

Chino Mines Company
Hurley, New Mexico 88043
505 537-3381

June 30, 1988

Rec'd from
R. Mitzelfelt by
technical staff
on July 15, 1988

HAND DELIVERED

Mr. Richard Mitzelfelt
Deputy Director
N.M. Environmental Improvement Division
P.O. Box 968
Santa Fe, NM 87504-0968

Dear Mr. Mitzelfelt:

Re: Proposed Discharge Plan for Tailing Pond No. 7
(DP-484)

This letter represents Chino Mines Company's (CMC) response to the Division's offer to approve Discharge Plan 484 (the Plan) with certain conditions. We believe the conditions outlined below and the materials submitted with this letter adequately address all items agreed to during our meeting, and CMC hereby requests immediate approval of the Plan for a five-year period.

1. CMC will retain a consultant to conduct a study to determine the feasibility of seepage reduction measures to the sand beach area of the No. 7 Tailing Pond. A report on this investigation will be sent to the EID within 180 days from the date of discharge plan approval.
2. CMC will compile the documentation of the assumptions used in the modeling conducted of seepage flow from the No. 7 Tailing Pond and send this documentation to the EID within 45 days from the date of discharge plan approval.
3. Within 2-1/2 years from the date of discharge plan approval, CMC will install and begin to operate an interceptor well system downgradient of the No. 7 Tailing Pond. A study will be conducted during the first 18 months of discharge plan approval to define the aquifer characteristics and determine the location and configuration of the interceptor well system.

Each well in the interceptor well system will be started on an individual basis when sulfate levels reach 600 mg/l at the well. A well may be turned off if the sulfate level falls below 600 mg/l and restarted if the sulfate level rises again.

CMC will pump each well of the interceptor well system until such time that the concentration of sulfate remains below 600 mg/l for 8 consecutive quarters after cessation of tailing deposition on the No. 7

EXHIBIT

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Tailing Pond or until the time that seepage from the No. 7 Tailing Pond will no longer elevate the concentration of sulfate in the groundwater to the standard in the WQCC regulations at the property line as indicated by modeling.

4. Prior to the well installation outlined above but no later than 30 months from the date of discharge plan approval, CMC will model the seepage flow from the No. 7 Tailing Pond in the same manner as has been done during the present period of EID consideration of the proposed discharge plan, except that the sulfate concentration to the model will be the actual sulfate concentration in the No. 7 Tailing Pond decant return water at that time. Also, the seepage rate to the model will be the seepage rate determined by a water balance conducted at the No. 7 Tailing Pond during the period from 24 to 30 months after approval of the discharge plan.

A report on this modeling will be sent to the EID by 33 months from the date of discharge plan approval. If this modeling continues to show that the seepage from the No. 7 Tailing Pond will not result in a violation of the sulfate standard of 600 mg/l at the property line, CMC will conduct no further modeling.

If this model indicates that the seepage from the No. 7 Tailing Pond will result in a violation of the sulfate standard at the property line with the operation of the interceptor well system, CMC will immediately begin a study to determine how the sulfate standard will be protected at the property line. A report on this study, if deemed to be necessary, will be sent to the EID by 36 months from the date of discharge plan approval.

5. CMC will comply with all commitments contained in submittals relating to this Plan made to the EID beginning with the original Proposed Discharge Plan dated May 6, 1987, which are integral to the present formulation of this Plan as outlined herein. These submittals are as follows:

05/06/87	Original DP-484
12/15/87	Pump Testing Plan
02/09/87	Well Closure Plan to State Engineer
04/28/88	Letter to Ms. Ardito Containing First Contingency Plan Proposal
05/04/88	Letter to Ms. Ardito Containing Additional Information
06/01/88	Letter to Ms. Ardito Containing Second Contingency Plan Proposal
06/06/88	Letter to Ms. Ardito Containing Supplemental Information

The CMC proposal contained in the June 1, 1988 and June 6, 1988 submittals concerning the net removal of sulfate from the Whitewater Creek drainage has been supplanted by the interceptor well system described above.

6. CMC believes that the 1,500 gpm input to the modeling effort represents a very conservative estimate of that value. The initial modeling efforts conducted by Golder Associates for CMC utilized excessively conservative estimates of tailing pond seepage quantity and quality of 2,000 gpm seepage and 2,000 mg/l sulfate.

In order to quantify the seepage more accurately, two approaches were utilized. The first was to develop an analytical approach to estimating seepage. The second method was to assume that seepage from Tailing Pond No. 7 will not differ greatly from existing Tailing Pond No. 6 and that water balance calculations could be used to estimate seepage quantities. On the basis of these two methods, we determined that a still conservative yet more appropriate seepage rate of 1,500 gpm should be used with the No. 7 Tailing Pond. Descriptions of the two methods have already been supplied to you.

CMC instructed Golder Associates to study the seepage contribution from only Tailing Pond No. 7 assuming seepage quality inputs of 2,000 mg/l sulfate. Recent water quality data for Tailing Pond No. 7 decant water indicates that 2,000 mg/l sulfate is a reasonable seepage quality estimate during the time that mine water is treated at the current rate of 800-1,000 gpm.

Historically, decanted tailing effluent has had sulfate values averaging 1,000 to 1,200 mg/l. In the future, we will treat mine water at a reduced rate currently estimated at 300-400 gpm. Accordingly, the conservative sulfate concentrations input to the model are 2,000 mg/l for the first five years and 1,500 mg/l thereafter. The 1,500 mg/l sulfate level represents a conservative estimate of the quality value, based upon the expected ratio of decant tailing effluent to treated mine water.

Other assumptions employed in the modeling are:

1. Seepage quantity inputs from all sources besides Tailing Pond No. 7 were as assumed in Golder's original model.
2. Seepage quality from sources other than Tailing Pond No. 7 was assumed to be at background sulfate value of 50 mg/l.
3. For the first five years, seepage inputs in Tailing Pond No. 7 were concentrated along the original Whitewater Creek drainage.

Using the inputs described above, a modeling exercise was conducted to determine the efficacy of an interceptor/pumpback system. A network of 13 interceptor wells, pumping at 150 gpm each for a total of 1,950 gpm was represented in the model. The system was considered to have begun after five years of pond operation and continued until ten years after cessation of operation. Plate 2 clearly shows the 600 mg/l contour to have nearly disappeared and to be well within the Chino property boundary after 28 years of pumping. We believe, therefore, that we have demonstrated the feasibility of an interceptor well system for preventing the exceedance of standards at the property line from operation of Tailing Pond No. 7. Plate 3 shows the overall view of the sulfate plume after operation of the pumpback system, and Plate 4 is a no-pumping scenario included for comparison.

Plates 3 and 4 show a net benefit to groundwater quality over a 30-year period by comparing groundwater quality with the operation of the No. 7 Tailing Pond and interceptor well system to quality without operation of this Pond and interceptor well system. CMC believes this modeling represents a conservative estimate of the likely results from the operation of Pond No. 7. The actual results may be better than what is shown here. Based upon this information, we believe the Plan is approvable.

- 7. During the meeting on June 29, 1988, CMC was instructed by the EID to remodel at 30 years utilizing what CMC believes to be an unrealistically conservative seepage rate of 2,000 gpm as an input to the model with all other conditions remaining the same to demonstrate the effect on sulfate concentration flow using this seepage rate. CMC does not believe this shows what realistically could be expected from the operation of Pond No. 7 and submits this information only in accordance with the request of EID. CMC believes that the 1,500 gpm rate outlined in the previous section represents a conservative estimate of the likely seepage. Enclosed as Attachment A to this letter are the results of this modeling using the seepage rate input specified by the EID.

These results show no violation of the sulfate standard at the property line due to seepage from Tailing Pond No. 7 for 30 years with the use of the interceptor well system previously described. Also shown is that there continues to be a net improvement to the system as more sulfate is removed than is inputted from Tailing Pond No. 7.

CMC believes that the above described groundwater modeling, which includes the EID specified case analysis, shows that the discharge plan should be approved as per Subsection 3-109.C.2 of the NMWQCC Regulations or that the discharge plan approval will not result in concentrations in excess of the standards of Section 3-103 or the presence of any toxic pollutant listed in Section 1-101.U.U. at any place of withdrawal of water for present or reasonably foreseeable future use.

- 8. CMC will begin the following groundwater and decant return water monitoring program upon approval of the proposed discharge plan.

- 1. Samples of decant return water from Tailing Pond No. 7 will be obtained quarterly during the months of January, April, July, and October by bailing.
- 2. Samples of groundwater will be obtained at the following wells during the months of January, April, July, and October by bailing or pumping.

7AD	7FS
7BS	7GS
7BD	7LS
7CS	7MS
7DS	7IS
7KS	7JS
7ES	7NS
7ED	7HS
DM5S	DM19S
DM5D	DM19D
DM10S	DM10D

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Wells DM-5 (S&D), DM-10 (S&D), and DM-19 (S&D) are within the No. 7 Tailing Pond area. These wells will be monitored for as long as possible before plugging.

3. The depth to water in all monitor wells will be measured prior to bailing or pumping.
4. The results of the analyses will be sent to the EID upon receipt by CMC.
5. The interceptor wells will be sampled frequently and the samples analyzed for pH, conductivity, and sulfate concentration. This data will be used to operate the interceptor well system. Alternately, continuous reading conductivity meters may be used for this purpose when sulfate concentration can be correlated to conductivity. A report on the operation of the interceptor well system will be sent to the EID on a quarterly basis during the months of January, April, July, and October.

Please contact me if there are any questions or comments on the above information and commitments. Based upon these submissions and our agreement, we look forward to the receipt of your immediate approval of the Plan.

Very truly yours,



D. P. Milovich
Manager

MRK:lqm

Attachments