

**STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION**



IN THE MATTER OF:)
)
PETITION FOR A VARIANCE FROM)
REGULATIONS FOR THE TYRONE MINE)
SAVANNAH PIT LEACH STOCKPILE,)
)
FREEPORT-MCMORAN TYRONE, INC.,)
)
Petitioner.)
_____)

No. WQCC 11-03(V)

**NEW MEXICO ENVIRONMENT DEPARTMENT'S
RESPONSE TO VARIANCE PETITION**

Pursuant to the Adjudicatory Procedures of the New Mexico Water Quality Control Commission ("Commission"), 20.1.3.18.A(3) NMAC, the New Mexico Environment Department ("Department") hereby submits its Response to Variance Petition ("Response"), in response to the Petition for Variance, WQCC Regulations 20.6.2.3109(C) and 20.6.2.3109(H)(3) NMAC Tyrone Mine Savannah Pit ("Petition"), filed by the Petitioner, Freeport-McMoRan Tyrone, Inc. ("Tyrone") on June 29, 2011. The Department does not object to the Petition, and recommends that the Commission grant the Petition with conditions as set forth below.

I. BACKGROUND

Tyrone owns and operates a large copper mining facility ("Tyrone Mine") located approximately ten miles southwest of Silver City, in Grant County, New Mexico. The mine covers an area of approximately 9,000 acres. The Tyrone Mine consists of eight open pits, associated waste rock piles and leach stockpiles, collection systems, and a solvent extraction electrowinning plant. Operations at the Tyrone Mine consist of removing copper ore from the open pits and placing the removed rock into leach stockpiles. An acidic raffinate solution is is sprayed over the tops of the piles

and allowed to percolate through the underlying ore material. The raffinate leaches the copper from the ore as it moves through the piles. The copper-laden raffinate, or pregnant leach solution (“PLS”), is collected at the toe of the piles. The PLS is then pumped to the electrowinning plant where the entrained copper is removed by an electroplating process.

Groundwater at the Tyrone Mine is protected under the New Mexico Water Quality Act (“WQA”), NMSA 1978, §§ 74-6-1 to 74-6-15. Groundwater at the Tyrone Mine contains less than 10,000 milligrams per liter total dissolved solids (“TDS”). *See* 20.6.2.3101.A NMAC. Further, the Department has determined – although Tyrone disputes this determination – that groundwater at the Tyrone Mine is at a place of withdrawal of water for present or reasonably foreseeable future use. *See* NMSA 1978, § 74-6-5(E)(3). Because Tyrone mining operations result in discharges of contaminants into this groundwater, the Tyrone Mine is the subject of several groundwater discharge permits that the Department has issued under the WQA. Currently, ten discharge permits address operations at the Tyrone Mine, and one supplemental discharge permit addresses closure of the mine.

One of the open pits is the Savannah Pit, located on the south side of the Tyrone Mine. The 6B leach stockpile is located adjacent to the Savannah Pit to the southwest. One of the operational discharge permits (DP455) covers the Savannah Pit and the 6B leach stockpile. Tyrone plans to create a new leach stockpile within the Savannah Pit, eventually extending the new stockpile to merge with the existing 6B leach stockpile. Tyrone proposes this new leach stockpile to expand its leaching capacity. This activity will result in additional contamination of groundwater in excess of water quality standards. Therefore, Tyrone seeks a variance from certain provisions of the ground water quality regulations.

First, Tyrone seeks a variance from section 20.6.2.3109(C) of the regulations. It provides, in

relevant part:

Provided that the other requirements of this part are met and the proposed discharge plan, modification or renewal demonstrates that neither a hazard to public health nor undue risk to property will result, the secretary shall approve the proposed discharge plan, modification or renewal if the following requirements are met: . . .

(2) the person proposing the discharge demonstrates that the approval of the discharge plan, modification or renewal will not result in concentrations in excess of the standards of 20.6.2.3103 NMAC or the presence of any toxic pollutant at any place of withdrawal of water for present or reasonably foreseeable future use, except for contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC.

20.6.2.3109(C) NMAC. Second, Tyrone seeks a variance from section 20.6.2.3109(H) of the regulations, which provides in relevant part:

The secretary shall not approve a proposed discharge plan, modification, or renewal for: . . .

(3) the discharge of any water contaminant which may result in a hazard to public health.

20.6.2.3109(H) NMAC. The regulations define “hazard to public health” as existing when:

. . . water which is used or is reasonable expected to be used in the future as a human drinking water supply exceeds at the time and place of such use, one or more of the numerical standards of Subsection A of 20.6.2.3103 NMAC, or the naturally occurring concentrations, whichever is higher, or if any toxic pollutant affecting human health is present in the water . . .

20.6.2.7.AA NMAC. Because Tyrone’s proposed new leach stockpile within the Savannah Pit will result in concentrations in excess of the standards of section 20.6.2.3103 NMAC, including health-based standards under section 20.6.2.3103.A NMAC, in groundwater at the Tyrone Mine, Tyrone must receive a variance from these provisions of the regulations. Otherwise, the Department cannot approve a discharge permit for Tyrone’s proposed expansion.

The Commission may grant a variance from any requirement of the water quality regulations.

Under the authority of section 74-6-4(H) of the WQA, the Commission:

[M]ay grant an individual variance from any regulation of the commission whenever it is found that compliance with the regulation will impose an unreasonable burden upon any lawful business, occupation or activity. The commission may only grant a variance conditioned upon a person effecting a particular abatement of water pollution within a reasonable period of time. Any variance shall be granted for the period of time specified by the commission. The commission shall adopt regulations specifying the procedure under which variances may be sought, which regulations shall provide for the holding of a public hearing before any variance may be granted.

NMSA 1978 § 74-6-4(H).

In accordance with this provision, the Commission has adopted procedural rules, as part of the water quality regulations, to govern variances. The regulations provide, in their entirety:

A. Any person seeking a variance pursuant to Section 74-6-4 (G) NMSA 1978, shall do so by filing a written petition with the commission. The petitioner may submit with his petition any relevant documents or material which the petitioner believes would support his petition. Petitions shall:

- (1) state the petitioner's name and address;
- (2) state the date of the petition;
- (3) describe the facility or activity for which the variance is sought;
- (4) state the address or description of the property upon which the facility is located;
- (5) describe the water body or watercourse affected by the discharge;
- (6) identify the regulation of the commission from which the variance is sought;
- (7) state in detail the extent to which the petitioner wishes to vary from the regulation;
- (8) state why the petitioner believes that compliance with the regulation will impose an unreasonable burden upon his activity; and
- (9) state the period of time for which the variance is desired.

B. The variance petition shall be reviewed in accordance with the adjudicatory procedures of 20 NMAC 1.3.

C. The commission may grant the requested variance, in whole or in part, may grant the variance subject to conditions, or may deny the variance. The commission shall not grant a variance for a period of time in excess of five years.

D. An order of the commission is final and bars the petitioner from petitioning for the same variance without special permission from the commission. The commission may consider, among other things, the development of new information and techniques to be sufficient justification for a second petition. If the petitioner, or his authorized representative, fails to appear at the public hearing on the variance petition, the commission shall proceed with the hearing on the basis of the petition. A

variance may not be extended or renewed unless a new petition is filed and processed in accordance with the procedures established by this Section.

Thus, before the Commission can grant a variance, the discharger must show the requirements impose an “unreasonable burden” on the discharger’s activities. The discharger must abate the groundwater pollution within a reasonable period of time. And the variance must be for a period of no more than five years.

Under the Commission’s Adjudicatory Procedures, the Department must review a petition for variance within sixty days after receipt and file a recommendation with the Commission to grant, grant with conditions, or deny the petition. 20.1.3.300.B NMAC. If the Department recommends granting a variance, the Commission must hold a public hearing on whether to grant the variance.

II. RECCOMENDATION

The Department recommends that the Commission grant the variance from sections 20.6.2.3109(C) and 20.6.2.3109(H) NMAC for the new leach stockpile within the Savannah Pit, subject to the conditions set forth in Section III below.

III. CONDITIONS

Any variance granted by the Commission should be subject to the following conditions, some of which are required by the WQA and the regulations:

1. Preliminarily, the Commission must find that the requirements of the regulations would place an “undue burden” on Tyrone if the variance is not granted. NMSA 1978 § 74-6-4(H). Based on the Petition and the information currently available to the Department, the Department is without sufficient information to make a recommendation on this issue.
2. The variance applies only to the new leach stockpile within the Savannah Pit.

3. The variance applies only to exceedence of groundwater quality standards that occur within the hydraulic sink of the Savannah Pit.

4. Tyrone must implement the new leach stockpile within the Savannah Pit, and the operation of the Stockpile, in accordance with the operational discharge permit (DP-455), as modified and approved by the Department after the opportunity for a public hearing.

5. Tyrone must establish financial assurance for the new leach stockpile, and upon cessation of mining operations Tyrone must close the new leach stockpile, in accordance with the Supplemental Discharge Permit for Closure (DP-1341), as modified and approved by the Department after the opportunity for a public hearing.

6. Tyrone must monitor the effects on groundwater resulting from the new leach stockpile within the Savannah Pit, and the operation of the stockpile as part of its approved discharge permit modification. Such monitoring shall include, at a minimum,

7. Tyrone must install synthetic liners in all sumps and pumping stations at the Savannah Pit and associated leach stockpiles.

8. Tyrone must install high density polyethylene pipelines at the Savannah Pit and associated leach stockpiles.

9. Tyrone must provide a contingency plan to address possible releases of contaminants resulting from the Savannah leaching operations that escape the hydrologic sink formed by the Main Pit. The contingency plan must include, at a minimum, notification procedures and corrective action measures to be taken if monitoring wells adjacent to the Savannah Pit indicate anomalies in the potentiometric surface or water quality analyses.

10. Tyrone must provide a detailed feasibility analysis to install a synthetic liner in the PLS

pond to be located in the bottom of the Savannah Pit. The analysis must examine best available technologies for constructing a collection pond capable of properly collecting PLS from the toe of the stockpile, withstanding storm events and undergoing regular maintenance while retaining liner integrity.

11. Tyrone must take all other reasonable and technologically feasible pollution prevention measures to limit other sources of groundwater contamination from the Savannah Pit and associated leaching operations. However, such measures do not include installing a liner beneath the new leach stockpile in the Savannah Pit, or in the adjacent PLS collection pond.

12. The variance must be limited to a period of five years. It may be renewed after five years with the Commission's approval.

13. Upon completion of mining operations, Tyrone must abate water pollution in the Savannah and Main Pits in accordance with the applicable discharge permits and the pollution abatement regulations, 20.6.2.4000 to 20.6.2.4115 NMAC.

These are the conditions that the Department recommends, at this time, that the Commission should place on Tyrone if the Commission grants the variance. The Department reserves the right to recommend additional or modified conditions during the public hearing on the variance to be held before the Commission, scheduled to commence on October 11, 2011.

IV. REASONS

In general, the Department believes that a variance from the requirements of the water quality regulations should be allowed only sparingly, and only in a unique set of circumstances where the goals of the WQA are not compromised. A variance should not be granted, for example, simply because it is more expensive for a discharger to comply with the regulations than not. It is often true

that compliance with environmental regulations is more expensive than not complying with such regulations. Expense alone, even substantial expense, does not justify not complying with regulations designed for protection of New Mexico's limited ground water resources. Moreover, granting a variance based on expense alone would result in an unfair playing field for other operators in the industry who have complied with the regulations, paid the costs for compliance, and built those costs into their operations. In this case, the new leach stockpile within the Savannah Pit and the operation of the new stockpile are characterized by unique circumstances that support the unusual action of granting a variance.

The Department submits the following reasons for recommending that the Commission grant the variance with the conditions set forth in Section III above.

1. *Hydrogeology*

First, the Savannah Pit has a distinct hydrogeological feature, a large active hydrologic sink, which will limit and contain the contamination of groundwater. Given the extensively fractured bedrock at the Tyrone Mine, the groundwater elevations below the open pits, and the continued pumping of water collected in the Main Pit, the portions of the aquifer that would be affected by discharges at the Savannah Pit stockpile would be limited to groundwater beneath and adjacent to the Savannah Pit and, to a lesser extent, the Main Pit. The Main Pit is located in close proximity to the Savannah Pit. And the Main Pit is considerably deeper than the Savannah Pit; the floor of the Main Pit is some 650 feet below lower than the floor of the Savannah Pit. Moreover, the Main Pit has been excavated to a depth that is below the groundwater table, thus creating a cone of depression or hydraulic sink around the Main Pit. Indeed, the Department believes that the depressed water table is approximately 100 feet below the floor of the Savannah Pit. The depressed water table caused by the

Main Pit extends aurally to encompass the groundwater beneath the Savannah Pit.

The unique result of these features is that groundwater beneath the Savannah Pit discharges to the Main Pit. The large hydraulic sink created by the Main Pit encompasses and captures the groundwater beneath the nearby Savannah Pit. Therefore, contaminants that move into groundwater below the Savannah Pit will be captured by the hydrologic sink created by the Main Pit. The groundwater affected by the expansion of the 6B leach stockpile should be limited to groundwater beneath the Savannah Pit, groundwater beneath the Main Pit, and groundwater moving between them. This hydrology will be maintained for as long as Tyrone continues removing water that collects at the bottom of the Main Pit, a requirement of the Supplemental Discharge Permit for Closure.

2. *Extent of Disturbance*

Second, locating new leaching operations within the Savannah Pit will limit the footprint of the mining operations to an area that is already disturbed, and will limit further discharges to groundwater that is already heavily affected by mining. The potential contaminants from the discharge from Savannah include lead, chromium, cadmium, fluoride, aluminum, cobalt, copper, iron, manganese, nickel, sulfate, TDS, zinc, and low pH. The discharge from the new leach stockpile within the Savannah Pit will result in leachate that will exceed numerical groundwater quality standards under section 20.6.2.3103 NMAC, and will exceed existing groundwater quality by a factor of 10 to 1000. By allowing the proposed new waste rock pile and leaching operations to proceed only in an area within the Savannah Pit, further groundwater pollution would be limited to areas that are already adversely affected. On the other hand, if a new leaching and stockpile operation were established in undisturbed surface areas, a larger volume of contaminated groundwater would result.

3. *Limited Leaching Capacity*

Third, Tyrone asserts that the Tyrone Mine has a shortage of stockpile capacity to accommodate the remaining ore reserves. According to Tyrone, current analysis show that the mine has approximately 180 million tons of remaining reserves that can economically leached at current prices. Tyrone estimates that its current remaining stockpile capacity is approximately 150 million tons, therefore resulting in a 30 million ton deficit. Tyrone maintains that the only alternative to constructing a leach stockpile within Savannah Pit is to construct a new leach stockpile near the main entrance of the mine that will be located in an area the groundwater has not been adversely affected by mining operations. The Department currently has no reason to dispute these assertions.

4. *Compliance with Other Requirements*

Fourth, Tyrone will comply with other requirements of applicable discharge permits. Although Tyrone will not be required to meet groundwater quality standards beneath the Savannah Pit during operations, Tyrone will be required to comply with other requirements in its operational discharge permit (DP-455), and its discharge permit for closure (DP-1341). These permits will be modified to address the new leaching operation in the Savannah Pit. These permits contain the following conditions:

- a. Taking certain operational measures to reduce the contamination where technologically feasible and practical such as lining any new booster pumping stations;
- b. Monitoring and reporting;
- c. Implementing a contingency plan to address spills or releases of contaminants;
- d. Complying with the abatement requirements of the regulations, 20.6.2.4000 to 20.6.2.4115 NMAC;

- e. Establishing financial assurance; and
- f. Upon cessation of mining operations, implementing closure measures that will protect groundwater quality into the future.

5. *Abatement of Pollution*

Tyrone will be required to abate water pollution in accordance with the abatement regulations, 20.6.2.4000 to 20.6.2.4115 NMAC. Section 74-6-4(G) of the WQA provides that the Commission “may only grant a variance conditioned upon a person effecting a particular abatement of water pollution within a reasonable period of time.” Tyrone will be required to abate the water pollution resulting from the Savannah operations in accordance with the Commission’s abatement regulations.

V. RESERVATION OF RIGHTS

Nothing in this Response shall be construed to infer that groundwater affected by the proposed discharge is not located at a “place of withdrawal of water for present or reasonably foreseeable future use” based upon an interpretation of the WQA, the water quality regulations, and the decision in *Phelps Dodge Tyrone, Inc. v. Water Quality Control Commission*, 2006 NMCA 115, 143 P.3d 502 (Ct. App. 2006). Further, the Department does not intend statements made in this Response to be, nor shall they be construed as, a waiver of the Department’s position in any proceedings related to a determination of groundwater having a “place of withdrawal of water for present or reasonably foreseeable future use” and no parts of this Response shall be used in a manner inconsistent with the Department’s reservation of rights.

VI. CONCLUSION

For the foregoing reasons, the Department recommends that the Commission grant the variance subject to the conditions set forth in Section III.

Respectfully submitted,

Dated: August 23, 2011

A handwritten signature in black ink, appearing to read "Charles de Saillan", written over a horizontal line.

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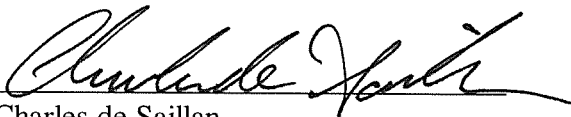
CERTIFICATE OF SERVICE

I hereby certify that on this 23rd day of August, 2011, a copy of the foregoing New Mexico Environment Department's Response to Variance Petition was served by electronic and first class mail on the following:

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