

File

February 8, 1967

John J. Ward, Investigation Specialist
Region IV, Division of Compliance, Denver

Original Sent by
John J. Ward

COMPLIANCE INQUIRY MEMORANDUM - ATLAS MINERALS DIVISION,
ATLAS CORPORATION, MOAB, UTAH, LICENSE NO. R-161 - MISCELLANEOUS

40-3453

At 4:45 PM on February 6, 1967, T. F. Izzo, Mill Superintendent of subject licensee, telephoned Region IV to report an incident of a release of tailings pond liquid to the Colorado River. He stated that this had occurred at about 10:00 AM on February 6, when ice on the main tailings pond had cracked the overflow pipe in a decant tower, thus diverting liquid to an overflow pond which had itself overflowed. This had caused a flow directly to the Colorado River of approximately 1500 to 2000 gallons per minute and which would continue until February 7 or 8, at which time the overflow could be stopped by means of an earthen dike. Izzo stated that a weir was being placed at the point of overflow so that a more accurate measurement could be made. He stated that past analyses of the tailings pond liquid had established that it was consistently less than MPC in thorium, polonium and uranium, but that it has varied from 0.5 to 2 X MPC for radium-226. Izzo stated that ordinarily the radium is precipitated out of the liquid by introduction of a barium salt before its routine discharge to the river. This information was passed on to J.R. Roeder by D.I. Walker in a telephone conversation to Roeder's home at 5:00 PM, MST, on February 6.

On February 7, 1967, a telephone call was made to Izzo for additional information and he gave the following details on the incident.

The slurry effluent from the mill normally flows first to a "scalping" pond where most of the suspended solids (tailings) are dumped. The liquid from this pond then goes to the main pond where the bulk of the remaining fines are deposited. In this main pond there are two "decant towers" or overflow stand pipes, which siphon off the clear liquid as it rises in the pond (see sketch, attached). One of these pipes leading to a pond south of the main pond had been sealed off when another pond to the east was put into use. The other overflow pipe leads to this east pond and is normally used to draw off the

cc: R.G. Page, DS&LR, w/attach.
J.R. Roeder, CO:HQ, w/attach.

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liquid from the main pond. Under normal circumstances as the liquid is drawn into the east pond, barium chloride solution is added in a metered flow from a tank near the adit of the east pond. The barium causes the radium to precipitate out of the liquid to the bottom of the east pond. The liquid is allowed to rise in the east pond until it overflows a weir where the flow is measured at the beginning of a channel which leads to the river.

On February 6, 1967, ice which had formed on the top of the main pond caused the unused overflow stand pipe to crack. This permitted liquid from the main pond to flow into the empty south pond. This pond quickly filled and overflowed its bank at a point where the liquid followed the old channel to the river. Within two hours of the discovery by the licensee of this additional flow of effluent to the river, a barium chloride tank had been installed at the south pond to precipitate the radium in that liquid. Additionally, a weir was installed on the downhill side of the pond where the overflow had occurred. Measurements at this weir indicated a flow of 600 gallons per minute.

In the two hours the untreated liquid had overflowed the bank of the south pond, an estimated 72,000 gallons were released to the river ($600 \text{ gpm} \times 120 \text{ minutes} = 72,000 \text{ gallons}$). The MPC for radium-226 from Appendix B, Column II is $3 \times 10^{-8} \text{ } \mu\text{c/ml}$. Assuming the concentration was $2 \times \text{MPC}$, or $6 \times 10^{-8} \text{ } \mu\text{c/ml}$, the concentration released to the river is below the maximum averaged yearly concentration permitted under the license, which at the 600 gpm rate is $30 \times 10^{-8} \text{ } \mu\text{c/ml}$, ($6000/600 \times 3 \times 10^{-8} \text{ } \mu\text{c/ml} = 30 \times 10^{-8} \text{ } \mu\text{c/ml}$). This incident is not reportable under 20.403(a)(2) or 20.405(a)(3).

Izzo stated that the normal flow from the east pond is approximately 600 gallons per minute, but that it often goes as high as 1200 gallons per minute. Therefore, even with the effluent being released to the river from two points, the flow was not over that which occasionally occurs from the one point. He stated an earthen dike is being built around the decant tower for the south pond so that it can be worked on. This dike will effectively shut off the flow of liquid from the main pond to the south pond and will be completed on February 8.

Izzo stated there has been no publicity concerning the incident. He stated he will furnish a 30-day report to Region IV.

Lynn Thatcher of the Utah State Health Department and Phillip J. Coffey, Federal Water Pollution Control, were informed of the incident in telephone calls by the Region IV Director, February 6 and 7.

No further action by Region IV.

Attachment:

Sketch