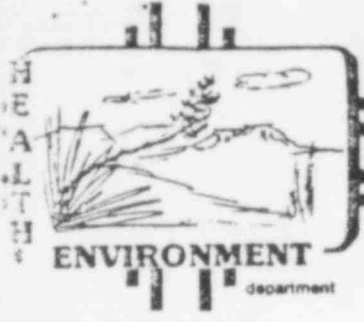


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STATE OF NEW MEXICO

ENVIRONMENTAL IMPROVEMENT DIVISION
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(505) 827-5271

Thomas E. Baca, M.P.H., Director

Radiation Protection Section

Bruce King
GOVERNOR

George S. Goldstein, Ph.D.
SECRETARY

Larry J. Gordon, M.S., M.P.H.
DEPUTY SECRETARY

June 25, 1979

Ross A. Scarano, Section Leader
Uranium Mill Licensing Section
Fuel Processing & Fabrication Branch
Division of Fuel Cycle & Material Safety
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555



Dear Mr. ^{Ross} Scarano:

Transmitted herewith is a copy of the Division press release made June 21, 1979, and a copy of the Director's letter to Mr. Bokum dated June 21, 1979, regarding disapproval of the Bokum Resources Corporation Discharge Plan.

This confirms information given to Mr. Manger on June 21.

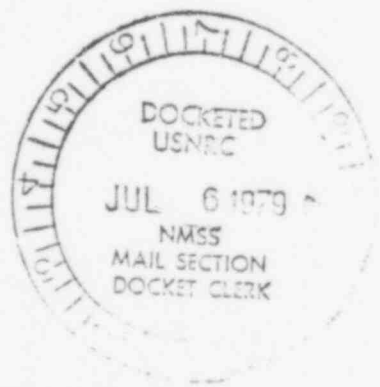
Sincerely,

al

Alphonso A. Topp, Jr.
Program Manager
Licensing & Registration Unit

Enclosure

AAT:ns



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FOR IMMEDIATE RELEASE

June 21, 1979

Contact: Doug Barber
827-5271-Ext. 260

SANTA FE --- Thomas E. Baca, Director of the Health and Environment Department's Environmental Improvement Division, announced this morning that the EID, following review of materials brought forth by various parties concerning the Bokum Resources Corporation's Discharge Plan, has disapproved that plan.

Bokum's discharge plan deals with a uranium tailings retention area which will hold roughly 20 million tons of tailings from their uranium mill in Marquez Canyon. Tailings are solid and acidic liquid waste products from the milling process and contain toxic and low-level radioactive materials. This retention area is placed right at the confluence of several arroyos, one being a constant water bearing stream. Above the tailings retention area, a diversion system has been designed to divert the stream and any other surface and ground water around the tailings. The tailings retention area is located

-more-

516 033

Bokum - Decision
AD-1

at the focal point of a 10-square mile drainage system and could possibly experience some severe high energy flooding due to storm runoff.

Following a long series of visits to the proposed site by EID staff and consultants, several meetings with Bokum administrators and a six-day "marathon" public hearing on the proposed plan and subsequent analysis of materials presented at the hearing, the Division feels an obligation to deny the application for the Discharge Plan submitted by Bokum in the interest of public health, safety and well-being.

Before a discharge plan can be approved by the director, the proposed discharge plan must demonstrate that the requirements of the Water Quality Control Commission Regulations have been met.

Bokum has chosen a site for uranium mill tailings disposal which is not isolated from either surface water or ground water resources which are extremely vulnerable to contamination. The site selected is one which affords little or no natural protection of shallow ground water resources, and one in which, if contamination were to occur, cleanup might not be possible. In selecting this particular location, the applicant assumed a greater burden of responsibility to demonstrate that contamination will not result from the project than is generally assumed by other applicants. Similarly, many aspects of the project required more detailed examination by the EID staff than might otherwise be necessary if a site adequately isolated from surface and ground waters had been proposed.

-more-

516 034

Bokum - Decision
AD-2

To isolate the tailings retention area from natural disruptive forces, the Company is dependent upon elaborate engineering solutions.

The staff feels that the discharge plan is deficient in a number of areas, but primarily, it fails to demonstrate that engineering solutions will be adequate to insure that the WQCC Regulations will not be violated.

During testimony at the hearing, Bokum's own expert witnesses stated they were not aware of any diversion as proposed by this plan. A surface water diversion of this magnitude around a tailings pile has not been tried elsewhere and field-proven. Further, this diversion system is expected by the applicant to require continuous maintenance during the life of the operation and thereafter.

Another unique feature of this plan is the proposal to have the diversion channel cut by natural erosion rather than by mechanical construction. The designer of this system admitted that he had no previous experience in the design of such a system.

A plan that contains new experimental features which have not been proven in the field, must have conservative factors of safety in the engineering design in case real world events do not exactly follow theoretical predictions.

We cannot agree with the applicant, that this design is over-conservative and results in a design having a large margin of safety.

There are not adequate restrictions prohibiting well water drilling within the pond area after the land reverts to previous owners when operations are completed. The applicant does not have rights to the leased property

after cessation of operations. Although there is a restrictive covenant in Bokum's Supplemental Submission Appendix F, February 5, 1979 (EID Exhibit 1-C), the applicant will not have any right to be on the land and, will have no interest in the covenant or inclination to enforce it. It will be extremely difficult for the State to enforce such a covenant unless regular inspections of the premises are made at relatively short intervals to insure that no wells are drilled into the tailings retention area. This would incur another cost upon the State and would entail yet another of the applicant's responsibilities which it attempts to transfer to the State.

An additional problem occurs, in that the restrictive covenant does not cover the "El Bosque" tract which is also, in part, underneath the tailings area. The owners of that tract could remove the water within the pond area at will in the reasonably foreseeable future.

The applicant has not satisfied the burden of showing that the ground water under the tailings pond, which will become highly contaminated during the operation, will not be used in the reasonable foreseeable future. All that has been provided is a restrictive covenant which will be extremely difficult to enforce and only covers part of the tailings area.

Testimony presented during the hearing by Dr. Runnells, EID's geo-chemical consultant, indicates that a relatively small (a fraction of 1% (0.05%) of the total project volume) loss of solid tailings down Salado Creek by water or wind erosion will, with virtual certainty lead to a violation of all the numerical standards in the ground water regulations. This gives one a very vivid appreciation for just how vulnerable the site is. The question

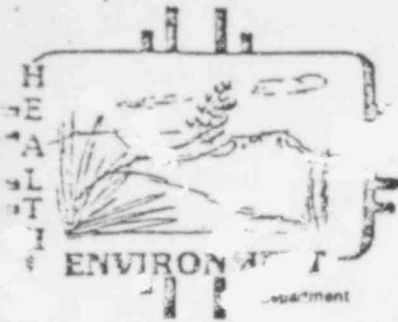
Bokum - Decision
AD-4

before the Division becomes: How certain are we that such losses of tailings solids down Salado Creek will not occur during the time before or after Bokum abandons the site?

The EID staff feels that the presence of a major diversion works directly above the tailing disposal area is particularly inappropriate and dangerous in this case where shallow ground water resources are so vulnerable. Such a diversion constitutes a threat to the integrity of the tailing disposal area in perpetuity.

Consequently, the EID feels that as long as such a major diversion of Canon de Marquez around the tailings area with its inherent risks and uncertainties is part of Bokum's proposal to the Division, the plan should be disapproved.

Finally, it must be made clear that this denial is in no way a final denial to Bokum Resources Corporation. It is a denial of this proposed discharge plan. If and when Bokum comes forth with an approvable plan, it will be approved as have the plans submitted by other operating members of the industry.



STATE OF NEW MEXICO

ENVIRONMENTAL IMPROVEMENT DIVISION

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DEPUTY SECRETARY

June 21, 1979

Mr. Richard D. Bokum II
President
BOKUM RESOURCES CORPORATION
P. O. Box 1833
Santa Fe, NM 87501

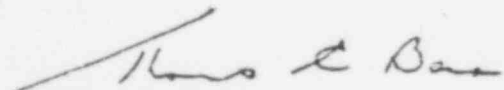
Dear Mr. Bokum:

The Environmental Improvement Division has completed its review of your proposed discharge plan (DP-43) and the record of the public hearing conducted on May 1 through May 6, 1979.

It is my duty as director to inform you that the plan is hereby disapproved. I am including a copy of my findings of reasons for disapproval for your information.

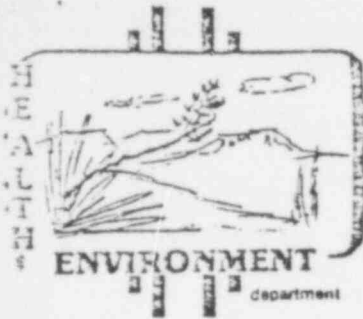
It is important to note that the disapproval extends only to the proposed plan. Should you desire to present an alternate proposal, the Division would be most happy to work with you on developing an approvable discharge plan.

Sincerely,


Thomas E. Baca
Director

Enclosure

516 038



STATE OF NEW MEXICO

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Larry J. Gordon, M.S., M.P.H.
DEPUTY SECRETARY

June 20, 1979

IN THE MATTER OF)
BOKUM RESOURCES CORPORATION)
PROPOSED DISCHARGE PLAN, DP-43)

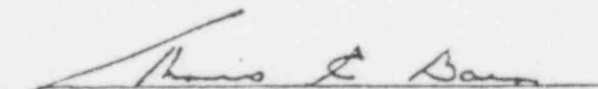
A hearing on the proposed discharge plan submitted by Bokum Resources Corporation (DP-43) was conducted by the Environmental Improvement Division of the New Mexico Health and Environment Department on May 1 through May 6, 1979 in response to numerous requests. I have reviewed the record of that hearing, and find it my duty to disapprove the proposed discharge plan (DP-43). I am in general agreement with the Summary Statements submitted by the Environmental Improvement Division, and where referenced in the findings with the Summary Statement submitted by Sandoval Environmental Action Community (SEAC). I have listed below my findings on which I base the disapproval of the proposed discharge plan (DP-43).

The Applicant, Bokum Resources Corporation, proposes that mill tailings effluent from its proposed uranium processing mill at Marquez, New Mexico, be deposited in a mill tailings containment area near Marquez. The Applicant proposes that the mill tailings containment area would be an essentially impervious basin. It is relying on a naturally occurring geologic formation, the Mancos Shale, to form the bottom and one side of the containment area. It is also relying on engineered structures to divert existing ground and surface water and retain the tailings in the containment area. The application fails on several points.

- a. The Applicant admits that it will cause useable ground water within the confines of the containment area to be polluted at levels far in excess of those prescribed by the New Mexico Water Quality Control Commission Regulations, Section 3-103. It has failed to provide adequate restrictions prohibiting water well drilling within the area after the land reverts to previous owners when operations are completed. (See: Summary Statement, Sandoval Environmental Action Community (SEAC), pp. 5-10; Environmental Improvement Division-Summary Statement, p. B-1, C-8).

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- b. The Applicant has proposed diverting high energy flood waters from the Canon de Marquez drainage system by a dam and channel structure. This diversion as proposed is inadequate to insure that tailings will not be released and contaminate ground water that is presently used or would be used in the reasonably foreseeable future. Processes which could lead to failure of the diversion channel include aggradation reducing channel freeboard, leading to overtopping by flood flows and likely erosion of the dam, primarily at the point of diversion as well as possible erosion of the diversion dam and channel sidewalls by riping and associated bank collapse. (See: Environmental Improvement Division-Summary Statement; pp. A-1, B-2, B-3, C-1, C-2, C-3; Witness Robinson's testimony; Transcript Vol. VII, pp. 1692-1696.)
- c. The integrity of the tailings and diversion systems depends upon continued post-operational surveillance and maintenance. Inadequate provisions have been made by the Applicant for such long-term activities. (See: Environmental Improvement Division-Summary Statement; p. C-4; Witness Robinson's testimony; Transcript Vol. VII, p. 1723.)
- d. The tailings dam must be equipped with a spillway upon cessation of operations by requirement of the State Engineer. The Applicant has failed to demonstrate how this requirement will be addressed in relation to final stabilization so as to prevent tailings escaping through the spillway and contaminating downstream ground waters. (See: Environmental Improvement Division-Summary Statement; Witness Runnells' testimony; Transcript Vol. VI, p. 1526.)
- e. The Applicant has failed to adequately demonstrate the absence of possible faults in the proposed containment area even though a previously unsuspected fault was found during excavation at the dam site. If faults exist, they could have a serious effect on the long-term stability of the diversion and tailings dams. (See: Environmental Improvement Division-Summary Statement; pp. A-2, B-2, C-6.)
- f. The Applicant has failed to adequately consider the implications of the potential for chemical interaction between the acidic liquid tailings and the calcareous Mancos Shale and tailings dam materials. The interaction may cause reduction of tailings dam stability due to generation of high pressure gas and reduction in storage capacity of the tailings pond due to swelling of underlying clays and shales. (See: Environmental Improvement Division-Summary Statement; pp. A-2, C-5.)
- g. The other deficiencies noted by the Environmental Improvement Division in its Summary Statement, on page A-2, also constitute reasons for this disapproval.


THOMAS E. BACA
DIRECTOR

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