



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

**IN THE MATTER OF THE PETITION
FOR ALTERNATE ABATEMENT STANDARDS
FOR THE FORMER ST. ANTHONY MINE,
CIBOLA COUNTY, NEW MEXICO
UNITED NUCLEAR CORPORATION,
Petitioner.**

WQCC 16-05 (A)

**FINDINGS OF FACT AND CONCLUSIONS OF LAW FOR
MULTICULTURAL ALLIANCE FOR A SAFE ENVIRONMENT (MASE)**

August 23, 2017

Pursuant to the Order Granting an Extension for Filing Findings of Fact and Conclusions of Law dated August 21, 2017, the Multicultural Alliance for a Safe Environment (MASE) submits our Findings of Fact and Conclusions of Law following the July 11, 2017 hearing before Hearing Officer Erin Anderson.

Respectfully Submitted,

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Findings of Fact

1. The proceedings in WQCC 16-05(A), the Matter of the Petition for Alternative Abatement Standards for the Former St. Anthony Mine Cibola County in the State of New Mexico, culminated in a hearing before Hearing Officer Erin O. Anderson conducted on July 11, 2017 in Santa Fe, New Mexico.

2. The Pleading Log in this proceeding are posted at <https://www.env.nm.gov/water-quality-control-commission/5087/>. Posted pleadings include;

- United Nuclear Corporation's (UNC) Petition for Alternative Abatement Standards and Request for Hearing (UNC Petition)
- New Mexico Environment Department's Statement of Intent to Present Technical Testimony (NMED SOI)
- Petitioner United Nuclear Corporation's Statement of Intent to Present Technical Testimony (UNC SOI) and
- Statement of Intent to Present Technical Evidence Multicultural Alliance for a Safe Environment (MASE SOI).

3. New Mexico Water Quality Control Commission (WQCC) Regulations at 20.6.2.4103.F provide "Alternative Abatement Standards" which are as follows:

"[F] (1) At any time during or after the submission of a Stage 2 abatement plan, the responsible person may file a petition seeking approval of alternative abatement standard(s) for the standards set forth in Subsections A and B of this section. The commission may approve alternative abatement standard(s) if the petitioner demonstrates that:

(a) compliance with the abatement standard(s) is/are not feasible, by the maximum use of technology within the economic capability of the responsible person; OR

there is no reasonable relationship between the economic and social costs and benefits (including attainment of the standard(s) set forth in Section 20.6.2.4103 NMAC) to be obtained;

(b) the proposed alternative abatement standard(s) is/are technically achievable and cost-benefit justifiable; and

(c) compliance with the proposed alternative abatement standard(s) will not create a present or future hazard to public health or undue damage to property.

(2) The petition shall be in writing, filed with the secretary. The petition shall specify, in addition to the information required by Subsection A of Section 20.6.2.1210 NMAC, the water contaminant(s) for which alternative standard(s) is/are proposed, the alternative standard(s) proposed, the three-dimensional body of water pollution for which approval is sought, and the extent to which the abatement standard(s) set forth in Section 20.6.2.4103 NMAC is/are now, and will in the future be, violated. The petition may include a transport, fate and risk assessment in accordance with accepted methods, and other information as the petitioner deems necessary to support the petition.

(3) The commission shall review a petition for alternative abatement standards in accordance with the procedures for review of a variance petition provided in the commission's adjudicatory procedures, 20.1.3 NMAC."

4. A key element in the evaluation of the UNC Petition is the estimation of water likely to move from the Large Pit at the St. Anthony mine to a point of potential groundwater discharge or use. Both UNC and MASE rely on a table called (in UNC SOI) Exhibit 10e -"Conceptual Water Balance on Large Pit" (UNC SOI p. 208/234 from UNC Petition Table 5.2) to address estimation of water likely to move from the large Pit following completion of the backfill and closure of the Large Pit.

5. UNC SOI Exhibit 10e provides a value of 9.9 gallons per minute (gpm) for "runon from the catchment area." This value is derived from runon estimates far different from estimates derived near the St. Anthony mine. In its Petition, UNC supported its use of 9.9 gpm of "runon from catchment area" of the Large Pit as shown in UNC SOI p.208/234, Exhibit 10e as follows:

"Both the Large Pit and the Small Pit have been observed to capture and store run-off. Although run-off into the two pits is estimated to be a small percentage of precipitation, the catchment areas for the two pits are large enough to collect significant amounts of water. Using a water balance calculation, Dames and Moore (1985) estimated that only 1% of precipitation would produce run-off to the Jackpile Mine pit. INTERA (2006) estimated that 15% of precipitation that falls within the pit watershed would reach the pit as run-off based on a runoff coefficient for a pasture with sandy and gravelly soils. [Emphasis added]. Pondered water has been observed to remain for months within the Small Pit, where it can infiltrate into the exposed Jackpile sandstone or is lost to evapotranspiration.

"In summary, precipitation at the Site is far exceeded by the combination of transpiration during the growing season and evaporation throughout the year. Infiltration of precipitation into the subsurface is negligible across the Site except at a limited number of locations such as the Small Pit. Tamarisk transpiration is estimated to remove groundwater from the Jackpile sandstone at a rate of roughly 14 gpm along a reach of Meyer Draw." UNC Petition at 139/1964.

6. UNC's statement at UNC Petition p. 139, uses a runoff within the pit watershed from a value 15 times that estimated for an area similar to the St. Anthony mine, significantly overestimating the amount of runoff to the St. Anthony mine catchment area. A more reasonable estimate of runoff from the mine catchment area, such as that referred to in the UNC Petition from "Dames and Moore (1985)" would result in the reduction of runoff from the catchment area from 9.9 gpm to around 1 gpm, which virtually eliminates any potential for groundwater from the St. Anthony mine reaching a location of potential future use.

7. UNC, as shown in its SOI, neglected to reduce the amount of "runoff from the catchment area" in its groundwater model to accurately reflect anticipated conditions at the Large Pit following installation of an effective backfill cover.

8. In UNC SOI at p. 193, UNC describes modifications to the water balance to reflect only evaporative changes anticipated as a result of the backfill cover, noting that its groundwater model has been modified to reflect the elimination of evaporation loss from the exposed surface water in the Large Pit following proposed backfill. The UNC SOI, in Exhibit 10e however, fails to identify any reduction in the volume of water entering the Jackpile Sandstone at the base of the Large Pit from the catchment area following cover installation.

9. The elimination of evaporation loss from the large Pit after backfilling must also be accompanied by the elimination of infiltration of runoff from the mine catchment area once an effective backfill cover is installed at the St. Anthony mine.

10. The UNC SOI neglected to change its runoff estimate from the catchment area following the installation of an effective cover, in sharp contrast to its reduction of evaporation losses following coverage of the Large Pit.

11. The UNC SOI (Exhibit 10e) conceptual model of the water balance for the Large Pit accounts for a significant amount of "runoff from the catchment area" to the Large Pit without any adjustment for a potentially lower volume of projected runoff, that could eliminate virtually all projected groundwater flow from the large pit for the foreseeable future.

12. Once a lower volume of runoff water is modeled by UNC before and after installation of the Large Pit backfill cover, it is likely that there would be no discharge from the Jackpile Sandstone to Meyer Draw. *UNC Petition and SOI*

13. The restrictions on groundwater use proposed by the Office of the State Engineer in this matter will prevent the future use of groundwater in the unlikely event that groundwater constituents in the large pit move off site.

14. UNC's proposed installation of effective backfill cover over the large and small pits feasible abatement technologies groundwater protection for the St. Anthony mine site.

15. New Mexico Environment Department Statement of Intent included a letter from MMD to NMED describing the anticipated filing of an Updated Closeout Plan following the conclusion of the AAS proceeding. The letter identifies a deadline for the filing of an Updated Closeout Plan, 90 days after completion of the AAS process- *NMED SOI Exhibit 5*.

16. The St. Anthony Mine Closeout Plan information on the MMD Permits Pending Web Page at <http://www.emnrd.state.nm.us/MMD/MARP/PermitMK006RE.html> has not been updated since 2010. No information related to this AAS proceeding, the interim closeout plan discussed in this proceeding are on file. -. The 2010 Closeout Plan information for the St. Anthony mine does not incorporate mine backfill plans in the drawings or provide cost estimates.

Conclusions of Law

17. WQCC should require a recalculation of the water balance used in the UNC model to represent a more representative infiltration rate.

18. UNC has proposed an abatement technology – a backfill cover - that is feasible and capable of preventing the infiltration of runoff that could result in an exceedence of existing water quality standards;

19. UNC proposed use of an well-design, installed and maintain pit backfill and cover plan for the St. Anthony mine, is the proposed use of a feasible technology to prevent exceedence of abatement standards without potential for groundwater from the St. Anthony mine to reach any point of groundwater discharge or potential use, therefore no AAS is needed to protect groundwater in New Mexico.

20. If the revised UNC model indicates that no groundwater is likely to migrate to a place of future use, or reach any point of potential discharge including the Jackpile Sandstone outcrop at Meyer Draw, then the WQCC must find that AAS are neither reasonable nor necessary to protect groundwater in New Mexico.

21. If no groundwater from the site will reach a point of potential future use, then no AAS is appropriate or necessary and the existing WQCC Abatement Standards will be met at all points of reasonably foreseeable future use. If no AAS is needed, then the Parties can proceed to implement the requirements of the NMMA.

22. Without the high infiltration rate derived from runoff from the catchment area, the volume of groundwater from the oxidized zone created by open pit mining conducted at the St. Anthony mine will not occur in sufficient volume to flow to or reach a point of potential future use.

23. Revised modeling of “runoff from the mine catchment area” to the large pit at the St. Anthony mine site combined with the proposed installation of an effective backfill cover will enable UNC

to comply with the WQCC standards, eliminating the need for adoption of the AAS proposed in this matter.

24. Within 30 days of the WQCC decision in this matter, the Mining and Minerals Division (MMD) of the Energy, Mineral, and Natural Resources Department must update the St. Anthony mine page to include current filings and must distribute a proposed schedule for filing of an updated Closure plan for the St. Anthony mine that complies with all relevant portion of the NMMA regulations. <http://www.emnrd.state.nm.us/MMD/MARP/PermitMK006RE.html>

CERTIFICATE OF SERVICE

I hereby certify that electronic Copies of this Response to the Joint Motion have been provided to:

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