

TO: STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION
Rm. N-2150
Harold Runnels Bldg.
1190 St. Francis Drive
Santa Fe, NM 87502

FROM: MAX YEH, PRIVATE CITIZEN
P.O. Box 156
104 Elenora Street
Hillsboro, NM 88042

RE: Case No. WQCC 12-01(R), Proposed Amendments to 20.6.2 NMAC, THE
COPPER MINE RULE

DATE: April 16, 2013

My name is Max Yeh. I live in Hillsboro, Sierra County, where the Copper Flat Mine, referred to in William C. Olson's written testimony, is being developed by New Mexico Copper Corporation. I am testifying as a member of the interested public whose property, water, may be damaged by the proposed rules regulating the copper mining industry. I also speak for the Percha/Animas Watershed Association, formed to "watchdog" the Copper Flat Mine Project.

I. The Water Quality Act is part of a group of statutes therein designated as the "Environmental Improvement Act." As such, its stated intent is to improve New Mexico's waters for the health of its wildlife and people. This stated intent is based on the presumptive notion that people need an available supply of healthy water. In New Mexico that supply is threatened by an overall lowering of groundwater levels and also by pollution which removes water from availability. While the Water Quality Act directly addresses the pollution threat, the Commission cannot ignore that the issue

behind the act is the supply of healthy water, that is, the quantity of healthy water available. Thus the question of water quantity is integral to the presumptive basis of the Water Quality Act. The Water Quality Act intends to increase and improve the supply of healthy water in New Mexico, an intention more prominent because of the water scarcity.

While by statute and administrative procedures, New Mexico separates the issue of water quantity and water quality, these categories are inseparable in reality. This inseparability is recognized by the very presence of the Office of the State Engineer in this Commission. Water is water.

Clearly, the Commission makes no determination about water quantity, yet the quantity of available clean water must form the background of its consideration of ways to improve water quality in NM. Will these new rules increase or decrease the potable water supply in NM?

II. The Copper Mining Industry not only produces abnormal amounts of waste material and waste water that need to be isolated from groundwater, but it also uses an abnormally large quantity of groundwater in its processes (over 21,000 af/a for the mines in Grant County [NM OSE 2005 Report]). Since this clean water is turned into polluted water and isolated from groundwater, a large quantity of healthy water is depleted from our supply. The Commission need not add to that already large depletion by adopting rules that would allow unlined tailings and waste rock storage that result in an extended zone of groundwater contamination.

Furthermore, this method of containment which allows pollution from tailings and waste rock storage to be recycled by pumping contaminated groundwater

back up gradient requires the industry to use even more water than they otherwise would, thereby guaranteeing additional depletions of healthy water. Rules that foment such practices must be considered detrimental to the purpose of the Water Quality Act.

III. Considering the question of a healthy water supply, the Commission should bear in mind that the loss of healthy water in copper mining is immense. At Copper Flat Mine, which will be a small facility, New Mexico Copper Corporation proposes to use and thus deplete about 3,200 af/a [*Copper Flat Mine Plan of Operation*, rev. 2011]. The total water use of 10,000 people in Silver City is only 2,700 af/a [Town Silver City 2012 Water Report]. The Commission might improve our supply of healthy water by requiring large discharges of waste water be off-set by adequate replacement of the healthy water that is taken from the public supply. Water treatment, thus, returns the clean water that the public gives free to copper mines. Municipalities and households do this; why not copper mines?

IV. If the Commission does not require the return of clean water to the aquifer, then the rules should, at least, require water minimizing practices, for example, the use of dry-stack tailings. However, since dry-stack tailings require extensive energy use and since electrical generation consumes enormous amounts of water (40% of the national water usage is devoted to cooling electrical generation), this suggestion would require technical comparisons of water usage to be made before it can be decided on. But there are other ways of minimizing water use, required recycling, use of flotation devices to prevent evaporation, etc.

V. The interceptor system's way of dealing with polluted groundwater from tailings and waste rock storage requires continuous pumping and depletion of groundwater. How is one assured that there is enough ground water at the location for the duration of the mining operation? While 20.6.7.22A (4) d, viii specifies sufficient water rights for the operation, nowhere does the rule require sufficient water itself. 20.6.7.22A (4) d, vii requires aquifer characterization but is unspecific about sufficient supply of water over the possible long term decline in flows. The algorithms used in aquifer modeling are notoriously inaccurate in prediction. A case in point is Copper Flat Mine, in Sierra County, where the mine-site wells do not produce very much water, so that production waters must be imported from off-site. In that situation, an interceptor system should require quantification of needs as well as demonstration of supply, but the geological formation prevents any accurate computer modeling.

Continuous pumping also requires a continuous source of energy. What happens in a power outage? Will backup generators be required? And, pump failures? Plugged screens? Each stoppage will allow contaminated flows into groundwater.

VI. It is unclear from the proposed rules how groundwater, once contaminated by the open pit, by the tailings, and by waste rock storage, will be perpetually contained or even that its migration can be tracked by the required monitoring wells. Since the proposed interceptor system for handling groundwater pollution under tailings and waste rock storage areas assumes contamination of groundwater, rules for closure should deal specifically with this problem. Is it possible or feasible to isolate contaminated groundwater? How much water is required to dilute contaminated

groundwater, and is that water always available? 20.6.7.33D (2) speaks of pumping water from a flow-through open pit to prevent that water from entering the groundwater, but surely this is not forever. When can the interceptor pumps be turned off? And thereafter, what happens to the contaminated water? In the proposed rules these issues are discretionary. We feel they should be detailed so as to avoid *ad hoc* situations.

Since contamination happens on the molecular and submolecular level, it does not move simply with the water but easily and quickly through water, so that it can move up gradient to the flow and also sidewise. In the case of the interceptor systems, the minimum requirement of only one up gradient monitoring well seems less than needed to detect the size and shape of the contaminating plume since these are dependent on the chemical and physical qualities of what we must assume to be a variegated geological formation. The reality of molecular movements through water suggests also that interceptor wells need to be more than just down gradient of the contamination.

VII. Alternative methods of containment are allowed throughout these rules as is proper to account for technological advance and engineering ingenuity; however, since these alternatives substitute for the rules, the method of approving alternatives must be as rigorous and public as the adoption of the rules themselves. Therefore, we suggest the method of variance as the proper method whereby alternative methods are determined safe. The Commission and the public should take the responsibility of bypassing the rules proper, so that the NMED is not the focus of unwarranted pressure.

VIII. The “grandfather” clauses which allow present pollution to continue unabated are not acceptable relative to the intent of the Water Quality Act. A method must be suggested in the rules that allows a gradual transition to the standards of the new rules, allowing sufficient time for transition. Long term pollution when there are technical means to prevent it should not be written into the rules.

In regards exemptions, there is a seeming confusion in the exemptions to the setback rule [20.6.7.19]. In application to Copper Flat Mine, it seems that the drinking water wells there will be exempt from the setback rule because the discharge permit has already been applied for and also because sub-clause E (2) exempts wells on the mine’s property. Furthermore, should new drinking wells be drilled after the permitting, these too will be exempt from the setback rule [E (3)]. While normal human consumption standards for wells would apply to all the wells at Copper Flat Mine, it would seem that the degree of protection the miners’ drinking water gets is less than normal. Since these wells are allowed by this rule to be very close to a contamination site, one might expect that testing of these wells for safety might be more frequent and stringent than normal.

IX. Freeport McMoRan’s *Consolidated Response* ... argues that the Commission must make rules that consider the interests of the industry. While such balancing may lie in the province of the legislature and of the courts, it is not specified in the Water Quality Act that the general interests of the copper industry as a whole play a part in the making of the rules for a specific part of that industry. In so far as these rules are industry specific, they must consider the nature of copper mines and not the interests of the copper industry as a whole. The Commission does this by making the rules doable within the

capacity of copper mining companies. It need not consider the general human uses of copper or of the whole copper industry's activities and needs. Freeport McMoRan has presented their financial balance sheets [John Brack, Exhibit 2] and thus gives evidence of their economic capability to eliminate pollution of groundwater. Similarly, it is perfectly within the industry's capacity, technology, and economy to return healthy water to the ground through water treatment.

If the interests of the whole industry must to be considered, then the industry must be asked to lay these interests out beyond simply affirming the general usefulness of copper, perhaps with explanations of why copper recycling plants in the US are closing while mining is expanding during a period of world economic decline as evidenced by Freeport McMoRan's own exhibits, why production of copper rises while its use declines [John Brack, Exhibit 6 and 7, p. 3, "substitutes"], and how the industry is fueled by speculation, massive stockpiling of copper, and the notion of "peak copper."

Indeed, during the recession copper came to be a safe-haven commodity that can be hoarded, like gold. Between 2003 and 2008 commodities speculation increased 1,900%, driving energy and metal prices up 230% [John Baffes and Tassos Haniotis, "Placing the 2006/08 Commodity Price Boom in Perspective," *The World Bank Development Prospects Group*, July, 2010]. In 2010, news was released that a single unidentified trader controlled 80% to 90% of the copper in the warehouses of the London Metal Exchange [www.marketmoves.com, 23rd December 2010, online]. At the end of 2012, the SEC approved a fund which stockpiles copper [Lina Khan, "JP Morgan Gets a Big Holiday Gift from the SEC," *New Republic*, December 31, 2012].

You can now buy a 1 kilogram bullion of 99.99% pure copper for \$15 on the internet. If that ingot is mined and produced in New Mexico under the proposed new rules, without water treatment, without requiring significant amounts of make-up water and without serious conservation methods, the process would contaminated well over 150 gallons of our free, clean water [Bleiwas, “Estimated Water Requirements for the Conventional Flotation of Copper Ores,” USGS, 2012]. At Copper Flat Mine, because of the low ore grade, water use could be 2 or 3 times that. At my grocery store a gallon of purified water sells for \$1.50, so we would give the mining industry \$225 worth of water so it can make \$15 of copper for someone to hoard. Severe water conservancy, as Freeport McMoRan practices at Morenci, Arizona, can reduce water consumption drastically to about \$15 of water to produce that \$15 ingot. Even then it is unsustainably bad business. The New Mexico mine that produced that ingot could increase its profits 1,500% if it sold water instead of copper. And, if New Mexico sold that water, it could pay for all the jobs and economic benefits that Freeport McMoRan now does, and still have quite a lot more. And, it could improve the supply of healthy water as the Water Quality Act envisions.

This calculation of comparative retail market value uses numbers favorable to the industry: \$15 a kilogram for copper which doubles the industrial copper value of \$3.50 a pound and ore at 0.5% copper concentration instead of the much lower 0.2% found at Copper Flat Mine. Even then, it demonstrates that the net economic impact of copper mining in New Mexico is negative, and largely so, contrary to the rosy economic impact studies the industry puts out which are gross calculations not taking into account the costs of water to the public.

We think the Commission is charged by the Water Quality Act to control and improve our supply of healthy water, not to prolong and increase its degradation by approving these new rules.

X. We remind the Commission that “rules” have a strong and a weak form. A rule, in its weak form, is a guidance, a direction or method for carrying out an action, as in rules of conduct. But in its strong regulatory sense, it attempts to repair a wrong. A free society does not generally create rules in the weak sense. It is called upon to create rules only when wrongful practices that threaten the society need to be curtailed. Thus, the charge to the Commission to create new copper mining rules directs the Commission to create rules in the strong regulatory sense, to prevent copper mining’s further abuse of New Mexico’s waters. The rules should not be thought of as a method for legally permitting the continuation of practices that need curtailing.