapel type" air

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samplers during the entire operation and that the samplers were frequently checked to assure that the collection ability of the samplers was not adversely affected by build-up of material on the collection media.

It should be noted that, with the exception of natural uranium, the concentrations of the various isotopes in the barren raffinate, as reported by ID, are in excess of the AEC limits for average annual release of these isotopes in the soluble form. There is a significant variance in the concentrations of Ra-226 and Th-230 as reported by ID and the licensee. This variance is probably a direct result of a difference in ID's and the licensee's analytical procedures. Prior to analysis of a sample, the ID procedure calls for acidification of the sample with a 2% solution of HCl (page 9, "Determination of Radium 226 and Thorium 230 in Mill Effluents", by Ebersole, et al), whereas, Mr. Baty reported that prior to analysis they filter the sample. Mr. Baty stated that their rationale for filtration is based on their interpretation of "solubility" as meaning soluble in the carrying fluid. We prefer the ID technique because it is our opinion that "solubility" is defined as being soluble in human body fluids and acidification with dilute HCl would be more representative of the process which takes place in the human gut.

Operations at the subject licensed facility were terminated on March 1, 1965, therefore, additional samples are not available. A citation for release of concentrations of Ra-223, -224, and -226, Th-228 and 232, Pb-210 and Po-210 in excess of the 10 CFR 20, Appendix E, limits is not applicable based on the results of a single sample because concentrations may be averaged over a period of one year (10 CFR 20.106(b)). A citation for noncompliance with Condition No. 12.A.(2) of the subject license is warranted; however, because the subject licensed facility is no longer in operation we feel that this citation would serve no useful purpose.

Based on Mr. McCormick's statement during the inspection, that they had not processed Alaskan ore since the previous inspection, the concentrations of Th-232, Th-228, and Ra-224 in the barren raffinate were surprising. However, Mr. Baty stated that during the process of scraping the ore pads prior to decommissioning they had probably uncovered some previously unprocessed Alaskan ore. It should be noted that the licensee was processing the scrapings from the ore pads at the time the barren raffinate sample was collected.

Attachment

Results of Analyses (as noted above)

cc: CO:HQ, w/attach.

bcc: Atlas Corporation, Moab, Utah File ✓

## BREATHING ZONE AIR SAMPLE

Operation	Operation Time and Sample Time	Nat. Uranium $\times 10^{-11}$ uc/ml	$\times$ MPC
Auger sampling of a full barrel of yellow cake.	3 minutes	190	33.3

## LIQUID SAMPLES

[illegible]

- 1/ Not analysed for this isotope by licensee.
- 2/ Suspended solids which were not soluble in 2% HCl.
- 3/ Baty stated that this result was  $<0.3 \times 10^{-8}$  uc/ml.
- 4/ Not analysed for this isotope by AEC.